

**PROBLEMS AND PROSPECTS OF GRAPE EXPORTS : A CASE
STUDY OF MAHARASHTRA**

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UNDER THE GUIDANCE OF

DR. S.D.TUPE


2004

CERTIFICATE

Certified that the work incorporated in the thesis entitled **PROBLEMS AND PROSPECTS OF GRAPE EXPORTS : A CASE STUDY OF MAHARASHTRA** submitted by **SHENDE A.H.** was carried out by the candidate under my supervision and guidance. Such material as has been obtained from other sources has been duly acknowledged in the thesis.

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Dr. S.D. TUPE
Research Guide

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LIST OF ABBRIVIATIONS

ACP	: African Carenian Pacific
APEDA	: Agricultural and Processed Food Products Export Development Authority
C.A	: Chartered Accountant
DGFT	: Director General of Foreign Trade
DOM	: Director of Marketing
ECGC	: Export Credit Guarantee Corporation
EEC	: European Economic Community
EGS	: Employment Grantee Scheme
EOU	: Export Oriented Unit
EP	: Export Promotion
EPC	: Export Packing Credit
FAO	: Food and Agricultural Organasiation
FEMA	: Foreign Exchange Management Act
FOB	: Free on Board
GA	: Gibralic Acid
GATT	: General Agreement on Trade & Tariff
GOI	: Government of India
GOM	: Government of Maharashtra
GR	: General Resolutions

IIP	: Indian Institute of Packaging
JNPT	: Jawaharlal Nehru Port Trust
m.tonnes	: Metric tonnes
MNC	: Multi National Corporation
MRDBS	: Maharashtra Rajya Draksha Bagayatdar Sangh
MSAMB	: Maharashtra State Agricultural Marketing Board
NAFED	: National Agricultural Co-operative Marketing Federation of India Limited
NCDC	: National Co-operative Development Corporation
NHB	: National Horticulture Board
NRC	: National Research Center
OCT	: Overseas countries & Territories
PHCs	: Primary Health Centers
PSC	: Phyto-sanitary Certificate
RCMC	: Registration-cum-Membership Certificate
SAARC	: South Asian Association for Regional Co-operation
SCI	: Shipping Corporation of India
TSS	: Total Sugar Solution
WMDC	: Western Maharashtra Development Corporation
WTO	: World Trade Organisation

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CHAPTER I

HISTORY OF GRAPE CROP

1.1 Introduction

Grapes have been known in India since 11th century B.C., But much of its antiquity was not known until the Muslim invasion. Muslim invaders introduced grapes from Iran and Afghanistan at the end of the 12th century, later grapes were taken to the South by Mohamed Bin Tuglak when he shifted his capital to Daulatabad in 1338. He introduced three varieties, Abi (Bhokri), Fakhri and Sahebi. The grape is one of the most ancient of crops, the antiquity going back to the times when Siberia enjoyed a hot climate. In India, it is shown to have been under cultivation in the times of Susruta and Charaka (1356 B.C.). The ancient Aryans knew about grape culture as well as the preparation of beverages from it. The more recent historic facts can be traced to the 16th century when Emperor Akbar introduced and encouraged grape cultivation in India. His successors are reported to have discouraged viticulture on the grounds of religion and the 17th and 18th centuries consequently witnessed a decline in grape growing¹.

Grape cultivation is believed to have originated in Armenia near the Caspian sea in Russia, from where it seems to have spread West ward to Europe and Eastward to Iran and Afghanistan. Thapar (1960) stated that grape was introduced into India in 1300 AD by Muslim invaders from

Iran and Afghanistan. Grape cultivation flourished in Baluchistan and the North West Frontier province during the 16th century. The Mughal rulers after Emperor Akbar discouraged grape cultivation, as drinking of wine is considered to be a sin in the Islamic religion, and thus, grape cultivation in North India got a setback. During the historic event of shifting the capital from Delhi to Daulatabad (in Aurangabad district of Maharashtra) by Mohamad-bin-Tughlak, grape was introduced to South India in the 14th century. According to Pillay (1968), Ibn Batuta, a Moorish traveler who visited Daulatabad in 1430, is reported to have seen flourishing vineyards down the Vindhya mountains².

In India, grape is known since ancient times. Dutt, cited by Watts (1893), stated that grape has been mentioned by Susruta and Charaka in their ancient medical treatises entitled 'Susruta Samhita' and 'Charaka Samhita'. Dr. D.S. Trivedi, in his book Indian Chronology (Bhartiya Vidya Bhawan, Bombay, 1963), places the period of Susruta and Charaka between 1356 and 1220 BC. Kautilya, in his Arthashastra, written perhaps in the fourth century BC, mentioned the type of land suitable for grape growing (Hayes, 1957)³.

The political boundaries of Ancient India, Medieval India and Present Modern India varied. Hence the literary reference of ancient India refers to political India at that particular time.

1.2 Grape growing areas of the world

Grapes are extensively grown in Europe (Spain, France, Italy, Portugal, Yugoslavia) North America (U.S.A. Mexico), South America (Argentina, Chile), Africa (Morocco, Algeria), Russia, Australia and Asia.

In Asia, it is grown in Iran, Iraq, India, China, Turkey and in smaller quantities in other countries.

California (USA) is famous all over the world for its scientific viticulture.

Table 1.1

Countries with the highest area under grape crop and production of grapes in the world.

Sr. No	Country	Area 1000 Ha.	Percentage share of Area	Production 1000 MT	Percentage share of Production
	World	7453		62384	
1	Italy	876	11.75	9774	15.66
2	France	874	11.73	7627	12.26
3	U.S.A.	357 F	4.79	6792	10.89
4	Spain	1200 F	16.10	5646	9.05
5	Turkey	540 F	7.25	3400 F	5.45
6	China	243*	3.26	3087*	4.95
7	Iran	260 F	3.49	2350 F	3.77
8	Argentina	207 F	2.78	2201 F	3.53
9	Germany	101	1.36	1659 F	2.66
10	Chilly	140 F	1.87	1650 F	2.64
11	South Africa	117*	1.56	1550	2.48
12	Romania	241	3.23	981	1.57
13	India	40 F	0.53	940 F	1.51
14	Others (includes 71 countries)		30.30		23.58

Source : FAO – Production year book 2000 Vol. 54 Page. 166-167. Symbols used in the table

* Unofficial figure

F FAO estimate

HA Hectare

MT Metric Ton

The above analysis given in table 1.1 shows that Italy tops with a share of 15.66 per cent (9774000 tonnes) in production of grapes in the world. It is followed by France and U.S.A. with 12.26 per cent (7627000 tonnes) and 10.89 per cent (6792000 tonnes) respectively.

USA is the sixth largest country in area wise grape cultivation, however, production wise it is third in the world. This shows that the average yield per hectare is the highest in USA.

On the other hand Spain ranks first in the world in area wise cultivation of grapes (1200000 ha), however, production wise it ranks forth in the world (5646000 tonnes).

India's contribution of grape production to the world is 1.15% (940000 tonnes), occupying 0.53per cent (40000 ha) of the area of cultivation (in comparison with world grape area cultivation). The remaining grape production and area of grape cultivation is 23.58 per cent and 30.30 per cent respectively in the world. This production and cultivation area is contributed by 71 countries of the world.

1.3 Grape Growing Areas of India

In India grape is grown in temperate, subtropical, tropical and mild tropical regions.

Temperate Zone

The temperate zone of grape cultivation is represented in the upper Sutlej Valley in Kinnaur district of Himachal Pradesh, where most of these are stray household plantings stretching across the valley from 6000 to 12000 ft. altitude which is sheltered from the monsoons. Most of the varieties grown here are either originated as natural crosses between the two wild species. *V. lanata* and *V. parviflora* and adapted to humid temperate climate e.g. various forms of 'Rangspay'. Other varieties with intermediate characters between *vinifera* and *labrusca* (such as cvs. Choultu White, Choultu Red and Skibba Black), are also seen growing luxuriantly. The quality of grapes produced here is superior in appearance with TSS content of 16-18 per cent at harvesting in mid-September to mid-October. The local people are using almost all the produce in distilleries operated individually by each household. The vines are trained naturally on the trees like chilgoaza, deodhar, local pear, almond, apricot etc. Sometimes they are trained on pergolas. The productivity is moderate to heavy in many cases. Though India has a vast temperate zone in Himachal Pradesh, Jammu & Kashmir and Uttar Pradesh hills, commercial grape growing has not yet been established in this region⁴.

Subtropical Region :

This region is represented by parts of Punjab, Hariyana, Western Utter Pradesh, Delhi and Rajasthan and covers an approximate of 15 per cent of the total area under grape in the country. Vines undergo dormancy, bud-break starts in the first week of March and the rains start in the first week of June. Thus, only 90-95 days are available from the initiation of growth to harvest. Hence, Perlette, the early ripening variety is only grown in this region. Rain damage is a problem in Thompson Seedless in this region. Single pruning-single harvest is the practice here⁵.

Tropical region :

This region covers the parts of Maharashtra, Telangana region of Andhra Pradesh and Northern Karnataka. This is the chief viticulture region accounting for 70 per cent of the area under grape in the country. Vines do not undergo dormancy. Double pruning-single harvest is the practice. Maximum and minimum temperatures are 42°C and 8°C respectively. Thompson Seedless and its clones (Tas-A-Ganesh, Sonaka), Anab-e-Shahi, Sharad Seedless and Flame Seedless are the varieties grown in this region⁶.

Mild tropical :

This region comprises of South Interior Karnataka (Bangalore, Kolar, Thumkur, Chitradurga districts) where moderate temperatures with high humid weather prevails. The maximum temperature in a year seldom crosses 36°C. The minimum is about 12°C. Principal varieties are Bangalore Blue (Syn. Isabella), Anah-e-Shani, Gulabi (Syn. Muscat Hamberg), Bhokri. Thompson Seedless is grown with limited success. Except for in Thompson Seedless, two crops are harvested in a year⁷.

Table 1.2
State wise Area of Grapes in India
during the period 1996-97 to 1998-99 (Area, '000' hectares).

State	1996-1997	Per-centage share	1997-1998	Per-centage share	1998-1999	Per-centage share
Andhra Pradesh	2.1	4.90	1.8	4.41	1.8	4.22
Haryana	1.1	2.56	1.2	2.94	1.2	2.82
Karnataka	6.5	15.15	7.5	18.38	7.5	17.61
Maharashtra	27.8	64.80	24.7	60.53	27.0	63.38
Punjab	2.5	5.83	2.5	6.12	2.5	5.40
Tamil Nadu	2.2	5.13	2.4	5.88	2.3	5.40
Others	0.7	1.63	0.7	1.71	0.1	0.23
All India	42.9		40.8		42.6	

Source : Indian Agriculture Vikas Singhal, Indian Economic Data, Research Centre, New Delhi, 2003, page 239.

Table 1.2 show that Maharashtra and Karnataka account for major grape growing area in India. The above table shows that together they account for 80.98 per cent of the total grape growing area (1998-99). In Punjab and Tamil Nadu the area under grape cultivation is 5.86 and 5.39 respectively. In Andhra Pradesh & Haryana the area under grape cultivation is 4.41 and 2.94 respectively, whereas other states occupy 0.23 per cent of the total area.

The trend shows that the change of percentage share of area of the states has remained relatively in elastic in the last three years. We get the clear inference that Maharashtra ranks first in India in the area of grape cultivation with 27000 hectares of area out of the total area of 42600 hectare of India. The area of cultivation of grape of Maharashtra is about 63.38 per cent out of the total area of grape cultivation of India. (1998-99 fig.).

Table 1.3

State wise Output of Grapes in India during the period 1996-97 to 1998-1999 (Production, '000' Metric tonnes)

State	1996-97	Per-centage share	1997-98	Per-centage share	1998-99	Per-centage share
Andhra Pradesh	51.2	4.51	35.3	3.64	45.0	4.16
Haryana	15.3	1.35	17.4	1.61	9.1	0.84
Karnataka	196.0	17.22	226.6	23.37	226.5	20.91
Maharashtra	750.9	66.00	568.2	58.61	682.4	63.02
Punjab	66.50	5.85	66.5	5.85	67.1	6.20
Tamil Nadu	47.4	4.18	48.0	4.95	50.2	4.64
Others	7.3	0.64	7.3	0.67	1.4	0.13
All India	1137.6		969.3		1082.7	

Source : Indian Agriculture Vikas Singhal, Indian Economic Data, Research Centre, New Delhi, 2003, page 239.

Table 1.3 indicates that Maharashtra and Karnataka account for 83.93 per cent of the total production of grapes from Maharashtra. The percentage share of production of Punjab, Tamil Nadu and Andhra Pradesh is 6.20 per cent, 4.64 per cent and 4.16 per cent respectively. Haryana and Other States account for 0.84 and 0.13 per cent production respectively. (1998-99 fig.).

The trend shows that the change of percentage share of production of grapes of major states has remained relatively inelastic in the past three years, except for Karnataka and Maharashtra.

The percentage share of production of grapes of Karnataka was 17.27 per cent, 23.37 per cent, 20.91 in 96-97, 97-98 & 98-99. This show for Karnataka there was 35 per cent increase and 10.53 per cent decrease of production over the previous year.

The percentage share of production of grapes of Maharashtra was 66.18 per cent, 58.61 per cent and 63.02 per cent in the years 96-97, 97-98 and 98-99 respectively. We get clear inference that as per 98-99 figures Maharashtra ranks first in the production of grapes with 682400 m. tonnes out of 1082700 m. tonnes production in India.

1.4 : Grape growing areas of Maharashtra

In Maharashtra grapes are grown in the districts of Nashik, Sangli, Solapur, Pune, Satara, Latur, Osmanabad, Ahmednagar, Dhule and other minor area is cover by districts like Parbhani, Jalgaon and Aurangabad. However the major grape growing districts are Nashik, Sangli, Solapur and Pune.

Table 1.4**Area under grape cultivation in Maharashtra during the period 1986-87 to 1998-99.**

Year	Maharashtra		Nashik		Sangli		Solapur		Pune	
	Area in Hectors	% change of area	Area in Hectors	% change of area	Area in Hectors	% change of area	Area in Hectors	% change of area	Area in Hectors	% change of area
1986-87	4396		2272		889		706		280	
1987-88	6739	53.29	3995	75.83	1062	19.46	876	24.07	263	-6.08
1988-89	7242	64.74	3995	75.83	1391	56.46	892	26.34	263	-6.08
1989-90	11762	167.56	5225	129.97	2234	151.29	1782	152.40	711	153.92
1990-91	15210	245.99	7837	244.93	2535	185.03	1800	154.95	750	167.85
1991-92	15292	247.86	7937	249.33	2536	185.26	1781	152.26	750	167.85
1992-93	15726	257.73	7983	249.38	2660	199.21	1893	168.13	792	182.85
1993-94	16631	278.32	8183	260.16	2720	205.96	1893	168.13	992	254.28
1994-95	21085	379.64	11419	402.59	3142	253.43	2070	193.20	1010	260.71
1995-96	28012	537.21	18330	706.77	4145	366.25	1812	156.65	1010	260.71
1996-97	27813	532.68	18330	706.77	4080	358.94	1842	160.90	979	249.64
1997-98	24704	461.96	16260	615.66	4164	368.39	1365	93.34	611	118.21
1998-99	26973	513.58	16263	615.80	5573	526.88	1470	108.21	755	169.64

Source : District wise Agriculture Statistical Information of Maharashtra Part II 1996-97 & 1997-98.

Publication : Office of the Commissioner of Agriculture, Pune.

Note : The percentage changes of area are calculated with 1986-87 as the base year.

The trend from table 1.4 shows that the area under grape cultivation in Maharashtra has increased from 4396 hectares to 26973 hectares. Considering 1986-87 as the base year, the analysis shows that the area of grape cultivation has increased from 53.29 per cent in 1987-88 to 513.58 per cent in 1988-99.

The area of grape cultivation in Nashik District has increased from 75.83 per cent in 1987-88 to 615.80 per cent in 1998-99. The area of Grape cultivation of Sangli region has increased from 19.46% in 1987-88 to 526.88 per cent in 1998-99.

The area of grape cultivation of Solapur region has increased from 24.07 per cent in 1987-88 to 108.21 per cent in 1998-99.

The area of Grape cultivation of Pune region was negative by -6.08 per cent in both the years 1987-88 and 1988-89. Thereafter the area of Grape cultivation increased from 153.92 per cent in 1989-90 to 169.64 per cent in 1998-99. The trend shows that the increase of area of cultivation of grape was higher in Nashik region followed by Sangli than the average increase of Maharashtra region. The increase in area of Solapur and Pune region was lower than the average increase of Maharashtra region.

The increase in area of grape cultivation is due to good remuneration for grapes in the market. The harvesting season of grapes is from December to April. There are good prices for grapes from December to March as only perennial, fruits are available along with grapes, except oranges.

Table 1.5**Yield per hectare under grape cultivation in Maharashtra during the period 1986-87 to 1998-99.**

	Maharashtra		Nashik		Sangli		Solapur		Pune	
Year	Av. yield in ton/ha	% change of Av. yield	Av. yield in ton/ha	% change of Av. yield	Av. yield in ton/ha	% change of Av. yield	Av. yield in ton/ha	% change of Av. yield	Av. yield in ton/ha	% change of Av. yield
1986-87	12.5		12.6		9.8		13.6		16.5	
1987-88	15.5	24.0	16.4	30.15	13.4	36.73	10.5	-22.80	28.0	69.69
1987-89	22.4	79.2	20.1	59.52	24.2	146.93	29.8	119.11	24.2	46.66
1989-90	17.0	36.0	14.5	15.07	20.4	108.16	17.5	28.67	19.8	20.00
1990-91	16.1	28.8	14.1	11.90	20.3	107.14	19.5	43.38	18.6	12.72
1991-92	18.7	49.6	17.3	37.30	21.9	123.46	22.5	65.44	19.7	19.39
1992-93	23.9	91.2	24.3	92.85	27.1	176.53	23.0	69.11	19.6	18.78
1993-94	24.3	94.4	24.2	92.06	31.4	220.40	19.8	45.58	25.2	52.12
1994-95	22.0	76.0	20.6	63.49	26.1	166.32	16.4	20.58	28.4	72.12
1995-96	24.7	97.6	22.0	74.60	39.0	297.95	19.7	44.85	24.8	50.30
1996-97	27.4	119.2	28.2	123.80	31.5	221.42	17.5	28.67	22.8	38.18
1997-98	22.7	81.6	23.1	83.33	22.7	131.63	23.4	72.05	18.5	12.12
1998-99	25.3	102.4	23.1	83.33	34.3	250.0	24.4	79.41	27.4	66.06

Source : District wise Agriculture Statistical information of Maharashtra Part II 1996-97 & 1997-98

Publication : Office of the Commissioner of Agriculture, Pune.

Note : The percentage changes of average yield are calculated with 1986-87 as the base year.

According to table 1.5, the yield per hectare of grape production of Maharashtra state has increased from 12.5 tonnes/ha in 1986-87 to 25.3 tonnes/ha in 1998-99. Taking 1986-87 as the base year, the percentage change in average yield was 24 per cent in 1987-88 and it further increased to 119.2 per cent in 1996-97 and then it was 81.6 per cent in 1997-98 and 102.4 per cent in 1998-99.

The average yield increased from 12.6 tonnes/hectares in 1986-87 to 23.1 tonnes/ha. in 1998-99 for Nashik Region. The yield was 28.2 tonnes /ha in 1996-97.

For Sangli region the yield increased from 9.8 tonnes/ha. in 1986-87 to 34.3 tonnes/ha. in 1998-99. The percentage increase of yield was 36.73 in 1987-88 to 250 per cent in 1998-99. In the year 1995-96 the percentage change of yield was 297.95 per cent. In Solapur region the yield increased from 13.6 tonnes/ha to 24.4 tonnes/ha. in 1998-99. The percentage change of yield was negative by -22.80 per cent in 1987-88. Thereafter the percentage change in yield was 119.11 per cent. The percentage change in yield showed fluctuations from 1989-1990 and 1996-97. In the year 1997-98 and 1998-99 the percentage change of yield per hectare was 72.05 per cent and 79.41 respectively. The yield per

hectare of Sangli region was highest in Maharashtra through out the period from 1988-89 to 1998-99. In 1998-99 it was 34.3 tonnes/ha.

In Pune region the yield increased from 16.5 tonnes/ha. in 1986-87 to 27.4 tonnes/ha. in 1998-99. The percentage change of yield per ha was 69.69 per cent in 1987-88. Though there was an increase in percentage change of yield per hectare in Pune, there were fluctuations in the yield per hectare. In the year 1998-99 the percentage change of yield per ha. was 66.06 per cent.

The analysis shows that there was continuous increase in yield per hectare in Nashik and Sangli region. Moreover this increase in yield was more than the average yield of Maharashtra region. The yield of Pune and Solapur region showed fluctuations in comparison with the average yield of Maharashtra region. The increase in yield is due to the spread of drip irrigation, techniques like manure through drip irrigation, introduction of root stock system, thinning, protection from adverse climate etc.,

Table 1.6
Grape Production of Maharashtra from during the period 1986-87 to 1998-99.

Year	Maharashtra		Nashik		Sangli		Solapur		Pune	
	Production in '00'M.T	% change of Production	Production in '00'M.T	% change of Production	Production in '00'M.T	% change of Production	Production in '00'M.T	% change of Production	Production in '00'M.T	% change of Production
1986-87	550.7		286.7		86.8		95.7		46.3	
1987-88	1041.2	89.06	656.0	128.81	142.5	64.17	92.0	-3.87	73.6	58.96
1988-89	1580.4	186.98	801.8	179.66	336.7	287.90	266.1	178.05	63.8	37.79
1989-90	1996.1	262.46	757.5	164.21	455.8	425.11	311.2	228.18	140.7	203.88
1990-91	2454.6	348.72	1105.4	285.55	516.9	495.50	351.2	266.98	139.7	201.72
1991-92	2861.1	419.53	1371.9	378.81	555.3	537.44	400.4	318.39	147.7	219.00
1992-93	3757.8	582.36	1938.4	576.10	721.8	731.56	435.7	355.27	155.4	235.63
1993-94	4042.8	634.12	1980.7	590.86	856.5	886.75	375.9	292.78	250.2	440.38
1994-95	4631.0	740.92	2357.2	722.18	819.6	844.23	339.0	254.23	287.3	520.51
1995-96	6920.9	1156.74	4042.7	1310.08	1618.1	1764.17	356.9	272.93	249.9	439.74
1996-97	7625.3	1284.65	5169.1	1702.96	1285.2	1380.64	322.4	236.88	223.2	382.07
<u>1997-98</u>	<u>5601.1</u>	<u>917.08</u>	<u>3765.0</u>	<u>1213.21</u>	<u>946.8</u>	<u>990.78</u>	<u>320.0</u>	<u>234.37</u>	<u>113.0</u>	<u>144.06</u>
1998-99	6832.5	1140.69	3754.0	1209.38	1911.5	2102.18	359.8	275.96	207.0	347.08

Source : District wise Agriculture Statistical Information of Maharashtra Part II 1996-97 & 1997-98.

Publication : Office of the Commissioner of Agriculture, Pune.

Note : The percentage change of production are calculated with 1986-87 as the base year.

Table 1.6 shows that the production of grapes has increased from 55070 m. tonnes in 1986-87 to 683250 m. tonnes in 1998-99 in Maharashtra State, considering 1986-87 as the base year the percentage increase of production was 89.06 per cent in 1987-88 and since then it increased continuously to 1140.69 per cent in 1998-99. The percentage change in production was 1284.68 per cent in 1996-97. In Nasik region the production increased from 28670 m. tonnes in 1986-87 to 375400 m. tonnes in 1998-99. The percentage change in production increased from 128.81 per cent in 1987-88 to 1209.38 per cent in 1998-99. The percentage change in production was 1702.96 per cent in 1996-97. The trends shows that the percentage change in production was more in Nashik region than the average percentage change in Maharashtra in the years 87-88, 95-96, 96-97, 97-98 and 98-99.

The production of grapes of Sangli region increased from 8680 tonnes in 1986-87 to 191150 tonnes in 1998-99.

The percentage change of grape production was 64.17 per cent in 1987-88 and it increased to 2102.18 per cent in 1998-99. This percentage increase in grape production was all times higher than the percentage

hange increase of grape production in Maharashtra except for the year 1987-88.

In Solapur region the production increased from 9570 m. tonnes in 1986-87 to 35980 m. tonnes in 1998-99. The percentage change of production of grapes was negative by -3.87 per cent in 1987-88. Thereafter the percentage change of production increased from 178.05 per cent in 1988-89 to 275.96 per cent in 1998-99. The percentage change of increase of production of grapes of Solapur region was less than the percentage change of increase of production of grapes of Maharashtra during the period 1986-87 to 1998-99.

In Pune region the production of grapes increased from 4630 m. tonnes in 1986-87 to 207000 m. tonnes in 1998-99. The percentage change of production increased from 58.96 per cent in 1987-88 to 347.08 per cent in 1998-99. It was 520.51 per cent in the year 1994-95. The percentage change of increase of production of grapes of Pune region was less than the percentage change of production of grapes of Maharashtra during the period 1986-87 to 1998-99.

The production of grapes has increased because of increase in yield and area of grape cultivation. The earlier problems like soil salinity and water were solved. Hence the increase in production.

1.5 Salient Features of Commercial Varieties Grown in India^{8&9} :

1. Anab-e-Shahi :

Introduced in-Hyderabad from the Middle East around 1890. A widely adapted cultivar and grown successfully as far as in Kinnaur district with humid temperate climate and semi arid tropical conditions of Telangana and mild humid tropical climate of Tamil Nadu. It is intensively cultivated in Andhra Pradesh. An average yield of 35 tonnes/ha is obtained, though as high as 80 tonnes/ha are a common in few areas. The quality of fruit is average in North, good in South and Western parts of India.

2. Bangalore Blue (*Isabella*) :

This is also a widely adapted cultivar, although grown mainly in South Interior Karnataka. It is a medium cropper and does well both on Kniffin and bower systems and responds well on pruning to medium and long canes. Though considered a mediocre table grape it is extensively used for making juice and wine in Karnataka. The juice is thick and purplish in colour. TSS 16-18 per cent, acidity 0.8-1.0 per cent when fully ripe.

3. **Beauty Seedless :**

An introduction from California, U.S.A. Vines are medium vigour. An early ripener and mostly cultivated near big cities in Punjab, Haryana, Delhi and Uttar Pradesh for quick marketing because of its low keeping quality due to poor pedicel attachment. The Berries are bluish black, small, seedless and the bunches are medium large, long cylindrical, shouldered well filled to compact. It bears well both on Kniffin and head system but yields better on bower system. On an average it yields 30 to 35 tonnes/ha. Ripening is not uniform during May to first week of June in North India. TSS 18-21 per cent, acidity 0.6-1.0 per cent and juice 70-75 per cent. On account of its high juice percentage, sweetness and heavy yield potential, it is useful for juice processing industry.

4. **Bhokri :**

One of the oldest varieties under cultivation in India, introduced in Deccan in 1338 by the then Mohammedan rulers. It was an important commercial cultivar in Maharashtra until late 1960's. Till recently in Tamil Nadu it occupied nearly 40 per cent under grapes. Yields of over 60 tonnes/ha have been common both in Tamil Nadu and Maharashtra conditions. The berries are

greenish yellow, ellipsoidal or ovoid, small size and moderately variable. Ripening is uniform, but late. The fruit quality is sub-acidity with TSS 16-19 per cent, acidity 0.6-0.7 per cent and juice 60 per cent. The Berries are susceptible to cracks under rainy conditions and keeping quality is poor, hence not suitable for long distance marketing.

5. Gulabi (Muscat Hamburg) :

It is suspected to be a natural hybrid between Muscat of Alexandria and Red Muscadel. It is grown widely in Tamil Nadu and even recommended for commercial cultivation in Uttar Pradesh. It is a medium cropper, yields range from 10-12 tonnes/ha. Vines are usually pruned to short canes. The ripening is uneven, but keeping quality is good. TSS 18-20 per cent, acidity 0.5-0.6 per cent and juice 60-75 per cent. The variety is suitable for off-season production and by staggering pruning 5 crops in a 2 year period are possible in Tamil Nadu.

6. Perlette :

This is a hybrid evolved by Dr. H.P. Olmo at the University of California, Davis, U.S.A. Since, it is an early ripening variety and suited for the short ripening period available in Northwestern plains of India, over 95 per cent of the area under grapes is covered

by this variety in these states. Vines are medium in vigour good yielding potential up to 35 tonnes/ha in North India and yields are better in bower and telephone system of trellising. Its Bunches are medium large, long conical and compact and mostly necessitate berry thinning. Ripening is uniform and berry quality is medium with TSS 16-18 per cent, acidity 0.5-1.0 per cent and juice 60 per cent.

7. Pusa Seedless :

It is a selection made at I.A.R.I., New Delhi from an unknown parental source, but its morphological features are similar to that of Thompson Seedless. It is differentiated only in berry shape, which is less elongated as compared to Thompson Seedless. Berries are known to be sweeter and higher yielding than Thompson Seedless under North Indian conditions, performs well on Kniffin, bower and telephone system. TSS 20-22 per cent, acidity 0.5 per cent and juice 60-65 per cent, the berry has good keeping quality.

8. Thompson Seedless :

This is the most important table grape and raisin cultivars grown in India and its cultivation has become very successful in Maharashtra and North Interior Karnataka. Vines are medium in

vigour, a mid season variety requires 140-145 days from fruit set to ripening and requires higher temperatures with bright sunshine days for fruitfulness of the vines. Ripening is uniform in February-April in peninsular India and mid-June in North India. It is a medium heavy cropper, yields on an average 20-25 tonnes/ha. Its bunch size is medium to large and conical to cylindrical in shape, shouldered well filled to compact. The berries are green to greenish yellow when fully ripe, ellipsoidal and less variable in size. TSS 20-22 per cent, acidity 0.5-0.6 per cent and juice 70-80 per cent with neutral flavour. Keeping quality is good. Certain budsports from Thompson Seedless have become popular in Maharashtra, such as Tas-A-Ganesh, Sonaka & Manik Chaman.

Tas-A-Ganesh (Tas-Tasgaon, A-Arve, Ganesh- Lord Ganesh) has berries longer and bulging on one side with corresponding depression on the other side affording good shape to bunches. This variety responds well to Gibberellin treatment for obtaining better fruit quality.

According to field survey, Vasantrao Arve of Sangli discovered this clone. The break up of Tas-a-Ganesh given by him was

Tas – Tasgaon

a - Arve's

Ganesh – Lord Ganesh temple existed in the vineyard where this clone was discovered.

(See Appendix - I for details)

Sonaka (So- Solapur, Na- Nanasaheb, Ka- Kale) has berries longer, cylindrical oblong, yellowish in colour at ripening with pink tinged thin skin. TSS is higher about 22-24 per cent. It responds to Gibberellin treatment in berry elongation and size.

According to field survey, Sonaka was discovered in 1978 (formally inaugurated in 1980) by Nanasaheb Kale of Nanaz village of Solapur.

The break up Sonaka as given by him was

So - Solapur

Na - Nanasaheb

Ka - Kale

Manik Chaman : It has berries similar to Sonaka but remains shining yellow and the variety is more fruitful with uniform ripening of berries on medium large clusters.

9. Sharad Seedless :

A seedless budsport identified from Kishmish Chorni. It is a prolific bearer. Berries are bold, ellipsoidal, crisp and bluish/purplish black in colour. High TSS 22-24 per cent with pleasant flavour. It has become one of the choicest table varieties.

As far as export is concerned the varieties of Thompson seedless, Tas-a-Ganesh, Sonaka & Sharad Seedless are in demand.

1.6 The story of Grape export¹⁰

The progressive grape growers of Maharashtra had made remarkable progress in producing good quality seedless grapes by early 1970's. Hence they got a good market for their produce in Mumbai. The field survey revealed that in the mid 1970's there was some dispute between the grape farmers and the prominent '*dalals*' of Mumbai. The dispute between the grape growers association and '*dalals*' reached such a height that the '*dalals*' decided to impose a ban on buying grapes from the farmers. This ban led the farmers to search for alternate traders. In such circumstances, the growers approached the traders from the Muslim community who in turn readily agreed to buy grapes from the grape growers.

After the partition of India, some Muslims settled in Pakistan and a few of them migrated to the middle East. The grapes bought by Muslim traders were sent to their friends and relatives in the Middle East countries. The people of the Middle East countries appreciated the quality and taste of Indian grapes. Since 1975, the demand for Indian grapes in the Middle East kept on increasing. This was the beginning of grape exports. Initially the grapes were exported by air but latter ship transportation was made possible. During the period 1975-90, the farmers studied the requirement of export markets. However, merchant traders did the exports to the middle east.

The Historical Set-up for European exports :

From the field survey, the concept of an export federation of grapes was thought of in 1987-88, by the grape farmers association. At that time cooling chain was demanded through local Newspapers. Some 35 persons approached the association for fulfilling the demand of cooling chain. From this the cool chain unit of Mr. Arun Patil (Mobile Unit) was selected. But it was not of uniform temperature, so some modifications were done.

During this period a Pimpen (Champagne) Co-operative was set up in Pimpalgaon Baswant taluka of Nashik District. The progressive grape farmers of Nashik were involved in this Pimpen Co-operative. This co-operative (Pimpen) had a tie-up with a European company. The grape farmers of this co-operative had toured Europe to study its technicalities. The study tours to Europe by grape farmers of this cooperative and the discussions on the subject with experts had set high ambitious in the minds of the farmers.

One of the ambitious members Mr Balasaheb Jagtap, of the Pimpen cooperative decided to export grapes to Europe. This farmer, a standard VI dropout, had a problem with the English language. Hence he took a lawyer friend with him to London in December, 1989. They stayed there till the first week of February 1990. A survey of the market was done for 10-12 days. Initially they took one m. ton grapes by air. But no one was ready to take it, because of the bad identity and prejudice against Indian grapes. This farmer requested a trader of Indian origin to keep the grapes on his shelf and not to worry about money. The farmer who kept a secret watch, saw that the grapes were sold. The traders rang the farmer in the hotel room for more grapes. In this way 16 m. tonnes of grapes were

ordered from Nashik in the year 1990. Thus, export to Europe market clicked due to the entrepreneurship of this progressive farmer.

This experience was narrated in the homeland. The Marketing Board of the Govt. of Maharashtra conducted a survey in the European Market in Sept., 1990. The survey team included progressive grape growers along with some experts in the related field. The survey revealed that there was window available for Indian grapes in the European Market for six weeks in the month of April-May. During this period grapes are available only from India throughout the world. From U.K. a part of the team went to Chile for study. Pre cooling was studied in Chile. The pre-cooling unit of Chile was from the Humifresh Company of California. After pre-cooling the life of grapes increases by 60 days. Our prior export to middle east was without pre-cooling. However we had cold storage in Mumbai.

The concept of pre-cooling in India was born prior to the survey of Marketing Board of Maharashtra, due to the efforts of grape growing association. This pre-cooling was indigenous in the form of a mobile van. This mobile pre-cooling was replaced by Humifresh unit, by the export cooperative.

The survey also showed that export of grape by ship was a global practice because of its economy. Chile exported grapes to Europe by sea. The distance between Chile and Europe was 5619 n miles, whereas, the distance between India and Europe by sea route was 5084 n miles. Thus, the sea route distance from Chile & India to Europe was more or less the same. If it was possible Chile to export grapes to Europe, than it can be possible by India also. Hence, it was decided to export grapes by sea-route to Europe.

On May 9, 1991 one container of 20 feet was sent to U.K. by sea by the farmers cooperative with the support of the Marketing Board of the Maharashtra Government.

The European traders or English middlemen of Super Market were introduced to these grape growers in 1991 by one of the members, who was part of the team of the study tour to European Market.

The information from the survey revealed that in 1992 a group of some 16 families of grape growers from Nashik came together to form a private company of grape exporters. Each family had its own brand in the company. In 1992 the growers company got Rs. 58 per kg as profits only in the London Market. 'Green gold' (Pound Sterling) was discovered by exporting grapes to the U.K. market. Soon this message

was passed to grape growers through public speeches. This resulted in a heavy rush for grape exports to London Market.

Mean while each family disintegrated into small groups as grower-exporters from 1996. Thus, the concept of grower-exporter was born. In India, the concept of grape grower-exporter is an important landmark in the history of Horticultural export in particular and Agricultural export in general.

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CHAPTER II

REVIEW OF LITERATURE

The concept of grape exports in India gained momentum from 1991. The reference period taken for the study is from 1991 to 2000. Enough research has been done on production related aspects of grapes but no spadework has been done in the field of grape export in this decade. An assortment of literature on the subject was collected from magazines and official reports of the Government constituted committees.

Precisely these were the difficulties of the present task. There were no books to refer to and get a right track. Notwithstanding such odds, the following literature was traced and collected during the study.

Amla B.L¹, in the monograph GRAPES IN INDIA PRODUCTION, PRESERVEATION AND PROCESSING, published by CENTRAL,FOOD TECHNOLOGICAL RESEARCH INSTITUTE MYSORE, 1991. The author in the monograph writes that Packing by itself is not sufficient for boosting export trade without proper attention to the harvesting, transportation and storage.

The monograph informs that the countries of Western Europe, North Central America, Chile, Cyprus, Israel, Turkey, Afghanistan, Australia, Lebanon, Jordan and South Africa are

important exporters of grapes. The author also notes that one of the important constraints in grapes export is the high cost of air transportation which has therefore necessitated technologies for transportation by sea including pre-cooling, packaging with grape guards, cold storages and perhaps refrigerated trucks.

Priya Prakash² , Principal Advisor (Agriculture), Planning Commission presented a paper, "EXPORT OF GRAPES-DEVELOPMENT OF INFRASTRUCTURE" in a State level Seminar on Grapes, 5th & 6th Sept., 1992, Pune.

In the paper the author observed that Grapes are next only to Mangoes, in quantity and value of fruits, exported from India. The grape growing areas of Maharashtra, being close to international airport and seaport and because of the sustained efforts made by the progressive growers in increasing the supply base for quality produce, are in an advantageous position. The establishment of pre-cooling units for which assistance was provided by the National Horticulture Board and National Cooperative Development Corporation, gave a fillip in ensuring quality of the produce and switching over from costly mode of transportation by air to ocean freight.

As a representative of government, Ms Priya Prakash gave the following information to the grape exporters :

- a) The producers and exporters have been insisting in the past that current informations about price trend and market behavior in respect of exportable horticultural produce should be made available to them. Efforts are already under way to ensure that such information is made available as early as possible through mass media after collecting the same from various markets, through International Trade Centre.
- b) The facilities for perishables at the exit points, airports and sea ports are being strengthened. As a short-term measure walk-in-type of coolers have already been installed at Delhi and Bombay airports. The International Airport Authority of India has already commissioned techno-economic feasibility studies about pre-cooling and cold storage requirements at the airports, a report of which is likely to be available soon.
- c) The Budgetary support for these activities would be provided by the Government and funds for this purpose are being earmarked specifically.

The author also informs that the government with a view to provide impetus to Agri-business signed an agreement with United State Agency for International Development (USAID) for an Agricultural Commercialisation and Enterprise Project (ACE) which is to be implemented in Maharashtra state through Industrial Credit and Investment Corporation of India (ICICI). The USAID would provide an amount of US\$20 million (2 cores) to ICICI for financing the creation of infrastructure, pre-cooling cold-storage, packaging, transport, processing as also to acquire the latest technologies and equipment. One of the important components of the project is the technical assistance programme under which trade promotion and investment tours and seeking technical expertise, would be funded up to 75 per cent. Even the organisations in the cooperative sector are eligible for seeking such assistance under the project.

Khapre Rangnath Laxman³ of Niphad, Nashik, has narrated his experience of pre-cooling unit in Drakshavrita Sovinar, 1992.

According to him the Maharashtra Rajya Draksh Bagayatdar Sangh was studying the pre-cooling for two years. The sangh gave an advertisement in news paper, called the manufacturers through

letters, negotiated with them and discussed with them the price and technology.

Mr. Arun Patil of Procon Pvt. Ltd., was given the task of setting of the pre-cooling unit. All the concepts were new to the grape growers. Flooring, insulation, wall and slap to be coated with thermocal, machinery fitting, took some time. Though the pre-cooling unit was installed, it had some defects. It was necessary for the humidity compressor to be of a good quality and also the availability of spare parts. There was a necessity of proper installation of condensor, so there would be safety from gas leakage. The door of the pre-cooling unit must be good and also the motors should be properly insulated.

The technology was new and experience was less. But still the problems of the pre-cooling unit was solved with healthy discussions with Mr. Arun Patil.

Arve Vasantrao⁴ in an article, Pre-cooling of grapes at farm level : Review of Export strategy & constraints, Drakshavritta Smarnika, 1992, aims to illustrate the need of pre-cooling practice and necessity of creating this most vital facility at farm level. An initial glance at past export activities, reveals that the seedless grapes from

Maharashtra state alone are being exported since late seventies by air to the Gulf countries.

With the import of GRAPE GUARD paper in 1982, the export of grapes by oceanic shipment commenced. The major constraint which had inhibited large-scale development had been the lack of 'COOL CHAIN' during post harvest handling of grapes. The constraints of air cargo space and high air freight rates compared to other countries has limited further development in the export of grapes by air. For viability of export earning, the major grape exports must be effected by ocean mode where the necessary infrastructure has to be established.

Bombay is the ideal port for air/oceanic shipment, a distance of 160 kms from Pune, 180 kms from Nasik, 400 kms from each Sholapur and Sangli; the prominent grape producing regions of Maharashtra.

The harvested grapes after packing in corrugated boxes of 2-4 kgs. are transported to cold storages at Bombay. Normally, it takes about 24 hours to reach the grapes at cold storage from the time of harvesting. During this period there is a considerable rise in fruit temperature affecting the storability of the fruit. Further this

warm fruit is not quickly cooled to 0°C in the cold storage. It takes about 3-6 days to cool down these warm grapes to 2°-3°C in cold storage. No pre-cooling facility is available in any of the cold storages in India. Then, this poorly cooled produce is sent in clocks for stuffing in refer containers, for further shipment to the Gulf countries. The grapes, after reaching the destined market start showing the effects of faulty temperature management from harvest point to the shipping point, with the symptoms of bleaching, drying of stems-pedicals, shriveled berries, browning and mould development etc. thus reducing the marketability of the fruit.

Whereas, the grapes arriving from Australia and Chile are appreciated in the Gulf countries as their grape consignments have the 'Garden Fresh look, for the reason that these countries have developed 'Cool chain' infrastructure very effectively.

The development to increase grape export was with the due consideration of socio economic importance of the grape crop and its vast export potential. National Horticulture Board (NHB), Dept. of Agriculture and Cooperation, Ministry of Agriculture, Government of India has formulated a project for strengthening of post harvest management infrastructure of grapes.

Similarly, Agricultural and Processed Food Products Export Development Authority, the Ministry of Commerce, the Govt. of India, has proposed 'Export Enhancement Programme' to gear up grape exports.

At the end of the 1991 grape-season, the first consignment of Indian grapes was sent to the U.K. with the promising success. This was possible because the grapes were pre-cooled prior to shipment, for the first time in the history of Indian grapes export.

During the 1992 grape season, a number of consignments of pre-cooled grapes were sent to the UAE, the UK but with the limited success. The reason behind the failure to achieve full success was observed during a survey and the reasons may be summarized as follows :

1. Delay in commencement of pre cooling the grapes after harvest.
2. Non-availability of fool-proof pre cooling units.
3. Lack of identity designed cold storages in growing regions.
4. Shortage of refer containers.

Gaikwad Jaywantrao narrates his experiences of 'Indian grapes in Europe market' in Drakshavritta Souvenir, 1993.

Mr. Gaikwad tells his rich experience of his visit to England, the Netherlands and Germany.

The experience narrated by him is a treasure of knowledge and the following points noted by the author cannot be avoided.

- a. Europe imports grapes from Chile, Israel, Mexico, Brazil, South Africa etc. India is a new entrant for the export of grapes in Europe.**
- b. The quality standards of grapes of other grape exporting countries to Europe is superior to Indian grapes.**

To reach such standards Indian grape growers should work hard at the earliest. If this does not happen than there will be a stagnation of grape export to Europe.

Moreover the European consumers select grapes by their/its external appearance is shine, size, packing etc. rather than by their/its sweetness. Moreover they prefer less sweet grapes. Hence there is a need to pay attention to the requirements of the European consumers.

- a. Export quality, reliability and excellence is a must for the European market. Any deficiency in it results into loss of market entry for the entire Indian grape exporting fraternity. Any exporter who**

exports without quality parameters may cause problems. This suggestion is made, as we have to learn a lesson from the Brazil experience.

- b. The suggestion on packing says that the African countries boxes are of good quality. Indian exports should be from such quality boxes only. The Maharashtra State Grape Growers Association should import such boxes and distribute it to the exporters. The Indian Institute of Packaging, Mumbai, should take a lead in this without any negative attitude.
- c. There is a suggestion to use palatised boxes only. The unloading work from the container is completed within half an hour, due to palatisation of boxes. The pallets are carried straight to the cold storage. If there are only boxes in the container without any palatisation than the unloading work takes four hours.
- d. There is an import duty of 18 per cent on Indian grapes.
There are three ways of levying such import duties.
 - i. 18 per cent Import duty on overall sale.
 - ii. 18 per cent amount on invoice.
 - iii. The IICP Agricultural Committee publishes a bulletin after every 15 days.

The exporter is told to pay import duty by any one of the above modes according to the orders of the importing country.

The African Carenian Pacific states (ACP) and Overseas Countries and Territories (OCT) have got duty concession and exemptions. But the new entrant, India, has no exemptions in import duty in Europe. The Maharashtra State Grape Grower's Association should take a lead in reducing this import duty. The experience, of the foreign market visit by Mr. Gaikwad, certainly serves as a guiding light to grape exporters.

Prof. Y.S.Patil⁶ in an article, 'How export quality grapes should be?' in *Drakshavritta Smaranika* 1993, highlights the quality of grapes, the plucking method and the season of grapes, Pre cooling, cold storage and New packing methods & its care while in cold storage.

The article also gives important guidance on pesticide application with reference to the use of quantity & its application rules on grapes. There is information that from Jan 1st 1993, the European Common Market has made it compulsory to test pesticide residue on grapes before exporting it. The EEC has recommended some laboratories in Mumbai for this work. If the laboratory

rejects the grapes thrice, then the exporter is black listed and such exporters are never given a chance to export grapes in the EEC territory.

Thus, this article throws a new light on pesticide residue and its solution.

G. Gopinath & V.Nache Gowda in an article, 'Export scenario of grape grown in India' in Drakshavrita Souvenir, 1993, suggest measures to improve export of grapes.

Some unique suggestions among them were :

- i. The varieties accepted at the International market can be tried on a small scale by adopting sound management practices to produce quality grapes, that can be harvested during the December-May, since this period is an off season for Western grape growing countries.
- ii. On grounds similar to that of coffee, coconut, spice boards, a grape board needs to be formed to look into and involve itself in the prospects of culture, internal use, export etc.

Technical papers were presented at the National level seminar on export of Indian table grapes on 16-17th Dec., 1994.

The seminar was organised by GRAPE EXPORTS ASSOCIATION OF INDIA, Nashik.

The papers presented were :

Gaikwad Jaywantrao⁸ in a paper on, 'Indian Grape Export : A report on its problems', notes that the exporters have faced many problems after entering into export since 1992. This gave the necessity to establish the exports association, and accordingly, Grape Exporters Association of India was established on 30.7.1993.

The paper is a reflection of thorough study of the problems of grape exports by heart & mind. The paper touches on problems like import duty, sales & excise duty, subsidies, GATT rules, Rupee depreciation, problems at port, electricity, administrative hurdles & foreign market problems.

Dr. Choudhari K.G⁹. while presenting a paper on

PROMOTING GRAPES EXPORTS : SOME SUGGESTIONS, claims that,

- a. There is a tremendous scope for promoting the export of grapes.
- b. Our growers, because of immense efforts and technical support

of Maharashtra Rajya Grape Growers Association, are aware of the pre-harvest and post-harvest technologies.

- c. Many grower exporters, co operatives and industrial houses are playing a key role to explore the situation.
- d. Indian grapes are becoming very popular in Europe.

Agarwal Nitin¹⁰ in 'Export Grapes and become wealthy' highlights the post harvest technologies for grape exporters. The information is useful for lay readers.

Takwale Ram¹¹, Vice Chancellor, YCMU, Nashik notes that

- The infrastructure facilities at the airport should be strengthened. Pre cooling and cold storage facilities should be provided to the exporters at air ports and seaports.
- a. It is observed that our data base is very weak. Data base particularly in respect of area and production, international demand and prices of grapes should be strengthened through international market surveys and other means and this information should be made readily available to the grape exporters.

- b. **Export promotional campaign should be undertaken to popularize our grapes in the international market. On the lines of Tea Export Promotion Council, Spice Export Promotion Council, Cashew nut Export Promotion council, Grape Export Promotion Council must be set up to boost grape export in the near future.**

Shipping expert (Anonymous)¹² in his presentation of the paper, 'THE S.C.I.'S PARTICIPATION IN EXPORT OF GRAPES' notes that the entry of the Shipping Corporation of India in this trade should be a matter of great relief to the grape exporters. The SCI had taken its rightful place in freighting this valuable cargo to the UK/Continent during the grape season, 1994. The SCI has commenced a contained service to the UK/Continent ports in a big way. With three fully Cellular container vessels, namely M.V. LalBahadur Shastri, M.V. Indira Gandhi and M.V. Rajiv Gandhi, deployed in the DK/North continent trade starting from Jawaharlal Nehru Port, a frequency of 16 days could be achieved covering Felixstowe, Rotterdam and Hamburug as direct ports of call.

The paper also discusses the broad features of the vessels, the technicalities of the refer box, Cargo worthiness, temperature control and port facilities.

In this way the paper tells us the opportunities available for sea carriage of grapes by SCI vessels to the export market safely.

Kumar Pramod¹³, Br. Manager NAFED, Nashik on Indian grape exports notes that the grape export of India is possible for Europe in the months of February, March, April & May. During this period the competition of Indian grapes is with Chilean grapes. Indian grapes do not get the expected rates in the month of February and March in the European Market. Good rates are possible in the month of April, May and June when the storage of Chile and South African grapes is reduced in the European market. The paper also gives information about the supermarket of London.

M/s Trivedi & Sait¹⁴ of ACE Clearing & Forwarding Bombay, in the paper Do's and Don'ts OF GRAPE EXPORTS highlighted the following points :

a. Shortages of refer containers during peak season :

It's extremely important for exporter to plan in advance their requirements of refer containers which can be conveyed to various

shipping companies well in advance who in turn can plan the repositioning of refer containers and make them available. Lack of advance and in- accurate planning may thus result in bunching of units for a particular vessel or vessels, which may not be able to accommodate units for want of, refer plug points on board to the vessel. Further there are many shipping companies who are offering refer containers for Europe.

b. Stuffing of Containers

The fast and rapid stuffing of container ensures unbroken cool chain for the grapes. We have observed at a number of cold storages that the stuffing takes as long as 4/5 hours and in such cases one can imagine the condition of the cargo in relation to the temperature of the first lot stuffed in to the container. If palletisation is not carried out by exporters for various reasons, they must ensure that the container is stuffed with the help of specialised labour with minimum possible time, which ideally should range between 1 to 1½ hours.

c. Handling of Post Shipment Documents

Once the shipment is over, the exporter must ensure that the necessary documents such as invoice, bill of landing, certificate of

origin, phytosanitary certificate, legalisation from respective consulates if necessary, should reach the importer well in time so that there isn't any delay in the clearance of the container at its destined port. In case of such delay additional expenses are incurred by way of detention, monitoring and share electrical charges etc. that also prolongs the delivery of cargo from the container. This can be harmful to perishable commodities such as grapes. The handling of post shipment documents needs to be carried out carefully bearing in mind the importance of each and every paper. The banks whether situated in towns or in distant cities should also ensure that the original set of documents are dispatched on time on a priority basis to the importer's bank abroad.

Bhandari Suresh¹⁵, in the paper, Role of Indigenous Machinery For 'Cooling Chain', reminds us that India is the third largest technological force in the world. It is perhaps potentially the best in this world. If sufficient resources are placed at the disposal of our scientists, engineers and technocrats, we can perform wonders in the field of science and technology.

If indigenously produced plant and machinery is handled by trained and qualified staff, it is possible for the growers to run the show by themselves. Indigenous machinery is cost effective, its operative cost can be minimized, its spares are readily available. Therefore, servicing and repairing will not pose any serious problems. Maintenance cost of plant and machinery built locally is always negligible.

Patil Sahebrao Jijaram¹⁶ in article on, 'Shriram grapes growers societies grape export in Drakshavritta Sept., 1994, discusses common export problems and precautions to be taken for grape exports. The author has given some historical evidence of pre cooling units. Realising the importance of pre-cooling the grapes before export, Mahagrapes ordered a mobile pre-cooling unit from a company in Mumbai. But due to hard luck the first pre-cooling unit was available only in May 1991. The grape season was getting over. But still vineyards were preserved for exports. After getting the pre-cooling unit on May 6th 1991, 920 ft. refrigerated container was loaded with grapes on May 8th & May 9th 1991. The first container started from Nashik on May 8th 1991 and it was loaded

onto the ship for London on May 13th 1991. This container reached London on June 21st, 1991.

The importer suggested many improvements for the quality of grapes. The suggestions made every one think about pre-cooling units. Finally the pre-cooling unit was imported from a company in California.

Bhujbal, B' in an article on Grape exports : Some short comings & suggestions in *Drakshavrita*, Sept. 1994, writes down some common short comings. However he gives some different suggestions.

The author suggests that 5 to 50 grape growers should come together forming 50 acres grape vineyards. If the unit of more than 50 acres is formed, than separate unit should be formed. This unit should be in one village having the same climate and uniform land.

The unit should have one grape variety vineyard. This will help in production; quality and export management can be effectively implemented. The target for one acre land should be twelve tons of grapes. Out of this, 8 tons should be of export quality. One unit should export at least 25 containers.

This unit will help in bad times, getting finance, technology, raising capital etc. These suggestions were made from his experiences, of some grape seasons.

Bhosale Gulab Nivruti¹⁸ of Khilari Village of Latur district in an article on, 'Grape exports after earthquake shock' in Drakshavrita Sept., 1994, tells the achievements of Khilari grape growers despite the severe shock of earthquake. There was a severe earthquake in Latur and Osmanabad district on 30 Sept., 1993 at dawn (3.55 am). In this earthquake 50-60 villages were totally destroyed.

Immediately after the earthquake there was the period of October pruning. On October 16th 1993 the Officials of Maharashtra State Grape Growers Associations, visited Khilari and took stock of the situation. It was decided to do pruning on October 20th 1993. The help of the students of Parbhani Krishi Vidyapeeth was taken, due to shortage of labour. The work was done scientifically with entire government support. The government also supported the grape farmer further, when needed. Prominently, a Seminar on grape export was also organized in Khilari in that year. This resulted in the production of good export

quality grapes during the crises year of the earthquake. The grapes of this earthquake affected regions, reached London in 1994.

This article is a lesson to the entire grape growers fraternity to wake & rise up no matter how severe the crises¹⁸.

Nerkar, D.P.¹⁹ in an article, 'On what to do for better grape export profits ?' in *Drakshavrita*, Sept., 1994, writes on the common care to be taken by all pack houses.

The author notes that Chilian government gives lots of subsidies to their grape exporters. Hence, Chilian grape exporters have settled properly in the European market.

Similarly, India should also have minimum rates on shipping and air freight. Also 18% import duty in Europe should be reduced.

The author also suggested that the exporter should have a separate government recognized body. This organization will reduce the unhealthy competition among the exporters and at least there will be stability of price to growers. Thus, the price will be controlled legally and will be stable for the exporter also. The author also admits the grower exporter will not agree to this idea.

The author also notes that it is not good to send all grapes to one market only. In order to avoid this, all exporters should come

together to plan the demand and supply situation. This will benefit the exporter and producers.

Megade, Sahebrao²⁰ in an article, 'Packing for export quality grapes' in *Drakshavritta*, Sept., 1996, gives a general information in detail, about plucking grapes from vineyards, specialty of export quality bunches, packing room, a blue print of grape packing box, pre-cooling units, cold storage unit and container loading. This information is very useful for those who have no knowledge of grape exports.

Bankar B.B.²¹, quoted **Mr. R. Shankar Pillay** entitling these quotations as 'Wisdom and know-how for grape in *Drakshavrita Souvenir*, 1997.

Mr. R. Shankar Pillay has written the book entitled 'Grape growing in a Nutshell'. Mr. Pillay initiated the Grape Industry at Hyderabad and many consider him to be the 'Father of Viticulture' in this region of India. In the book Mr. Pillay has put down some of his wisdom and know-how, which he has learned over many years of a long carrier, in poetic form. The book though written in 1968, the Principles of Viticulture in India quoted by him also hold

true for grape grower of today. The wisdom and know-how of Mr. Pillay cannot be reproduced in this review of literature. However some of the lines of the author selected by Mr. Bankar is reproduced in Appendix-II.

Waval K.N. ²² in an article on, 'Rules and care to be taken by exporter for maintaining export quality grapes', in *Drakshavritta Souvenir*, October 1997, writes in detail for common exporters on selection of export quality grapes., plucking, transport, care to be taken in packing room, grading, packing, pre-cooling and cold storage, Inspection & container loading. The article is a good piece of information for exporters.

Badhan B.T²³. in *Grape export 1997 – An observation report*, prepared for Agricultural and Processed Food Product Export Development Authority (APEDA, New Delhi, 1997) observes that merchant exporters who had the capacity for investing funds, constructed pack houses along with pre-cooling and cold storage facilities. Some exporters have hired existing facilities of growers and started export of grapes. There was no control over these exporters regarding maintenance of quality and it resulted into total

chaos in the export of grapes to European countries in the year 1996. The author also notes that the merchant exporters have to do this business in a very short period of 2 to 3 months. They do not have any assured source of supply of grapes. Naturally they have procured grapes from unknown growers, paid more money and compromised in quality of grapes.

In the beginning of the season the merchant exporters invite their counter parts (importers) from abroad and show them all the vineyards situated nearby & their facilities. On the basis of this wrong information contracts are made. But since, there is no firm commitment between exporter and the grower, grower normally turns down his commitment and he takes the decision of giving his produce to another exporter and there-by unhealthy competition starts. The author also knows that there are hardly any compliant from exporter about getting Phytosanitary Certificate, but there are several serious complaints regarding the central excise department.

Writing about APEDA, the author says that when-ever APEDA or any other organisation thinks about future developments in exports and facilities of exports, the fact of under utilization of

existing facilities should be considered. They should find ways for effective utilization of these facilities for at least 250 days in a year.

The author also notes that in the year in which this report was prepared, out of 35 cooperatives only 9 cooperative societies have exported grapes. Naturally the members of other societies have given grapes to merchant-exporters or other societies.

The Badhan report reveals that there has been tremendous achievement in

- a] Production of good quality grapes
- b] Availability of good quality packing material
- c] Availability of good quality and quantity of refrigerated containers.
- d] Availability of good quality of pre-cooling and cold storage system.

The report also observes that our exporters are still lacking in

- a] Proper system of procurement of grapes
- b] Proper grading
- c] Appropriate system of transport of grape from field to Pack house.

D] General hygiene

E] Proper and adequate pre-cooling facilities

To overcome these lacunae, a specific action programme is suggested. The area covered under this action programme are

- 1] Co-ordination meet**
- 2] Training to growers and exporters**
- 3] Comparative study of grape exporting countries**
- 4] Mobile grading and packing houses**
- 5] Quality control mechanism**
- 6] Market promotion by APEDA and**
- 7] Co-ordination of Officers and Plant Quarantine and Central Excise.**

This report is based on observations noted on the visits to pack houses and from farmers, pack house managers and exporters at the time of actual exports.

Premkumar R.M²⁴. IAS, Principal Secretary (Co-operative and marketing) in a 'forward' to the Badhan report notes that in the year 1996, exporters had to incur heavy losses in this trade mainly due to :

- a] Lack of quality control**
- b] Mismatch of demand and supply and**

c] Unhealthy competition between grower exporters and merchant exporters.

To avoid repetition of the experience of 1996, the Chairman, APEDA requested the government of Maharashtra to make the service of Badhan available in view of his long association in this field.

Meher Anil G²⁵. of Vighnagar Grapes Growers Co-operative Society Ltd in writing, the 'Financial constraints in grape export trade' to member Parliamentary Committee, Agro exports, Ministry of Commerce, Govt. of India (3rd Jan, 1997) says that, exporting grapes to the Gulf region is not export in its true sense. For the survival in International grape trade, the target market should be the European market to be more precise, a chain of super markets in U.K.

The constraints were prominently in export packing credit, need for gigantic infrastructure and expected role of APEDA.

Patil S.B²⁶. made notes on the meeting called by the Chairman, 'APEDA' Delhi on Jan 12th, 1997 in the office of Drakshabhavan Market Yard, Pune. (during a visit of the Parliamentary Standing

Committee on Commerce to discuss reports of Agricultural Products).

In the meeting, mainly, the problems related to export of grapes were discussed, in order to find solutions.

Issues like the heavy rush of containers at Dockyard in the month of April, Shipping problems, export quality standards, Role of APEDA in market information, pesticide residue analysis and Pre shipment credit to exporter were discussed.

The commissioner of Agriculture²⁷, Pune made some notes on the problems of grape exports in 1997. The note says that :

- i. Import duty is paid on grape guard paper, dipping oil and pesticides. Import duty paid by Indian exporters is 18% in European market, but Chile pays only 3% import duty in the European market.**
- ii. Price is reduced as all exporters export in only one country and one market.**
- iii. Subsidy should be given on electricity for cold storage, on the lines of poultry farm.**

Mahagrapes²⁸ in the note on constraint in export field highlighted issues like RBI regulations for perishable produce export, 30%.

Margin money for EPC, Interest benefits, import duty on pre-cooling capital limits for EPC, exemption of excise rates & Sales Tax on packing for export, quality parameters and government assistance for grape exports.

Maharashtra State Agricultural marketing Board ²⁹, Pune in the report to the Parliamentary Sub-committee on 27/8/1997 says that MSAMB has got itself involved in agriculture exports from 1991 onwards. The MSAMB has signed an agreement with California for providing pre-cooling technology to be established in Maharashtra by various co-op organisation. Because of this, 32 pre-cooling units have been established. MSAMB has not restricted its activity for establishment of such a cold chain, but in case of export, the sample marketing or testing marketing was done at its own cost in the middle east countries and European countries. The market survey was also carried out by the MSAMB in various countries for ascertaining the potential of fresh fruits. Mahagrape has been established by MSAMB for carrying out the commercial export, for this also MSAMB has initially incurred heavy expenditure. As a result of this, the export of grapes could be established.

Pawar B.D. and Tambe S.D³⁰ of Maharashtra State Agricultural Marketing Board, Pune, narrates the history of cold storage in the booklet the story of grape dollars (technology aspect).

The booklet narrates that pre-cooling technology was not even proven at trial stages. Only trials were being conducted at different levels by various organizations. Therefore in 1990, MSAMB decided to go ahead for adopting the art of technology in this area.

The farmers were brought together and oriented into the export scenario of Grapes and other products with the help of the experts in the international trade. A farmer's delegation under the banner of MSAMB was organized in the year 1990. The report of the farmer's delegation was so encouraging that our earlier advice of value addition for export got confirmed up and became action oriented.

The booklet highlights the following issues :

Facilities-Community-Individual :

Deliberations and brain storming sessions were conducted to resolve the conflict between collective/community system *viz-a-viz* the individual system for value addition. The big farmers as well as

farmer merchants were pressurizing for individual value addition systems while the MSAMB and DOM were convinced about the requirements of community system in the interest of not only small and marginal farmers but providing the quality material for internal as well as export trade.

The individual farmer's unit, so far as handling technology of perishable was evaluated, found, that in the Indian situation, especially the road conditions, the transport facilities and power supply, the individual units will not be technically feasible.

Individual units for handling facilities would require handling and re-handling, transport and re-transport and also pose a probable threat of brake in the cool chain. These weaknesses and threats would carry substantial influence in respect to the temperature. Therefore MSAMB decided on community systems/ units.

Big farmer, merchant farmers, traders were totally unhappy with the decision of not promoting the individual handling system and therefore, backed out from the formation of Farmers' Co-operative or the organisation for setting up collective/ community system.

Community System :

Ultimately, with the support of Draksha Bagayatdar Sangh, the DOM organized 32 Grape and Horticulture Growers' Co-operatives which have gone onto setting up the handling system, including the temperature management aspect.

Technology Evaluation :

Draksha Bagayatdar Sangh before 1988 was actively involved, with the help of National Horticulture Board and Commissioner, Horticulture, Govt. of India, in conducting the trials for pre-cooling of grapes. MSAMB with the help of the local scientist namely Sadubhau Patil could develop a protocol for a pre-cooling van i.e. a mobile pre-cooler. A decision was taken to put this protocol into the practice. For confirming the protocol and putting it into practice hundreds of brain storming sessions were conducted. Finally, 12 vans on a pilot basis were decided on to put into operation for ensuring proper temperature management for extending the shelf life of grape. This was in the year 1990.

1991 was a year when we wanted to manufacture these mobile pre-coolers but there were no funds. In the same year, National Horticulture Board had developed a concept of walk-in-

cooler. They made provision for 22 units but there were no takers. MSAMB submitted its proposals for 12 mobile pre-coolers which was accepted by National Horticulture Board and funded.

Manufacturing of pre-coolers with the indigenous technology was done under the supervision and guidance of Sadubhau Patil. This itself is a golden event in the history of cool chain in this country.

Refer Trucks

After commissioning this mobile pre-coolers, transportation under 95 humidity with 2⁰C to 4⁰C temperature was found inevitable for enabling us to stuff the container at the port or production center. Therefore, 4 mobile trucks were ordered and were commissioned in 1992.

Walk-in-coolers

Walk-in-coolers of small capacity of 6 quintals or so, as advised by National Horticulture Board in the year 1991, were sought to be tried in Maharashtra but the experience of farmers' organisation in Sangola proved that walk-in-coolers system especially in the production center is technically not feasible. However, our recent experience of putting the perishables into the

cold chain indicates that Walk-in-cooler would be indispensable for the retailing/consumption point or consumption shop.

Art of Technology :

Encouraged by the results of mobile pre-coolers the Organizations i.e. the Growers' Organisations as well as MSAMB scouted for the art of technology in the area of handling of perishable with a component of temperature management system. Visits were paid to many of the research institutions like CFTRI, ICAR and Agricultural Universities and Research Centres. Discussions were held with personalities like Dr. Sushant Roy and others. However, none of the sources could provide the proven technology for handling system including the temperature management for perishable. Ultimately, the Board crossed the national borders and approached Davis University, California which in turn suggested 4/5 companies from United States who are in the business of providing the technology and equipment for handling perishables. As a result of a number of discussions in this respect Pressure Cool co. from California State, U.S.A. was selected. The Company had a tie-up with the local company called California Humifresh. A Technology Transfer Contract was signed

in 1991-92 and the technology for handling including the temperature management came to be commercialised through setting up of the first set of 15 units.

The designing of units in the context of quality had required a lot of brain storming sessions and deliberations with different authorities.

Results :

It is heartening to note that all the facilities constructed and commissioned as per the technology in the design have been approved by not only the wholesale exporters from Europe but the prestigious super markets like Texco, Safeway, Marks & Spencer etc. Thus, the booklet tells the role played by MSAMB during the initial days of grape exports.

Deshpande V.V³¹ in an article on Agro Exports : World Picture and the place of India & opportunities available (in the magazine Baliraja : Agro Exports seminar 1997 Special supplement, states that grape exporters have to pay import duty of 18 per cent in the European market. To reduce it, Mr. P.V.Raja, Secretary, Commerce Department GOI, is working with the central government and Ambassadors and Officers in foreign countries.

Meher Anil G³². in an article 'The movement of grape exports : problems and its direction', in the magazine **Baliraja : Agro Exports seminar 1997**, has given thoughtful information based on personal visits to Europe Markets. The author states that in England the super markets require an assurance of good quality grapes through the importing agent. Also, they want advance information of the quantity that will be supplied along with the possible time period.

After the definite assurance of the exporters, the company officials along with technical officers of the super market visited India. These officials inspected the vineyard, pack house, toilets, health of the workers, residues of grapes, fertilizers used, water inspection report, etc. After satisfactory information on all these aspects, they were ready to import the grapes. A letter was given to the importing agent about buying the grapes.

The author also noted that the packing material has to be of good quality. In case the packing material is of sub-standard quality, then repacking is done in the foreign market. The repacking expenditure is very high.

Commenting on the heavy losses of 1996 in European markets, the author says that Chilian exporters had stored lots of grapes in Europe and Chilian cold storages. There was secrecy maintained and even the European importers were not knowing this. These Chilian grapes were sold during the Indian grape season. This caused heavy losses for Indian exporters. This resulted into a 50 per cent drop in European exports in the following year.

The author informs us that in Israel, the Agrisco company on a large scale, looks after the exports of the country. Their representatives are surveying and studying the European markets continuously. They study the taste of the consumers of the European market and accordingly supply seeds & technology to their farmers.

Their government supports the farmer for three years. If the farmers face loss in exports in these three years, then this loss is paid by the Israel government. After 3 years, if the farmer takes the same crop, and if the farmers face loss in exports, then the government is not responsible for them. This type of market defence policy can be implemented on pilot basis in our country.

The article also suggests that new markets are to be traced out. This information can be traced from the ambassadors of our countries. There is lot of scope in export field. If this scope is traced, a new opportunity will be available to the village people.

Chadha K. L. and Shikhamany S. D³³ has written a text book on 'The Grape Improvement, Production and Post Harvest Management', Malhotra Publishing House, New Delhi, 1999.

It is a complete book on grapes. All aspects relating to Production, Grape Improvement and Post Harvest Management are dealt in detail. A small section is devoted to the export of grapes.

The author says it is the improvement in quality of grapes produced in India, which has been responsible for grape export gaining ground in the international market.

Quality stipulation of grapes laid down by the EEC markets are given by the author as per the table below :

Quality standards of grape for export

Characteristic	Standard
Variety	<ul style="list-style-type: none"> i] Seedless ii] Preferably green or milky green but not yellow for EEC market. iii] Coloured grapes for Sri Lanka, Bangladesh and UAE.
Bunch	<ul style="list-style-type: none"> i] Neither straggly nor compact but loose bunches. ii] All berries should be of uniform colour and size in a bunch and a package. iii] Should weigh 400-500 g. but not less than 300 g and more than 750 g. iv] Should not have more than 5 per cent berries fallen after a gentle shake. v] Less than 2 per cent sun burnt or sulphur bleached berries. vi] Less than 7 per cent malformed or under sized berries. vii] Less than 2 per cent bruised or crushed berries.
Berries	<ul style="list-style-type: none"> i] Diameter should be more than 18 mm but none less than 16 mm. ii] Green or milky green, but neither yellow nor brownish-yellow. iii] Free from sulphur and sun burn. iv] No sign of withering of bunch stalks and shriveling of berries at the sale point v] Pedicel should be fresh and green vi] Should have atleast 18° B.

Grapes fulfilling these quality standards are available in each vineyard. However, the proportion of such grapes varies from 10 to 80 per cent. There is an apprehension among the growers that their yield has to be sacrificed for producing export quality grapes. No doubt, the proportion of export quality grapes reduces as the yield

level per acre increases, but the practice that increases the proportion of export quality grapes at a reasonably higher yield level of 12-15 tonnes/ha should be followed.

Purposely the information on Post Harvest Management of grape is reproduced from the text as it is one of the text, which gives the required information. Most of the sources on Post Harvest Management are from magazines.

Harvesting and handling :

The time of harvest and the handling of the bunches at harvest go a long way in increasing the shelf life and retaining the freshness of berries during transit and storage. Remove the misshapen, abnormal and damaged berries from bunches ready for harvest on the previous day of harvesting. Harvest the bunches only during 6.00-10.00 am. Delayed harvest in the day builds up field heat and poses problems in pre-cooling, which eventually lowers the storage life of grapes. Pack the bunches as per the specification of the importing agency in the cardboard cartons in a cool packing shed without losing time. Do not seal the cartons. Take care not to erase the thin coating of natural bloom on the berry surface by using hand gloves while harvesting and packing.

Subject the grapes to pre-cooling to obtain 3-4°C within 4-6 hour after harvest. Put grapes guard inside the filled carton, seal it and put it in the cold storage room where the berry temperature should be maintained at $\pm 0.5^{\circ}\text{C}$ and humidity between 85 and 90 per cent. Palletise the boxes after they are cooled adequately. Use refrigerated containers for shipment to overseas market.

Pre-cooling :

Pre-cooling is done to reduce the field heat and moisture loss and subsequently increase the storability of grapes. Hence, the field heat is invariably high. Prompt removal of field heat of grapes after harvest is the best means of retaining their freshness and quality. Pre-cooling is reported to check stem desiccation, browning, berry softening and shatter (Nelson, 1955). A reduction of 8.4°C in the temperature of grapes can reduce its rate of respiration by 50 per cent and increase the storage life by 100 per cent. Grapes need to be pre-cooled to a temperature below 4.4°C within 6 hours after harvesting. The delay in bringing it to this temperature reduces the keeping quality of grapes. Pre-cooling can be performed in cold rooms, forced air coolers, refrigerator cars and tunnels. Cooling of grapes is generally carried out in special rooms

attached to the cold storage units in India. Mobile pre-cooling units (refrigerator cars) are also in operation to cool the grapes during their transport to the cold storage units situated far away from the production sites.

Storage :

Grapes are highly perishable and their shelf-life is hardly at room temperature. Extension of shelf-life of grapes by suitable storage methods is of great importance to regulate the market supply and to ship to over-seas markets. Without adequate storage methods to keep table grapes fresh for about six weeks, the grapes industry in India in general and export of fresh grapes from India to overseas markets in particular has no future.

Spoilage of grapes during storage is due to desiccation, decay and biochemical deterioration.

Increasing storage life (In packing material)

The extensively used in packing material for packing grapes for overseas market in the ventilated card board boxed in India are the dual releasing SO₂ pads popularly known as grapes guard. It consists of two parts, one part is quick release half which is designed to quick a flush of SO₂ at a relatively higher concentration

for short period. This kills the fungi on the surface of fruit and sterilizes the fruit. The second part is the slow release half which releases a low concentration of SO_2 , adequate enough to check the development of fungi steadily over a long period of 8-10 weeks.

The quick release portion is a craft paper coated with the thin layer of mixture of sodium bisulphate and plastic polymer. The slow release portion is based in two-ply plastic coated papers pasted together leaving 12-16 unpasted rectangular pockets in rows of 3 or 4 spread at equidistance on the entire surface. These empty pockets are filled with sodium bisulphate powder. These dual release pads are kept on the upper tissue paper cover of the filled cartoons or the filled plastic pouches with their coated surfaces facing downwards. They are covered with paper shreds or plastic sheet-lining and the cartoons are closed.

The uniformity in the rate of release SO_2 is governed by the temperature and humidity maintained in the storage rooms or refrigerator containers, the higher the temperature and humidity, more the SO_2 is released. When temperature increases, the berries transpire more and humidity is built up. As a result, more SO_2 is released. Hence, temperature fluctuation in the storage rooms or

refrigerated trucks leads to flushes of higher SO_2 concentration followed by lower concentrations. Higher concentrations of SO_2 lead to bleaching of coloured grapes and browning of white grapes. On the other hand, inadequate concentrations of SO_2 give way to the growth of decay causing fungi. Therefore maintenance of 30-32°F temperature and 90-95 per cent relative humidity is very essential for the SO_2 releasing pads to be safe and effective.

Ideal storage conditions for grapes are low temperature (30-32°F) and high humidity (92-96 per cent). If they can be effectively controlled, a temperature of 30°F and humidity of 95 per cent are the best. Well matured berries with high sugar content can tolerate the temperatures as low as 25°F without chilling injury (Carrick, 1930; Wright, 1942). But the pedicels and stems of clusters which have very low sugars are injured at such low temperatures (Pentzer *et al.*, 1945). Therefore, a range of 30-32°F is recommended for cold storage of grapes to provide a balance of safety between the fruits and stems and to allow for normal temperature variation. Strict control of temperature around 30-32°F is very essential. If the temperature goes below, it can inflict freezing injury to the

berries causing enormous loss. If it goes high, it increases the moisture loss from berries leading to shrinkage of berries, shriveling, browning and drying of stems and detachment of berries.

Uniform cooling of all berries in the cold room is yet another practical issue in cold storage of grapes. It can be achieved by proper arrangements of filled boxes of pallets in the cold room. While individual boxes are stacked in a cold room for releasing during off season in the domestic markets, they are palletized for export and pallets are stacked in the cold rooms. Pallets are the larger packages made by laying together the filled grape boxes, using good quality wooden pieces, in order to facilitate mechanical handling and reduce damage to the cartons. Approximately 120-144 boxes are packed in each pallet to suit the dimensions of the refrigerated containers. Boxes are stacked in lots of 100 to 150. The lots of boxes of the pallets are arranged in rows. The gap between rows boxes should be uniform. The sides of the boxes should be in the direction of air movement for effective and uniform cooling of the berries (Ryall and Harvey, 1959). It is

advisable to maintain a narrow gap of about 3-5 mm on the top of each box to allow greater air circulation. This can be achieved by providing a small projection at the fold of closing flaps of the carton.

The relative humidity in storage rooms should be high and close to saturation. As the relative humidity of air in a storage room increases, the vapour pressure increases and the water loss from grapes decreases. Maintenance of 100 per cent humidity in the rooms leads to condensation of the walls and the floor of the cold room causing inconvenience for operations on the sides of the filled grape boxes increasing moisture level inside the box. This will further lead to the release of SO_2 in higher concentrations from the SO_2 releasing pads. Therefore, a humidity level of 95 per cent or a range of 92-96 per cent is recommended. Humidity increases in the cold rooms by either loss of moisture from grapes or by evaporation of water used to cool the air. Humidity build up should be only by evaporation of water used for cooling the air or by fog spray (Operating the humidifiers) as and when required. Arrangements for continuous display of temperature and humidity

levels in the cold rooms should be made. A vigilant supervision to monitor and regulate these components by their respective devices, namely, refrigeration units and humidifiers round the clock is necessary.

Air circulation in the cold room is also important. It should be adequate enough to limit the rise in temperature of humid air caused by the release from fruit, floor, walls and ceiling of the room and leakage through swing doors. For every 1°F rise in temperature in the cold storage, there will be a reduction of a percent in humidity (Mitchell *et al.* 1972). At the same time, it should not be fast enough to drive away the humid air faster leading to reduction in relative humidity and increase in moisture loss from the fruit. In a well-insulated and air-tight room, a linear rate of movement of air by 10-25 feet per minute is adequate. Air speed more than 25 feet per minute adds to the problem of berry shrinkage. Doubling the air movement was associated with increased moisture loss by about one-third which was equivalent to a drop of about 5 per cent in relative humidity (Allen and Pentzer, 1936). Air movement is controlled by fans and stacking pattern.

In this way some justice is given by the authors to the literature on grape export in text form.

Balasaheb Jagtap³⁴ in an article on 'vision of grape export.....' in **Drakshadeep Souvenir, 1999-2000**, a Mahagrape publication narrates his experience of grape export to London. This was the first time Indian grapes reached the London Market.

Nijal Kick³⁵ of 'Three ways International', England, in an article 'Alert suggestions for grape exports', in **Drakshadeep Souvenir 1999-2000 Mahagrape publication**, highlights the following 3 challenges for Indian exporters in UK Market :

- 1] Shelf life (the keeping qualities of the grapes once they are on the shelf of the super market).
- 2] Residue (amount to be used) and also spots on grapes.
- 3] Continuous export quality supply.

The author suggests that the Print Media is very active in Europe. If the above problems are reflected in the Print Media, there might be a loss to thousands of Indian grape exporters.

Pinto Ronald & Pandhre Rohit³⁶ in an article 'Future of Indian grapes in International market: Place of Maharashtra in International grape export', in **Drakshadeep Souvenir, 1999-2000 Mahagrapes Publication**, informs the grape exporters that there was a practice of sending the best quality grapes to England and the next best to the

European market. These grapes of next best quality were unsold in the European market. England being a big market, the Indian grapes unsold in European market were transferred from Europe to England. Naturally, they were also unsold in England market. This resulted in a bad reputation for Indian grapes in the UK market.

The authors through this piece of information try to inform the grape exporters not to make a distinction between the UK and the European market.

Kale, Jaydeep³⁷ in the article 'Management for growers export quality grapes', Drakshavritta Journal, Jan. 2000, writes about the plucking of grapes, specialty of grape export quality, packing room, method of packing, pre-cooling unit, cold storage and container.

In the introduction, while giving general information on grapes, he notes that Holland and Germany along with South Eastern countries like Hong Kong, Singapore, Korea, Malaysia are giving a good response to Indian grapes.

The Review of literature reveals that there is Scarcity of literature on Grape export. However, the available literature is unique in its own way. Each literature piece gives some unique information. This uniqueness is a good source of information.

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CHAPTER III

RESEARCH METHODOLOGY OF THE STUDY AND PROFILE OF GRAPE GROWING AREAS IN MAHARASHTRA

3.1 Introduction – Statement of the problem.

Grape fruit is part of perishable produce marketing around the globe. Apart from perishable nature of the commodity, there are problems regarding quality, packing material, importing middle-agent, import duty, constraints with government organisation like APEDA, ECGC, Plant Quarantine Department, Excise and Customs Department, infrastructure problems like cold storage & pre-cooling units, roads, electricity, port and problem related with RBI.

3.2 Objectives of the study

1. To study the events which were responsible for grape exports.
2. To study the status of local market of grapes.
3. To study the procedure of grape export.
4. To study the direction of grape export.
5. To study the problems of the grape grower-exporters of Maharashtra.
6. To study the prospects of grape exports.
7. To study the government policy regarding grape exports.

3.3 Hypothesis

1. Our grape growers have the ability to produce export quality grapes.
2. There is potential for grape exports particularly from Maharashtra.

3.4 Methodology

The review of literature reveals that no spadework has been done in the field of grape exports. Consequently the difficulties, which beset the pioneer in that field, are immense. Each and every source of previous information was new, as an attempt of the grape export by a farmer began in December 1989. The antecedents of some points were not clear. It was a challenge to find the errors.

There was apprehension that this challenge could not get the answers. A mental set up was made to smart this irritating affliction. A pioneer student is jubilant over the findings of the material, relevant to subject. But it is after a long wearisome search that he is able to shift the grain from the chaff. Again sources some times prove false guides, so that a perusal of them only ends in a considerable waste of time and energy.

Precisely these have been the difficulties besetting the present task. There were no books to prepare the student for his

work and hardly any savant to lighten his labour or set him on the proper track. Notwithstanding such odds, an attempt is made to make this study thorough. This has rendered the undertaking quite a laborious one while doing the primary field survey. The researcher does not wish to speak of the labour that is involved.

In endeavoring to treat the subject matter, the researcher has carefully avoided repeating what has already been said by others in the review of literature. To have reproduced them would have been a work of supererogation; besides it would have only obscured the general trend of the problem.

3.4.1 Primary data (Field Survey) :

After taking the review of the literature on the problems of grape exports, a questionnaire was formulated. These questions were discussed with 5 expert grape exporters.

Moreover some additional problems were netted from these experts. Each expert was personally contacted with prior appointments and the problems were discussed in an informal way. After getting satisfactory inputs from these expert exporters, more than 45 exporters were contacted personally, from Nashik, Sangli, Solapur, Pune and Latur. The data was collected by an informal

method of interview in the vineyards. The exporters were telephonically contacted for appointments. The problems were informally discussed with each exporter for one and half to two hours. All this qualitative information was continuously noted in a note book.

The exporters were classified as grower-exporters, trader-exporters and Co-operative exporters. Along with these exporters, persons related with grape exports were also interviewed.

1. **Grower-Exporters** : These grape cultivators were personally involved in exporting grapes directly to the foreign market from their own farm. These grower exporters have cold storages along with pre-cooling unit on their own farms. Their place of residence is either in farm or near the farm. Out of 55 grower exporters, 49 were interviewed. In this way 90 per cent of grower exporters were interviewed, thus getting excellent and unique information from them. All exporters among grower exporters were from Nashik except two were from Latur district.
2. **Co-operative Exporters** : There were 25 farmers Co-operative societies, existing during the survey. Out of

that, 15 cooperatives are working under the banner of Mahagrapes. Four cooperatives were functional only on paper. Mahagrapes was interviewed with sufficient time. Two cooperatives of Narayangaon were also interviewed with satisfaction. One cooperative of Sangli was interviewed.

Some cooperatives were functional only on paper. It was difficult to interview the proper persons of these remaining cooperatives. In this way 85 per cent of the sample group, of the cooperatives of grape export was interviewed.

3. Govt. departments related with grape exports : The following officials of the government department were interviewed.

i) Agricultural and Processed Food Products Export Development

Authority (APEDA) – One official from the Mumbai and Delhi offices each.

ii) Govt. of Maharashtra

a. Agricultural Commissioner (One)

b. Horticultural Commissioner, (One)

c. Co-operative department (One)

- d. Marketing Board (Two)
- e. National Horticultural Board Officials (One)
- f. Phytosanitary Official (One)

iii. Central Government Officials :

- a. Export Credit Guarantee Corporation (ECGC) Official (One)
- b. Director General of Foreign Trade (DGFT) Official (One)
- c. Jawaharlal Nehru Port Trust (JNPT) Official (One)
- d. Commissioner of Central Excise & Customs (Three) – One each from Nashik, Pune & JNPT.
- e. Indian Statistical Service Officer (One).

iv. Others :

- a. Bank Officers (Nine)
- b. Foreign Importing Agents (Two)
- c. Indian Representative of Foreign Importing Agent (Three)
- d. Academicians related with Agricultural & International trade (Six)
- e. Research Scientists of Grape Research Center (Four)
- f. Consultants on Agriculture (Three).
- g. Consultants of International trade (one).

In this way 44 representatives of Government departments and other departments related to grape export were personally interviewed.

3.4.2 Secondary Data (Library Work)

The quantitative information was collected from Govt. of Maharashtra publications, International volumes on foreign trade and other Institutions like APEDA, World Trade Center, Mumbai etc.

All possible literature on the topic was reviewed. Each and every piece of literature was a good source of information on the problem. The rich source of this rare material was very helpful in the analysis of the problem.

3.5 Limitations

1. Trader Exporters have been excluded from this research, as the objective of the research was to study export problems of grape grower exporters.
2. The data entries of grape exports were not available from Jawaharlal Nehru Port Trust.

Data on state wise & district wise export of grapes was not available.

Despite personal visits to JNPT, Customs and Central Excise Office (JNPT, Mumbai, Nashik and Pune), the data of JNPT entries, state wise and district wise data of grape exports was not available.

3.6 Data Analysis

Maximum information on the problem was tapped. After the collection of the required data, analysis of all the data was done. As the sample was limited, separation of data was possible manually. Common information given by all exporters was separated and unique information collected from each exporter was noted separately.

3.7 Profile of Maharashtra¹

Maharashtra has a glorious history. It is a holy land of saints, sages and social reformers. Peasants and workers have toiled for centuries to make Maharashtra the Prime State of India.

The State is spread over an area of 308,000 square kilo metres. It is divided into six administrative divisions and 35 districts. Mumbai, the capital of the State, is also the Financial Capital of India.

It was in Ahmednagar district of Maharashtra that the first cooperative sugar factory in Asia was established. Employment Guarantee Scheme, popularly known as EGS, has been providing employment to the weaker sections of society in times of distress for the past three decades. The genesis of this revolutionary concept can be found in Maharashtra's rich cultural and social heritage. A similar scheme, launched by the Government of India, is based on EGS.

Mangoes, oranges, grapes or pomegranates produced in the State have been adorning shelves in the department stores across the world for years. Moreover, a food and agro-produce processing industry is developing in various corners of the state now.

Maharashtra's performance in diverse fields like arts, sports, culture, literature, social and administrative reforms as well as academics research, defence and agriculture has left its unique mark in India. Its many great personalities reached the pinnacles of

achievements in the respective fields of activity. The social reforms movement in the State began over 150 years ago. It has been the source of inspiration for the country. Maharashtra is known for the bravery of its people who blend it with tolerance. The socially amicable atmosphere in Maharashtra surprises people from other states of India for these reasons.

The state of Maharashtra has 35 districts, covering an area of 308,000 sq.kms. The state is sub divided into 109 sub divisions with 353 talukas. The states administrative mechanism consists of 19 Municipal Corporations, 224 Municipal Corporation Councils, 33 Zilla Parishads, 349 Panchayat Samitis and 27832 Gram Panchayats (including Nagar Panchayats).

Maharashtra well connected by roads spread across 2,16, 968 kms. Of these, 3710 kms are national highways while 32586 kms are state highways. Main district roads major 45,543 kms and other roads 43511 kms, while roads to rural areas span 91,618 kms. The net work of railways in Maharashtra is 5459 kms of which 4153 kms is broad guage, 300 kms is meter guage while 806 kms is narrow guage. Transport by water ways is managed by two main ports and 48 small ports. Other forms of communication include

12788 post offices (11394-rural and 1394 urban); 54.58 lakh telephone connections and 3,50,000 internet connections.

The total population of Maharashtra is 9,67,52,247 of which 5,03,34,270 is the male population and 4,64,17,977 is female population. The sex ratio is 1000:922. The total number of children born in the age group of (0-6 years) is 1,31,87,087 of which 68,78,579 are boys and the girls number 63,08,508. With 6,45,66,781 Maharashtrians being literate, the percentage of literacy is 77.3 percentage. Of the total, 3,74,87,129 men and 2,70,79,652 woman are literate. The area under irrigation is 29.8 lakh hectares with 31 major, 176 medium and 2150 minor irrigation projects as on 30th June 2002. On the other hand there are 33626 registered industries in 2000-2001 in Maharashtra.

Marathi is the principal language of Maharashtra. In the north-west parts, mixture of Gujarati and Dangi is spoken. Marathi in north Maharashtra is a mixture of Hindi, Malvi, Bundeli and has some influence of Ahirani. Marathi in South-east and south is influenced by Telugu and Kannada. Of the total population of the State. 73 per cent is Marathi-speaking, Hindi 8 per cent, 7 per cent speak Urdu and 3 per cent speaks Gujrathi.

The Agriculture production is affected by the weather. The four seasons includes winter from mid September to mid February, Summer from March to May, monsoon from June to September and post monsoon from October to mid December. October is very warm. The *Kharif* crops grown in Maharashtra are *Jowar* (Sorghum), *Bajra* (millet), Rice, Cotton & Groundnuts & the cash crops and the *Rabi* crops are Wheat, Gram, *Jowar*. Cereals include Rice, Wheat, *Bajra*, *Jowar*, Maize, Bali, Nachni, while Tur (Red gram) & dal are the main pulses grown. Cash crops like Sugarcane, Cotton, Chillies, Tabacco and Banana and Oil seeds like groundnut Sesame, *Jowar*, Karadi and mustard earn revenue for the state.

The net crop area and total crop area is 17,619,000 hectares and 22,381,000 hectares respectively. The total irrigated area is 3,667,000 hectares making the ratio of total irrigated area with crop area 16.4 per cent. The area under the cultivation of cereals is 9,411,000 hectares and that under pulses is 33,88,000 hectares making the total area under food grains 12,798,000 hectares. The area under horticulture is 10.14 lakh hectares as on 15th November 2002.

The famous tourist places of Maharashtra are Gateway of India, Juhu Beach, Goregaon Film city, Kanheri caves, Lonawala and Khandala, Matheran, Shreekshetra, Ganpatipule, Sindhudurg and Vijaydurg forts, Trimbkeshwar, Saptashirngi hill, Jyotirlinga, Place of Chandbibi (Ahmednagar), Shirdi Saibaba, Mahabhaleshwar & Panchgani, Koyanagar, Pandharpur, Ajanta and Ellora caves, Chikhaldara, Sachkhand Gurudwara at Nanded, Tuljapur, Sahastrakund water falls near Umerkhed, Sevagram, Paunar, Botanical Park and Deekshabhoomi at Nagpur.

The health infrastructure consists of 1768 primary health centres (PHC's), 1544 dispensaries, 1102 hospitals and 9725 sub-centers.

Education is imparted through a number of institutions. There are 68736 Primary Schools and 16647 Secondary Schools including Higher Secondary Schools in the state of Maharashtra. The 1708 Colleges in the state are managed by 20 universities.

3.7.1 Area under Horticultural crops in Maharashtra

The major fruits grown in Maharashtra are Banana, Grapes, Orange, Sweet lime, Coconut, Arecanut and Cashewnut.

Table 3.1

Percentage area of cultivation of major fruit crops of Maharashtra during the period 1986-87 to 1997-98.

Year	Banana	Grapes	Orange	Sweet lime	Coco-nut	Areca nut	Cashew nut	Total
86-87	33.58	5.20	33.47	1.92	8.15	2.12	15.65	100.00
87-88	29.91	7.81	33.59	1.89	9.04	2.20	15.53	100.00
88-89	29.90	8.02	33.16	3.33	8.64	2.10	14.84	100.00
89-90	27.86	12.51	31.84	3.20	8.30	2.02	14.25	100.00
90-91	28.55	14.87	29.27	3.53	7.63	1.86	14.27	100.00
91-92	27.39	13.65	31.19	6.00	7.05	1.70	13.03	100.00
92-93	27.09	14.02	31.15	5.99	7.04	1.69	13.01	100.00
93-94	33.39	11.89	32.37	4.89	5.65	1.36	10.45	100.00
94-95	26.60	14.99	32.19	4.87	5.82	1.35	14.16	100.00
95-96	24.54	17.80	32.22	4.35	5.20	1.21	12.66	100.00
96-97	21.18	12.33	38.71	6.26	6.69	0.84	13.97	100.00
97-98	23.57	10.75	38.04	6.53	6.58	0.83	14.09	100.00

Source : Office of the Commissioner of Agriculture, Pune; District wise Agricultural Statistical Information of Maharashtra part II, 1999.

Table 3.1 deal with the percentage share of area of cultivation of major fruit crops of Maharashtra. The table shows that the percentage area covered by cultivation of Banana, Grapes, Orange, Sweet lime, Coconut,

Arecanut and Cashewnut are 23.57 per cent, 10.75 per cent, 38.04 per cent, 6.53 per cent, 0.83 per cent and 14.09 per cent respectively out of total horticultural area of cultivation (1997-98 fig.). The trend shows that oranges rank first in area of cultivation, covering 38.04 per cent of area of the total horticultural cultivated area of Maharashtra. Grapes covers about 1.75 per cent area, out of total horticultural cultivation area of Maharashtra, according to 1997-98 figures. The percentage area covered by these fruit from 1986 to 1998 has remained relatively inelastic.

As far as grapes are concerned, they are grown in the districts of Nashik, Sangli, Solapur, Pune, Satara, Latur, Osmanabad, Ahmednagar, Dhule and other minor areas covered by districts like Parbhani, Jalgaon and Aurangabad districts of Maharashtra.

From the study point of view of exports; the region can be conveniently classified into two regions.

Region I : It covers Nashik District

Region II : It includes the districts of Sangli, Pune, Solapur and Latur.

Export quality grapes are grown very well in Nashik, Sangli, Pune, Solapur and Latur districts of Maharashtra. Presently Thomson seedless, Sonaka, Tas-a-Ganesh and up to some extent flame varieties are grown in these areas.

3.8 Profile of Region –I (Nashik District)²

One of the centres for the Sinhasth Kumbh Mela, Nashik is visited by pilgrims round the year. The Jyotirlinga of Trimbkeshwar is located near Nashik. The Artillery school of Deolali, the MiG Aircraft Factory at Ozar, the Currency Note Press & India Security Press at Nashik-Road, the Five-star industrial estate at Sinnar, the bumper onion crops year after year and internationally acclaimed grapes are some of the distinguishing features of the district.

The Nashik district spreads over an area of 15539 sq. kms with four Sub-divisions – Kalwan, Niphad, Nashik and Malegaon. The district is divided in to 15 talukas- Nashik, Igatpuri, Peth,

Dindori, Niphad, Devla, Trimbkeshwar, Sinner, Yeola, Malegaon, Nandegaon, Chandwad, Kalvan, Surgana and Baglan. It is at a distance of 185 kms. from Mumbai. These talukas are connected by roadways and airways. Gandhinagar and Ozar (MIG) which is a protective area only for the VVIP's are the main airports. Igatpuri, Deolali, Nashik Road, Niphad, Lasalgaon, Manmad, Nandgaon and Yevla are the railway stations.

The total population of the district 49,87,923 comprising of 25,91,980 male and 23,95,943 female population. The number of literate men are 18,71,206, while the woman are 12,99,520 bringing the total literate population to 31,70,726 and literacy percentage to 75.10 per cent. Irrigated area of Nashik is 1,71,200 hectares where water is supplied by means of 3 major, 4 medium and 39 minor projects. The 13 important irrigation projects include Chankapur, Darna, Gangapur, Palkhed, Karanjvan , Ozerkhed, Vaghad, Girna, Kadva, Mukne, Tisgaon, Punegaon, Vaitarna on the other hand there are 74 big, 200 medium and 10786 small industries in Nashik.

The languages dialectic spoken are Marathi, Ahrani, Konkani and Adivasi. The Folk arts include Keertan, Bhajan, Adivasi, Bohada and Tarpa.

The main crops are grape, onion, sugarcane, *bajra*, *jowar*, rice, nagli and pomegranate. The weather conditions of Nashik record maximum temperature of 31.56°C and minimum of 17.6° C. The average rain fall is 703.00 mm. The area under horticulture is 62794 hectares.

Tourism is important in Nashik. The important tourist places being Trimbkeshwar Jyotirling, Vani, Saptshirang fort, Charmaraj

lani, Pandav lani, Panchvati, Kalaram mandir, Gangapur dam, Vaitarna Hydro-electric Project, MIG Aircraft factory (Ozhar), Nashik Road-Muktidham, Rangmahal of Ahilyabai Holkar at Chandwad.

There are 103 Primary Health Care Centres, 25 rural Hospitals, one district hospital, 5 big hospitals and one cottage hospital. The Primary and Secondary School number 3339 and 648 respectively. Two Universities Supervise 153 Colleges in the districts.

3.8.1 The 'Grape City' of India

According to the statistical information available from the Commissioner of Agriculture (Pune), Nashik occupies about 60.29 per cent (16263 hectare) of the area under grape cultivation in Maharashtra (26973 hectare) in 1998-99. Its share is about 54.94 per cent (375400 tons) of the production in Maharashtra for the year 1998-99. Hence the significance of the Nashik in cultivation of the grape crop.

Grapes are grown in the pockets of Pimpalgaon Baswant, Sokora, Ugoan, Vani, Khadak Malegaon, Vinchur, Lasalgaon of

Niphad taluka of Nashik district. Grapes are also grown in the pockets of Dindori and Chandwad talukas of Nashik districts.

It is popularly said that if pruning is done on Oct. 2 in Nashik, Sangli and Solapur districts and then after few weeks if we make observation the following results occurs³ :

Nashik district : Growth of grape berries is the size of the *Bajara* grain.

Sangli district : Growth of grape berries is the size of groundnut.

Solapur district : Growth of grape berries is the size of Horse gram (*Harbara*).

This shows that the growth of grape berries is slower in Nashik district. This is due to the climatic conditions of Nashik district. The temperature of Nashik, Sangali & Solapur are :

	Maximum	Minimum
Nashik	31.54°C	17.6°C
Sangli	42°C	14°C
Solapur	34.10°C	21.7°C

Source : Aaple Maharashtra, CD, Ministry of Information & Publication, GOM.

The above table shows that, temperature of Nashik region is lower as compared to other grape growing regions of Maharashtra. The Lower the temperature, slower is the growth of the berries. Generally the harvesting season of Nashik region starts 15 days late than Region II.

The window available for Indian grapes in the European Market is from April 15 to May 15. No-where in the world grapes can be marketed, except India during this period. Incidentally Nashik grapes are harvested from late March to April end. This gives an advantage to Nashik growers to cash in on the European window available for exports.

Hence, almost 80 per cent of the exports of Nashik district is to the European countries.

Moreover most of this export is done directly by the growers. There are more than 50 grower exporter companies, who export grapes from Nashik district. 3 to 5 farmers come together to form a private limited company of grower exporters. There are 5 to 6 dominant traders who export a significant quantity of the produce of Nashik region.

The concept of grower-exporter of grapes in the Nashik district has originated for first time in the history of grape exports of India. Hence, the significance of grower exporter model in the study of agricultural exports in general and Horticultural exports in particular.

3.9 Profile of Region II

The Region-II which includes, Sangli, Pune, Solapur and Latur districts of Maharashtra covers about 32.67 per cent of the area under grapes cultivation in Maharashtra. This region produces about 39.66 per cent grapes in Maharashtra as per the data of 1998-1999 data of the Commissioner of Agriculture, Pune.

3.9.1 Profile of Sangli District⁴ :

The land of milk, fruits, temples, wrestlers and warriors, Sangli district is among the most advanced in India. It is the birthplace of modern Marathi theatre, especially the musicals. Asia's largest cooperative sugar factory is a social and political magnet. Battis-Shirala is famous around the world for Nagpanchmi celebrations when thousands of cobras are worshipped freely by people. Pomegranates and grapes produced in this district have invaded foreign markets, especially in the West. The progressive steps, taken for adopting the latest technology by this district, for modernising agricultural and farm research are remarkable. Miraj, another major town of the district, is famous for manufacturing winged musical instruments.

The three sub-divisions of Sangli district namely Miraj, Vita and Valva are spread over an area of 8577 sq.kms. The district, at a distance of 395.7 kms from the metropolis Mumbai has nine talukas -Miraj, Tasgaon, Shirala, Valva, Aatpadi, Kavthemahankal, Khanapur, Jat and Palus which are connected by railway and roadways. Sangli and Miraj are the important railway stations. ST buses form a convenient mode of transport.

The total population of the district is 25,81,835 with the male population being 13,19,267 and the female population being 12,62,568 of the total population, the number of literate people is 17,31,579 which includes 9,86,743 men and 7,44,836 women, bringing the literacy percentage of Sangli district to 76.76 per cent.

The major irrigation project is at Chandoli dam, the important project at Warna, along with 5 other medium and 54 minor irrigation projects together irrigate a total area of 1,20,302 hectares.

Sangli has 37 medium and 6,940 small scale industries. Marathi is the dominant language spoken in the district. Folk arts like Dhangiri Ovyas, Shahiri and folk stage flourish here. The main

tourist attractions are Chandoli and Sagreshwar Sanctuaries, Dandoba hill station and Audumbar Dutt Mandir.

The Agricultural produce like rice, *jowar*, *bajra*, groundnut, turmeric, soyabean, sugarcane, wheat, grape and pomegranate is grown here on an average rain fall of 649.80 mm and maximum temperature of 42°C and minimum of 14°C. Area under horticulture in Sangli district is 29381 hectares.

As many as 59 primary health care centers 9 rural hospitals and 2 districts hospitals make up the health infrastructure of Sangli district. Educational services are provided by 1824 Primary 476 Secondary Schools and 30 Colleges.

3.9.2 Profile of Solapur District⁵ :

The presiding deity of Maharashtra, Lord Vitthal is at Pandharpur in this district. Swami Samarth of Akkalkot has followers from all walks of life. Solapur is famous as a textile town, especially owing to its talented weavers' community. A melting pot with a confluence of Marathi, Telugu and Kannada languages, Solapur district leads in *beedi* production. Its great strides, in the fields of education, literature and culture as well as rural prosperity, brought in by the cooperation movement, have made Solapur

district an important segment of modern Maharashtra. The supreme sacrifice by the revolutionaries of Solapur has made it immortal. So much so that the Martyrs' Memorial here is saluted daily by thousands of visitors. Kundalsangam, Karmala and Barshi have adopted the path of development through industry and education.

Solapur is at the distance of 450 kms from Mumbai, spans over a total area of 14886 sq. kms. It is divided into 3 sub-division- Solapur , Madha (Kurduwadi) and Pandharpur. Solapur, Barshi, Akkalkot, South Solapur , Mohol, Mangalvedha, Pandharpur, Sangola, Malshiras, Karmala and Madha are the 11 talukas in Solapur. These are connected by roadways, the principle mode of public transport being ST Buses and railways of which Solapur, Mohol and Kurudwadi are important railway stations.

Of the total population which is 38,55,383 as many as 23,65,053 is literate bringing the literacy percentage to 71.50 per cent. The total male population is 19,90,661 of which 14,00, 379 is literate, while the total female population is 18,64,722 among whom 9,64,674 are literate. The languages and Dialects spoken by these people are Marathi, Telgu, Kannada and Urdu.

The folk arts of Lavani, Gondhal, Dhangiri, Aradhi and Bhalari songs are the major attraction. Kundalsangam, Pandharpur, Akkalkot, Barshi, Karmala and Nanaj (North Solapur taluka) are important to the tourist destinations.

About 4,83,915 hectares is under irrigation, there is one major and one important irrigation project-namely Bhima Ujjani in Solapur. Besides these, 2 medium and 69 minor irrigation projects supply water to the total irrigated area, where the main crops grown are jowar, wheat and sugarcane. The area under horticulture is 60,000 hectares. There are 98 big and 8986 small scale industries in Solapur. Solapur records a maximum temperature of 34.10°C and a minimum of 21.7°C. The average annual rainfall of this district is 759.80 mm.

There is a sub center of Shivaji University with 30 affiliate Colleges. Basic education is imparted through 2838 Primary schools and 637 Secondary Schools.

There are as many as 30 big hospital one district hospital and 14 rural hospitals in Solapur. 67 Primary health care centre complete the health infrastructure of this district.

3.9.3 The Raisin (Manukka) market⁶ :

Harvesting of grapes in the Sangli-Solapur region is done in the month of February/March. Hence this region does not enjoy the benefits of the European window available to India. The late lots of Sangli – Solapur are sent to Europe by direct shipping line of Mumbai-London.

Moreover, a significant quantity of the grape produced in the region of Sangli - Solapur is processed into raisins. This is due to the climatic advantage for producing raisins. There is low humidity in this region, which helps in drying grapes for raisins, unlike other regions. Tasgaon has got a national market for bedanas.

Most of the grapes are exported to the middle east from this region. This export is done by cooperatives and by Mumbai traders. Grower exporters are absent in this region.

3.9.4 Profile of Pune District⁷ :

Chhatrapati Shivaji Maharaj, the Peshwas, Mahatma Jotiba Phule, Lokmanya Bal Gangadhar Tilak and many illustrious sons of India chose Pune as their base and took its fame around the world. Pune is regarded as the cultural capital of Maharashtra. Pune is the

only city in the world to be surrounded by three military cantonments – Pune, Khadki and Dehu Road. The National Defence Academy nestles in the Sahyadri range just outside Pune. The National Chemical Laboratory, the Ordnance Factory, the High Explosives Factory, IUCCA, set up by Dr. Jayant Narlikar for research astronomy, all are situated in Pune. The pilgrimage places of Alandi and Dehu attract countless Warkari sect devotees round the year. A huge network of educational, research and social reform institutions have made Pune an international city over the years.

The Pune district spans over an area 15637 sq.kms. which is divided into 5 sub-divisions - Pune, Maval, Bhore, Junnar and Baramati. For administrative purposes, Pune is divided into 14 talukas - Pune, Mavala, Mulshi, Shirur, Ghodnadi, Bhore, Velha, Purandar, Khed, Ambegaon, Junnar, Baramati, Daund, Haveli and Indapur. The district is at the distance of 154 kms. from Mumbai. The state transport buses from Swargate and Pimpri Chinchwad Depots form an efficient mode of transports Pune and Shivajinagar are the important railway station and main airport is at Lohagaon.

The total population of Pune district is 72,24,224. Total male population is 37,68,001 and total female population is

34,56,223. Pune the seat of education of the state has literacy rate of 80.78 per cent. Of the total male population 29,05,770 and total female population 21,80,971 are literate. There are many irrigation projects in Pune, 20 big projects, 39 medium, 341 small/minor and 15 important projects. These irrigate an area of 2,87,000 hectares. The important irrigation projects are Bhatghar, Khadakvasala, Khadakvasala-Panshet, Khadakvasala-Varasgaon, Manikdoh, Kukadi-Vadaj, Kukadi-Sedgaon, Pavna, Dimbhe, Chasakman, Bhama Askhed, Gunjvani, Nira Devdhar, Pimpalgaon Joge and Temghar. The main crops grown are jowar, wheat, bajra, sugarcane, rice and onion. The total area under horticulture is 1,93,281 hectares. There are 28 big Industries in Pune. Besides these there are 443 medium and 43899 small scale industries.

Pune is known for its pleasant weather which attracts the number of tourist. The maximum temperature of Pune is 39.8°C and the minimum temperature is 9.6°C . The average annual rainfall in Pune is 721.7 mm. The main tourist attraction are Lonavala and Khandala hill station; Shivneri, Sinhgad, Purandar, Rajgad and Torna forts, Karla and Bhaje caves; Alandi, Dehu, Jejuri religious

places, five Ganpatis of Ashtvinayak and Bhimashankar. Besides these folk arts of Lavani, Bharud form a major attraction.

The health infrastructure in Pune consists of 336 Primary health centers, 60 rural hospital, 5 districts hospital and 43 big hospitals. The people in Pune speak Marathi. The education services are imparted through 2 Universities with 2840 affiliated colleges. There are as many as 4238 Primary schools and 921 Secondary schools.

3.9.5 Profile of Latur District⁸ :

Situated along the Maharashtra-Karnataka border, Latur district has achieved remarkable agricultural development despite adverse climate. It has introduced revolutionary study techniques for the intensely competitive 10th and 12th standard examinations. This set of techniques is now famously known as the Latur Pattern. The district created academic history with many of its students topping the State merit list. A major market place in this region, Latur has achieved accolades due to the Manjara Co-operative Sugar Factory, which has won many awards at the State and National level for excellent performance. Udgir, Ausa, Nilanga and Hatti Bet are some of the places of tourist attraction.

The 2 sub-divisions are Latur and Udgir Talukas together constitute the Latur district which measures 7166 kms. It is divided into 11 talukas Latur, Udgir, Ausa, Nilanga, Renapur, Chakur,

Devani, Shirur Anantpal, Jalkot and Ahmadpur. It is at a distance 487 kms. from Mumbai. The Latur airport- Latur Airstrip, the Latur railway station and the Udgir ST buses connect the district to the other district in Maharashtra state. The population of the district is 20,78,237. The Male population is 10,74,321 and the Female-10,03,916. The total literate population in Latur is 12,75,279 which consists of 7,61,357 male literate population and 5,13,922 female literate population.

There are 2 major, 12 medium and 96 minor irrigation projects which irrigates an area of 78051 hectares. The area under horticulture is 76771 hectares. The main *kharif* crop cultivated is *jowar*.

About 15 big and medium and 2094 small scale industries describe the extent of the industrialization in this district. Marathi is the Language use extensively in this district. The Banjara and Gondhali dance are the folk-Arts in the Latur. Sai, Udgir, Ausa, Kharosa, Nilanga, Hatti Bet are the places of tourist visit.

Health care service are administrated through 46 PHC's, 9 rural hospitals, one district hospital and 5 big private hospitals in Latur.

There are 170 Colleges, 1367 Primary School and 497 Secondary Schools in Latur district.

The official figures for area of cultivation & production of grapes in the Latur district were not available. However a personal survey revealed that good export quality grapes are grown here. The export of grapes has started recently in Latur. Three grower exporters and a co-operative society is involved in the business of grape exports. The exports are done mostly to European countries from this region.

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CHAPTER IV

Marketing of Grapes in Local Market

4.1 Introduction

The data available from the commissioner of Agriculture, Pune, reveals that the major Horticultural crops of Maharashtra are Banana, Grapes, Orange, Mosmbi, Coconut, Arecanut and Cashewnut. Out of all these fruits, grapes are highly perishable and delicate fruit. Hence the treatment for marketing of grapes is different from other fruits.

Poor infrastructure facilities, like road and storage, causes considerable damage to grapes in local markets. Due to bad road conditions, the grapes have the problems of bruising, especially those which are at the bottom of the transport vehicles. Also small hair size cracks are developed due to bad road conditions. There are inadequate cold storage facilities for grapes. Moreover the cooling chain has to be from farm to consumer, in case if cold storage is used. Presently this cool chain is not continuous. Therefore cold storage is not of much use¹.

Under these conditions the farmer has to market the grapes. The limiting factors which are responsible for a glut in table grape markets, apart from perishability and storage problems are² -

- a. More than 85 per cent of the total production of grapes is marketed for fresh produce.
- b. More than 70 per cent of the total production is harvested during February-April.

The scope of this chapter is limited to the necessity of understanding the local market for further comparison with foreign markets.

4.2 Demand for grape in Local Market³

Demand for grapes in the local market depends upon :

(a) Availability of other fruits

The grape harvesting period is from December to April. In this period Apples are available till December end, while Mangoes start from April. After December if Apples are available, they are expensive. Also the proper season for Mangoes in Maharashtra starts in the month of May. Hence, April Mangoes are expensive, only Oranges are available from February to April. Hence grape fruits have little competition from other fruits. Other fruits available in this season are perennial fruits like Banana, Ber etc.

These fruits cannot be compared with grape fruit. Hence, because of this natural advantage of less competition from other fruits, Grape fruit always gets a good price. Even under the worst market condition the grape farmers get Rs. 10/- per kg. The price for farmers generally does not come below Rs. 10/- per kg.

b) Quality

Quality is another factor affecting the demand for grapes. Good quality grapes are demanded without hesitation. The farmers get a price of Rs. 15/- to Rs. 20/- per kg. for good quality grapes.

c) Period

The harvesting period of grapes is from December to April. More than 70 per cent of the produce is harvested in the month of February to April. Hence there is a glut in the local markets and the farmers get less price. However if farmers harvest grapes in the month of December they can get a good price. But to get grapes harvested in the month of December, pruning must be done in the month of August. If pruning is done in the month of August, extra effort and care is required. Normal pruning is done in the month of October. Hence small farmers do not take the risk of August pruning. Big farmers, can afford August pruning on some plots of

the farm and harvest grapes in December to get good prices. They can afford the risk, as their other plots are pruned in October. Hence the period of harvesting decides the price of grapes for the farmers.

4.3 The Cost of production of grape crop⁴ :

A) Expenses incurred for grape cultivation for one acre

a) The establishment cost for cultivation of 1 acre grape crop is estimated as follows :

Training system (Y method)/ = Rs. 55000/-

Or (Bower method) = Rs. 65000/-

Drip = Rs. 15000/-

Bamboo = Rs. 8000/-

Fertilizer & pesticide upto Ist crop = Rs. 12000/-

Weeding & other Management = Rs. 15000/-

TOTAL RS. 105000/- to 115000/-

b) Recurring expenditure for 1 acre

Fertilizer = Rs. 10000/-

Pesticides = Rs. 8000/-

Hormones = Rs. 5000/-

Labour cost = Rs. 15000/-

Irrigation charges = Rs. 2000/-

Bank Interest = Rs. 5000/-

Miscellaneous = Rs. 5000/-

Rs. 50000/-

c) Interest & Principal loan

Repayment on capital investment of Bower or Y method = Rs.

25000 per year (Considering the life of grapes of 15 years)

B) Income received from grape cultivation on one acre.

The life of the grape crop with a good yield is about 15 years.

Proper fruit starts from the 3rd year of plantation.

The average yield per acre varies from 10 tons to 12 tones.

The average price per kg for cultivators varies from Rs. 10/- to 15/-.

This fluctuation is due to the quality and period of harvesting.

Considering per acre yield as 10 tons and price as Rs. 10/- per kg the income per acre is Rs. 1,00,000. On the other hand, taking 12 tons per acre and receiving Rs. 15 per kg for this quantity, the income per acre comes to Rs. 1,80,000/-. Thus the fluctuations in income is about Rs. 80,000/- for one acre.

d) Considering the expenses and Income from one acre, the grape cultivator is expected to get Rs. 25,000/- to Rs. 1,05,000/- annually.

For getting this income the grower has to be physically present in the grape vineyard and keep watch for insect infection. The grower has to continuously monitor the climate to make crucial changes in the horticultural practices.

4.4 The marketing system in the local market^s

a) Fixed Price

In this method the entire grape vineyard is sold at the fixed price. Once the price is fixed, the entire responsibility of packing and transportation depends on the party, which has purchased it. Generally the price received from this type of marketing is less. It is about Rs. 9/- to Rs. 10/- per kg.

The advantage from this type of marketing is that the farmers are assured of the minimum price. Mostly small farmers, who are not ready to take risk, follow this method of fixed price.

Agents from Delhi, Mumbai, Calcutta and local traders bargain for this fixed price.

b) Marketing with the help of commission agent

In this system of marketing the packing and transportation responsibilities is with the grower. The boxes of 4 kg are packed and sent to the Mumbai, Delhi and Calcutta national markets. The price is decided after opening the boxes and observing the quality. But the price received in this market is certainly more than the fixed price market system. The average price received in this

market system is Rs. 15/- per kg. Mostly big farmers who can take the risk are involved in this type of market system.

4.5 Packing in local markets ⁶ :

a) Short distance market

Table grapes meant for short distance markets are packed in bamboo baskets or deal wood boxes in the field while harvesting only. The basket or boxes are lined with used newsprint and grape leaves for cushioning. After filling the grapes, the open end of a basket is closed with a thick layer of newsprint and secured firmly by tying crosswise with a gunny twine. The open end of a deal wood box is closed by lining it with old newsprint and fastening two pieces of thin deal wood sheets by nails, leaving a gap between them.

b) Long distance market

The table grapes for long distance transport are packed in ventilated corrugated fiberboard cartons. Cardboard boxes are lined with old newsprint and tissue paper. Fine paper shreds or fine hay is spread at the bottom and top of the box for cushioning. No

impacking material is placed for extending the shelf life of grapes. The open flaps of the box are secured firmly by an adhesive tape. Berry shatter and berry rot were reduced in Anab-a-shahi and Himrod grapes by wrapping the individual bunches with paper. (Randhawa *et al*, 1977, Bhuller *et al*; 1980). Bhujbal and Meher (1985) reported that less number of loose berries were observed in a box of 4 kg Thompson seedless when paper shreds were used for cushioning ~~as compared to straw.~~

4.6 Packing expenses at different domestic markets⁷

a) Expenses at Mumbai market fixed expenses per 4 kg.

1. Cost of the carton	Rs. 8.00
2. Cost of the Transport up to Mumbai	Rs. 4.50
3. Loading & Unloading expenses	Rs. 1.50
4. Agriculture produce market committee charges	Rs. 1.50
5. Miscellaneous expenses	Rs. 0.05
6. Commission Agent charges 10% on gross sale	

b) Expenses at Delhi market fixed expenses per 4 kg.

1. Cost of the carton	Rs. 8.00
2. Cost of the Transport up to Delhi	Rs. 12.00
3. Loading & Unloading expenses	Rs. 1.50
4. Agriculture produce market committee charges	Rs. 0.50
5. Miscellaneous expenses	Rs. 0.05
6. Commission Agent charges 8% on gross sale	

c) Expenses at Calcutta market fixed expenses per 4 kg.

1. Cost of the carton	Rs. 8.00
2. Cost of the Transport up to Calcutta	Rs. 18.00
3. Loading & Unloading expenses	Rs. 1.50
4. Agriculture produce market committee charges	Rs. 0.50
5. Miscellaneous expenses	Rs. 0.05
6. Commission Agent charges 8% on gross sale	

After deducting the entire expenses, the grower is expected to get net price for his grapes.

The price in these different markets appear to be different. The transport cost is responsible for different prices in different markets. Moreover, the price realization is more or less the same as calculated earlier in different markets for the growers.

It is necessary to sell grapes at different markets in order to avoid a glut in one particular market, which reduces price for grapes.

4.7 Income-Expenditure of grape exports⁸ :

The experimental survey shows that the cost of per kg grapes is Rs. 7/- per kg. for farmers with own land. The cost of export quality grapes is also Rs. 7/- per kg, as the best bunches of the

vineyard are plucked for export. Devoting separate plot of land for export is a very recent concept.

In such plots the tonnage taken is less. In such plots for one acre, 10 tons of grapes are produced. For such plots, the cost of the grapes is Rs. 8/- per kg.⁷

Note : Almost all the grape growers have the gift of land from their ancestors. Hence there is no rent on the land. Hence the production cost of grape is Rs. 7/- per kg. The present study was focused on the problem of grape exports after post harvest management. Hence the detail break- up of the cost of production of per kg grape was not studied.

Personal field survey and its analysis gives the expenses of export marketing cost as follows for the year 1999 taken in the field survey 2000-2001.

FOB of export marketing cost for European market (for 5 kg box)

Box	= Rs. 27 (paper imported from South Africa & then manufactured in India).
Bubble sheet	= Rs. 1.10
Polyline	= Rs. 1.30
Polypouch*	= Rs. 13.50 (Spain), Rs. 6.30 (Local)
Tissue paper	= Rs. 1.35
Grape guard	= Rs. 5.00 (Chilly), Rs. 4.50 (Local)
Angle board	= Rs. 2.05
Stripping clip	= Rs. 0.35
Temperature record	= Rs. 0.76
Pallet	= Rs. 1.75
Sales Tax	= 4%
Interest	= 6.50% (2.99% for one month)

Transport & clearing agency	= Rs. 12.00
Insurance	= Rs. 5.10
E.C.G.C.	= Rs. 0.75
Internal Transport	= Rs. 1.17
Pre cooling charges	= Rs. 21.30

FOB = Rs. 94.48

* Rs. 1.50 & Rs. 0.70 per pouch of Spain & Indian respectively, usually one box of 5 kg contains 9 pouches.

Expenses in foreign land for 5 kg box (UK)**Export cost of one container (15 tons) in pounds.**

Duty & clearance	=	1760
Landing	=	134
Hollages (Handling)	=	350
Distribution & labeling	=	1434
Sorting & repacking	=	994
Sea freight	=	2941
Commission of foreign agent	=	1510
All expenses	=	9123 per container (15 tons)
Expenses for 5 kg box	=	£ 3.04

**Thus total export market cost including production cost of grapes
for 5 kg grapes goes to**

Production cost	=	Rs. 35.00
Inland expenses	=	Rs. 94.48
Foreign land expenses	=	£ 3

Source : Field survey 2000-01.

Expenses at Rotterdam market (Netherlands) in HFL per 5 kg or 4.5 kg carton ⁹ :

1	If cargo is damaged	Survey
2	Freight & Bunket	3.04
3	Terminal handling	0.11
4	Documents	0.05
5	Haulage container	0.10
6	Handling	0.18
7	Pallets & Corner Post	30.00 for one pallet
8	Import Duty	1.72 (11%)
9	Cold storage	0.17
10	C.A.documents	8.00
11	Bank cost	0.06
12	Repacking charges	If re-packing done
13	Commission on Gross sale 6%	-
HFL		5.43

Packing & forwarding cost upto Mumbai for Dubai for 2 kg carton ¹⁰ :

1	Packing cost	12.00
2	Paper cutting	0.85
3	Tissue Paper	1.50
4	Tape	0.60
5	Sutali	0.60
6	Sulphur Pad	1.95
	Inland transport :	Rs. 17.47 Rs. 5.15
	Insurance:	Rs.22.62 Rs.1.48
		Rs.24.10

Expenses at Dubai (U.A.E.) market in APED per JOTHA ¹¹:

1	Mumbai-Dubai container freight	0.74
2	Port Clearance & Transport	0.18
3	Container unloading	0.04
4	Transport Cold Storage to market	0.04
5	Loading in Truck	0.8
6	Unloading at Market	0.8
7	Cold Storage Charges per week	0.06
8		1.38 AED per Jotha
9	5% commission on Gross Sale	

Deducting all the expenses of Domestic & Export markets the
Grower gets the following prices :

Rs. 30 per kg for Export market (European Market)

Rs. 15 per kg for Domestic market.

Profits are about 25 per cent more than domestic market for Dubai
market.

The price, which the exporter got, varied from £10.50 to £ 7, since
1992-1993 to 2000. The trend shows that the rates have declined from
1992 to 2000 consistently.

Thus all expenses including production cost till foreign market goes
to £ 5 for the box of 5 kg. Thus the grower exporter are earning a profit of

Rs. 30 per kg in UK & European Market, provided the required quality of grapes is delivered in the market.

According to the field survey it was difficult to trace the profitability in the Dubai market. However, the exporters get about 25 per cent more profits in Dubai than the domestic market.

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11. ibid

CHAPTER V

Procedure of Marketing of Grape In International Market

5.1 Introduction

The exporting activity involves several commercial and regulatory procedures. These procedures also involve considerable documentation requirements. Besides the documentation pertaining to the commercial aspects of the export business, there are documentation requirements of a regulatory nature like excise clearance, foreign exchange regulations etc. The export documentation involves the preparation of a specified number of copies of the prescribed documents pertaining to the different procedures. Recently different forms used in the export documentation have been standardised and aligned¹.

A detailed account of the export procedures and documentation is outside the scope of this chapter, as it would have been only Superarogative work from previous sources. However, important procedures followed for grape exports are discussed in details.

The following information on procedure for registration of farms producing grapes have been collected from Ministry of Agriculture, Government of India, Guidelines for Monitoring of

**Pesticide residues in grapes for exports, circular No. 91-4/95, PQD,
29th Feb., 2000.**

5.2 Procedure for Registration of Farms Producing Grapes for Exports

- 1. Every farmer/ exporter, who intends to export directly or supply to exporters, have to apply for registration of their farm to District Superintending Agriculture/ Horticulture Officer.**
- 2. After receiving the Application form from Farmer/Exporter, the information is entered in a register maintained by the District Superintending Agriculture/ Horticulture Office.**
- 3. A registration number is given to each farm and is under the charge of Agriculture/ Horticulture Officer whose head quarter is near the farm. The farm is allotted a registration number in the following system :**

District	Taluka/ Mandal	Farmer/Exporter	Farm number
00	00	000	00

- 4. Each farmer /exporter has to maintain pesticide application record in a specific format.**

5.3 Procedure for Inspection and Sampling of Farms Producing Grapes for Exports

Each concerned Agriculture/ Horticulture Officer visits atleast twice to inspect the farm prior to harvest/sampling of the grapes.

The first inspection is preferably, carried out in the month of December, the second 30-45 days after the first inspection and the third at the time of sampling. Each Agriculture/Horticulture Officer prepares the report as per the format.

Sampling of each grape farm is carried out as per the procedure.

The procedure is as follows :

i. Definitions :

- a. Lot :** An identifiable quantity of goods delivered at one time, having or presumed to have common properties or uniform characteristics such as the same origin, the same variety, the same consignor and the same type of packing. Several lots may make up a consignment.
- b. Consignment :** A quantity of material covered by a particular consignment note or shipping document. Lots in the same consignment may be delivered at different time and may have different amount of pesticide residues.

- c. **Primary Sample** : A quantity or material is taken from different corner and places in the plot.
- d. **Bulk Sample** : Combined total of all the primary samples is taken from the same lot.
- e. **Final Sample** : Bulk sample or representative part of the bulk sample is used for control purposes.
- f. **Laboratory Sample** : Sample submitted to the laboratory for testing. The final sample may be used as a whole or subdivided in to representative portions (Laboratory Sample), if required.
- g. **Test Sample** : the sample is prepared by the laboratory for testing after suitable reduction of the laboratory sample, if required.

ii. **Requirement of sampling :**

While drawing the primary samples and in all subsequent procedure, precaution must be taken to avoid contamination of the sample or any other changes which could adversely affect the amount of residue or the analytical determination or make a laboratory sample not representative of bulk sample.

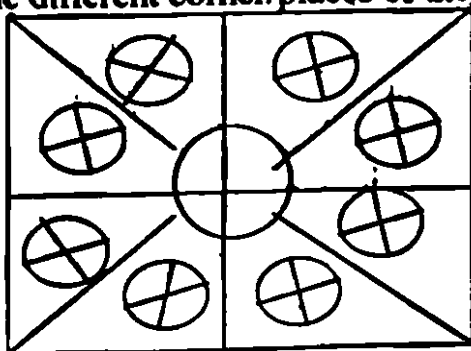
- a. **Diseased or under-sized commodities may also be avoided.**

- b. As many pesticides are degradable, it is advisable to protect samples and any solutions or extract from needless exposure to light.
- c. Sample should be taken from all corners and the center of the garden.
- d. 3 to 4 berries should be taken from each selected position and mix it properly.
- e. In the case of solid/dry products, plastics/polyethylene/paper bags shall be used. The polyethylene bags must be put in additional heavy paper bags.
- f. It must be ensured that corrugated boxes/containers used are entirely free from contamination.
- g. It may be ensured that a sample, after drawing, should reach the laboratory for analysis within 24 hours and should be stored at the required temperature.

iii. Sampling Procedure

Each farm, which is to be examined, is sampled separately.

A Map of the Grape farm showing the sampling of primary sample from the different corner/places of the farm is shown below-



iv. Primary sample :

For primary sampling generally 200 grams grapes are tested.

- a. The Primary sample is collected throughout the plot.
- b. All primary samples should be of the same size and the combined total of all the primary sample (bulk samples) must not be less than that required for the final sample, bearing in mind the possible requirement of further reduction and all the provisions of adequate laboratory sample.
- c. The minimum number of primary samples generally collected are according to information given in the table 5.1.

Table 5.1 : Scale of Sampling

Area of the farm (ha)	Minimum number of primary samples to be taken	Minimum quantity of primary sample
Up to 2.5 ha	15	3 kg
2.5 to 5 ha.	30	6 kg
5 to 7.5 ha.	45	9 kg
7.5 to 10 ha. & above	50	10 kg

- d. Preparation of bulk sample : The bulk sample shall be made by combining and mixing the primary sample.

e. Preparation of final sample.

- 1. The bulk sample generally constitute the final sample.**
- 2. If the bulk sample is too large, the final sample may be prepared from it by a suitable method of reduction i.e. 1 kg. In the process of reduction, however, individual fruits must not be cut or divided.**
- 3. Each sample is drawn in the presence of farmer/ exporter from the concerned farm. The sample is sealed/ marked properly and handed over to the Farmer/ exporter for delivering the same to the residue testing laboratory along with sample slips as prescribed. The sample slip should be duly signed by the farmer/exporter and the Agriculture/ Horticulture Officer, who has drawn the sample.**
- 4. The sample collected is sent to the nominated laboratories of APEDA alongwith the prescribed sample analysis fee. The laboratories claim the applicable reimbursement of the sample analysis from APEDA by submission of a consolidated statement of grape samples test along with the test reports on a monthly basis.**
- 5. Each sample is tested for pesticides as per the method of analysis.**
- 6. The certificate of residue analysis is issued as per the format.**
- 7. Laboratory prints four copies of certificates of residue analysis as per the following details :**

- i) First copy – to be printed as, ‘ Farmer’s/ Exporter’s copy”, on white colour paper.
 - ii) Second copy- to be printed as, ‘PSC issuing Authority copy”, on green colour paper.
 - iii) Third copy – to be printed as, “Agriculture/Horticulture Officer’s copy”, on yellow colour paper.
 - iv) Fourth copy- to be printed as, “Office copy”, of laboratory on pink colour paper.
8. The laboratory hands over the first three copies of the certificate of residue analysis to the applicant i.e. to the farmer/exporter while four copies remain in the laboratory as its office record.
9. The farmer/exporter sends the yellow copy of the certificate of residue analysis to the concerned Agriculture/ Horticulture Officer allotted to the respective farm.
- v. **Packing and Transportation of Laboratory Sample**
- Each laboratory sample must be correctly identified and must be placed in a clean inert container offering adequate protection from external contamination and protection against damage or deterioration of the sample in transit. The container must then be sealed in such a manner that unauthorized opening is detectable.

Samples should be sent to the laboratory along with a sample slip as soon as possible (within 24 hours) taking necessary precautions against leakage or spoilage.

5.4 Stages followed in export of grapes

The following stages are important in the export of table grapes.

This information have been collected from field survey 2000-01.

A) Harvesting of grapes from vineyard

1. Before harvesting of grapes, a survey is made in the vineyard.

In this survey the availability of export quality grapes is observed.

2. One day before actually plucking the export quality grapes, they are marked with thread or coloured paper. Due to this on the next day, export quality grapes are only plucked. This helps to save time and the work is finished in time.
3. The grape bunches are plucked before 9.00 am. Due to this, the temperature of the grapes does not rise.
4. The grapes are not plucked after watering the vineyard, for 3 to 4 days. It has been observed that if grapes are plucked within 1 or 2 days after watering the vineyard, it results into dropping of berries in cold storage.

5. The plucking of grapes is done with plastic hand gloves. This results in preserving of luster and attractiveness of grapes for a longer time.
6. After harvesting the bunches should not be placed on top of each other, as it decreases their luster. Hence, a bubble sheet should be placed on the tray for keeping the grapes.

B) The Peculiarity of the export quality grapes (See Appendix-III)

1. **Shape** : The shape of the bunches should be of 'U' or 'V' shaped. The shape of the berries should be egg shaped or roundish.
2. **Colour** : The colour of the grapes should be greenish white. Greenish yellow colour is also accepted. But yellow colour grapes are not accepted in the European market.
3. **Weight of bunches** : The weight of the bunches should be 350 gms to 750 gms. Bunches less than 350 gms should not be plucked. The average weight of a single berry should be 3 to 4 gms.
4. **Sugar level** : The sugar level of the berries should be 16⁰ to 18⁰ brix. If the berries are below 16⁰ brix, then cracks develop to the berries after pre-cooling.

5. **Free from Pesticides** : The grape bunches should be free from pesticides or fungus. The berry should be free from any disease. The berries of grapes should be clean.
6. The taste of the grapes should be sour-sweet.
7. The stem of the bunches should not be dried. The stem of the bunches should have a small knot along with it. Due to this knot, the temperature of the bunches is reduced and the bunches remains green.
8. Excessively ripped bunches are not good for exports.
9. Bunches affected by the fungus should not be exported.
10. All the berries of the bunches should be of the same size, of the best quality, attractive and full of luster.
11. The berries should be free from wetness, water drops and mud particles.

C) Transport :

Transport is a very important process after harvesting. There is a possibility of bruising of grapes in transport. The bruising and damage caused to grapes in transport, lessens the life of the grapes. After harvesting, generally the arrangement of transport is done before hand. If the transport arrangement is done late, then the

temperature of grapes increases, and also, it causes delay for pre-cooling. Late pre-cooling lessens the life of the grapes. Care is taken while loading the crates in the transport vehicle. A crate, if handled with care, lessens the injury to the grapes.

The transport vehicle should be covered from front, behind and upper side of the vehicle. If the vehicle is not covered from front and behind, then hot air is revolved around the grapes during transportation. This causes drying of the stems of the bunches. The covering material used for covering the transport vehicle should be of light in colour and clean. This helps in the prevention of damage by sunrays.

There is a gap between the crates and the covering material. Crates are covered from above properly with the covering material. This is done to prevent the movement of warm air on the grapes.

The transport vehicle is driven with the required speed. The tyre pressure is maintained properly. If there is excess tyre pressure, then excess banging of the vehicle causes damages to the grapes.

D) Handling of grapes :

Grape being a delicate fruit, its handling should also be done in a delicate way. Improper handling affects the skin of the berries and the grapes get spoiled in cold storage. After harvesting, the handling of grapes should be as minimum as possible.

E) The structure of the packing material

There are uniformity of packing structure from exporters as far as the European market is concern.

Corrugated boxes, of five kg are used, having small holes at the sides for aeration. At the bottom of the box lies the bubble sheet. The bubbles sheet is used to prevent bruising of grapes due to bad roads and also due to movements of ship. The export quality grapes of 350 gms to 700 gms are packed in pouches. Such 8 to 9 pouches are packed in the liner. Grape guard paper wrapped in tissue paper is placed on the top of the liner. The grape guard paper is for prevention of fungicide. Tissue paper is wrapped in the grape guard paper, in order to prevent direct contact of sulphur dioxide with the grapes, which is released from the grape guard paper. In the absence of tissue paper, the grapes, which come in contact with

SO₂, might get bleached. Thus causing the problem of rejection of grapes.

F) Two methods of packing are followed :

a) Field packing or Garden packing

b) Centralised packing

a) **Field packing** : In field packing the step of transport of grapes to pack house through crates is skipped. The grading and packing of grapes is directly done in the vineyard. These boxes are then directly transported to the pack-house. There is no possibility of movement of grapes in the boxes while the vehicle is in motion, in comparison with the transport of grapes in crates. If packed boxes are directly transported for pre-cooling & cold storage, less injury is caused to the grapes. This is an advantage of field packing. On the other hand, quality control is the disadvantage of field packing. In field packing, at a time, grapes of different gardens are packed, hence it becomes difficult to control quality. Also desired cleanliness is not observed in field packing.

b) **Centralised Packing** :

In centralised packing, quality control becomes easy and cleanliness can be observed properly. In this packing the grapes are

transported from vineyards to pack-house in crates. In this transport the skin of the grapes is likely to be affected. As a result the skin-affected grapes get spoilt or affected in cold storage. Also there is a possibility of drying of grapes, when transported through crates however, if the cold storage is in the vineyard itself than centralized packing has all the advantages of packing.

G) Packing Room :

1. Once the grapes are transported to the packhouse they are graded (if packing is centralized). Small size bunches, bunches of one or same colour, pink berries, fungus affected berries, short berries and water berries are separated during grading.
2. The temperature of the packhouse is approximately 10°C.
3. The colour of the box used for exporting is generally attractive. The box is of good quality. At the corner of the box labeling is done.

The following items are included on the label :-

- a) Name of the goods
- b) Name of the country from where the goods are produced
- c) Grade of the goods
- d) Weight of the goods inside the box

e) Name and address of the packer.

4. Size of the box :

The size of the box is approximately

50 cm x 30 cm x 12 cm or

40 cm x 30 cm x 14 cm

d) The structure of grape packing is as follows :

1. Generally a 5 kg box should have nine polypouches.

2. Corrugated Board should be used to absorb temperature.

3. A sulphur pad of 55 gm is sufficient for one box. Sulphur pad is used :-

a) to keep grapes fresh (b) to increase keeping quality and (c) to prevent diseases.

4. During transport and while handling of grapes the weight of grapes is reduced in some proportion. Some berries are dropped in this operation. Hence till the export reaches its destination some weight is reduced. Hence, additional 100 gm should be packed, considering the weight loss factor. For example 5 kg boxes of grapes should be packed as 5 kg and 100 gms.

5. The packed boxes are palletised. In one pallet approximately 128 boxes are kept. The size of the pallet is 1m. x 1.2 m. Each pallet is tied with good quality belts.

H) **Pre-cooling :**

After harvesting the fruit, we have to reduce the temperature of the fruit as per requirement, as early as possible. This is known as pre-cooling.

For pre-cooling of grapes, the temperature and humidity should be 0°C and 95 percent respectively. If the temperature of the grapes is reduced to 0 to 2°C, then it is pre-cooled.

Pre-cooling of grapes is done² -

1) **To prevent grape from drying :**

In India the harvesting season of grapes generally starts during December and ends in March i.e. in the beginning of Summer. During this season the temperature varies from 30°C to 40°C. In such circumstances, it is necessary to pre-cool the grapes as early as possible to increase the life of the grapes.

If after harvesting, the pre-cooling is delayed then the main stem to which the berries are attached, along with the small extended stem with knot, starts drying. If the drying of stem is fast, then the small extended stem with knot gets harder and it breaks. Also after drying the colour of the main stem and extended stem becomes brownish. This colour affects the attractiveness of the

grapes. If pre-cooling is delayed the berries of the grapes also dry. Such grapes are not qualified for export.

2) **To prevent the effect of temperature from fungus :**

There is a possibility of the germs of fungus on the grapes. These germs might be present on the grapes in the vineyard itself. These germs later develops into fungus in cold storage.

At 0°C the growth of the fungus is totally stopped. To prevent the development of fungus in cold storage, it is necessary to reduce the temperature of grapes as early as possible to 0°C to 2°C .

3) **To prevent the effect of temperature on respiration :**

If the temperature of grapes rises, then the respiration of the grapes also increases. Increase in rate of respiration leads to increase in heat. This heat spoils the grapes. Hence, if the grapes are pre-cooled as early as possible after harvesting, then respiration is reduced and this increases the life of the grapes.

Generally if the capacity of pre-cooling is 8 tons, then we require 6 hours for pre cooling. If there is excess pre cooling then it may cause cracks to the berries of the grapes. Sometimes palletisation causes delay in pre cooling and hence pre cooling is done in crates.

After pre cooling of grapes, it is necessary to keep grape guard in the box at the temperature of 0°C only. The main purpose of the grape guard is to prevent the infection of fungicide while in storage. The chemical inside the grape guard. Sodium metabisulphate, when comes in contact with temperature, produces sulphurdioxide gas. This gas prevents grape fungus while in cold storage.

I) Cold storage :

1. For maintaining low temperature cold storage is necessary.
2. The minimum temperature of a cold storage should be 3°C and the maximum temperature of grapes should be 5°C .
3. The capacity of cold storage varies from 30 tonnes to 60 tonnes. The grapes in cold storage is expected to be loaded within a week.
4. After pre cooling, sulphur pads should be used. Sulphur pads should be wrapped in tissue paper and must be placed on the top of the grapes.
5. Each pallet should be tied properly with good quality belts.

J) Container loading :

1. Before loading the container of grapes the temperature of grapes should be 0°C-2°C.
2. The container is checked by the Excise Officials as per the formalities before loading.
3. Generally the capacity of the container should be 15 tonnes.
4. The condition of grapes, sulphur pad and date of packing on the pallet should be checked before loading the container.
5. Approximately 20 pallets are placed in a container.
6. A Ryan recorder is placed in each container for measurement of temperature. This Ryan recorder is labeled with the name of the exporter, address and date of loading. Ryan recorder are necessary to know the temperature variation of container and to record such variation.

5.5 Method of Export of Grape to the European Market³

The import of grapes from India by the European super markets is done through their authorised importing agents.

These European importing agents were introduced in 1991 to the grape exporters. Today these European importing agents have set up their offices mostly in Nashik, as most of the export to

Europe is from Nashik. They have employed local people in their office to look after the day-to-day affairs of business.

The office staff is employed for the entire year. All information is exchanged through telephone, fax and recently on internet. In this way the European importing agent is able to tap all the necessary information from the local offices set up in India.

However, the European importing agents company officials visit India in the month of January. During their stay in Nashik, they visit the vineyards of Nashik, Sangli, Solapur and Latur with the help of their local office staff. The exporters export grapes through these importing agents of Europe.

Once the containers reach the export destination, they are unsealed. The certificates of quality for the containers are given by the respective super market. This inspection is done by the quality control officers of the super Market. The lots of grapes, are graded into three categories. Grade A is sold in the super Market, grade B is sold in the whole sale market and grade C is thrown away directly or they are destroyed.

5.6 Method of Payment by the European Market⁴

Grape fruit is a part of perishable produce marketing around the globe. Grapes are sold on free consignment basis in the international market.

There is no forward marketing possibility for perishable goods to safeguard the value of the commodity for a long term. Hence it is sold on consignment basis. This market is the most dynamic of all commodities. The price in this market fluctuates depending on several variables. No forward planning of supply is possible, as the supply is fragmented in an open economy. Therefore, the trend of supply market is impossible to predict. Due to the perish-ability of the produce, cargo put on the block is gelatinised at the prevailing price of that moment. Therefore marketing of perishable produce is not subjected to specific rules except broad parameters of trend analysis of demand and supply. Due to this situation in the terminal market, importer abroad or a commission agent, even in the local market, never commits a selling price but always sells at the best price of the moment. This is the genesis of the consignment trade.

Some invoice value is send to the exporter through banks, soon after the container reaches the terminal market. The remaining amount depends on the market price. This amount is also sent through banks to the exporters. However this amount depends on the prevailing market price at which the goods are sold to the super market.(See Appendix-IV).

The invoice value is received only if the documents reach before or at least along with the container. From the field survey a exporter, Vasudev Kathe, of Nashik, narrated that in 1996 their container had reached first on the foreign land and documents later. This might be because of a problem in courier or bank transfer in England. Due to this the container was kept 8 days on land. As a result of this the company had to pay demurrage charge of Rs. 30,000/-.

5.7 The Dubai Market (U.A.E.)⁵

In the language of a common grower, 'Dubai is a local Market'. The packing structure is different for the Dubai Market. Generally boxes of 2 kg are packed for the U.A.E. Market. There is no specification of quality for Dubai export.

Sometimes grapes are exported to this Market without pre-cooling. Phytosanitary certificates is not required for this market. The method of payment are not specific. Moreover it depends upon the relation of the exporter and the importer. The returns from this market are more than the Delhi market or sometimes equal to the Delhi Market. Hence the common farmer refers to it as a 'local market'.

Moreover farmers are not much interested in the Middle East market. They feel the risk of non-payment. Hence, most of the exports to this part of the world is done by the trader exporter. The trader exporters have multiple businesses and an office in these countries. Hence handling one additional trade of grapes becomes possible for them.

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5. *ibid*

CHAPTER VI

Direction of Grape exports

6.1 Introduction :

The export of grapes started from 1975. This export was to the Middle East Countries. Moreover this export was done by the trader-exporters.

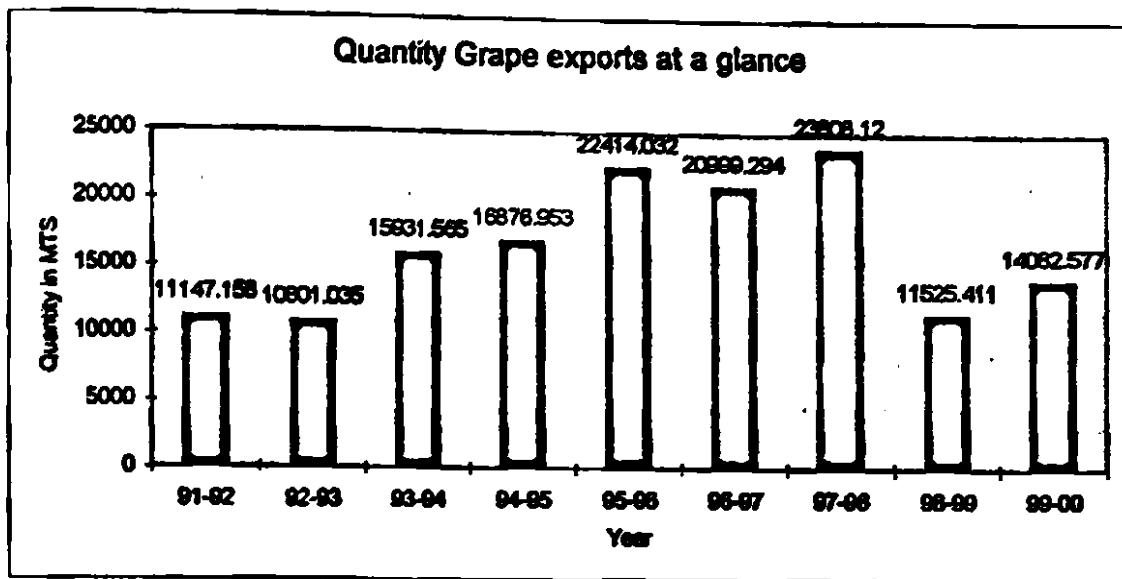
However export to the European Market began in the year 1989. The present study is devoted to the problems of grower-exporters. The grape growers were involved in direct exports prominently in the 1990's. Hence, the study of direction of the trade of grape export in the decade 1991-2000 was done. The scope of this Chapter is to find the quantitative figures of the quantity of grapes exported and the value earned from exports from different countries. The Chapter deals with the amount of trade done by grower-exporters, Co-operative exporters and amount of estimate of trader exporters from the available data. The causes for ups and downs of grape exports have been dealt with, in Chapter VIII i.e. Prospects of grape exports.

Table 6.1

Quantity of grape exported to major countries during the period 1991-92 to 1999-2000 (quantity in m. tonnes).

Year	U.K.	Percent age share	Nether- lands	Percent age share	Bangla- desh	Percent- age share	U.A.E.	Percent age share	Saudi Arabia	Percent age share	Others	Percent age share	Total
1991-1992	271.586	2.44	-	-	1196.987	10.74	6781.179	60.83	1884.889	16.91	1012.52	9.08	11147.16
1992-1993	921.351	8.53	31.3	0.29	1751.702	16.22	5214.384	48.28	1905.592	17.64	976.71	9.04	10801.04
1993-1994	2694.133	16.91	184.39	1.16	2558.415	16.06	6749.393	42.36	2499.091	15.69	1246.14	7.82	15931.57
1994-1995	7063.567	41.85	532.323	3.15	2399.1	14.22	4398.765	26.06	962.747	5.70	1520.45	9.01	16876.95
1995-1996	7766.089	34.65	2037.246	9.09	4582.271	20.44	4852.077	21.65	938.67	4.19	2237.68	9.98	22414.03
1996-1997	8326.828	39.65	2346.493	11.17	3016.594	14.37	3875.934	18.46	611.431	2.91	2822.01	13.44	20999.29
1997-1998	9780.74	41.08	4022.242	16.89	5248.752	22.05	2930.696	12.31	288.892	1.21	1536.8	6.45	23808.12
1998-1999	4584.835	39.78	879.296	7.63	2029.963	17.61	1976.68	17.15	241.524	2.10	1813.11	15.73	11525.41
1999-2000	7105.847	50.46	733.135	5.21	807.267	5.73	3821.488	27.14	274.091	1.95	1340.75	9.52	14082.58

Source : Volumes of Export statistics for Agro. & Food Products 1991-1992 to 1999-2000, APEDA, New Delhi.



Source : Export statistics for Agro. & Food Products 2000-01, APEDA, New Delhi.

6.2 Direction of quantity of grape exported at a glance :

From the Table 6.1 it is very clear that the quantity of grapes exported has increased from 11147.16 m.tonnes. in 1991-92 to 14082.58 m. tonnes. in 1999-00. Thus there has been a growth of quantity by 26.33 per cent in 1999-00 to 1991-92.

The trend shows that over 90 per cent of the quantity of grape exports from India is done to from U.K., the Netherlands, U.A.E., Saudi Arabia and Bangladesh. These countries are the major countries to which grapes are exported. About 0.75 per cent to 2 per cent of the quantity of grapes was exported to the counties like Bahrain, Germany, Kuwait, Oman, Qatar in the decade 1991-2000. This trade, though small in amount, is significant as it has been a continuous trade. The trade of grapes to Bangladesh is more or less stable. The trade of

Bangladesh fluctuated from 4.75 per cent to 8.24 per cent in this decade except for the year 1999-00, where it was just 2.69 per cent. More over the export to Bangladesh is done by trader exporters.

The trend shows that there was a break down in exports of grapes in the year 1998-99. The grape exports declined from 23808.120 m. tonnes in 1997-98 to 11525.411 m. tonnes in 1998-99. This decline was about 48 per cent over the previous year. The trend also shows that exports to U.K. and Netherlands have been increasing in quantity on the other hand the export to U.A.E. and Saudi Arabia have been declining in quantity. The analysis of this trends have been explained in Chapter-VIII .

6.3 Major countries where grapes are being exported by India :

United Kingdom, the Netherlands, Bangladesh, UAE, Saudi Arabia are the major countries to which grapes are exported by India.

The trend from table 6.1 shows that about 90 per cent of the trade is done with U.K., the Netherlands, Bangladesh, U.A.E and Saudi Arabia. Out of this U.K. and the Netherlands account for about 60 per cent of the trade. The trade of U.A.E. and Saudi Arabia varies from 22 to 25 per cent in this decade.

The trade with U.K. has remained relatively inelastic from 1994-95 to 2000. It varied from 34.64 per cent to 50.45 per cent out of total

grape exports during this period. Whereas, the trade with the Netherlands showed fluctuation from 0.28 per cent to 16.89 per cent out of total grape exports from 1992-93 to 2000. The trade of U.A.E. gradually declined from 60.83 per cent in 1991-92 to 27.13 per cent in 1999-2000, with the exception of some minor fluctuations.

The trade of Saudi Arabia declined from 16.90 per cent in 1992-93 to 1.95 per cent in 1999-2000. The trade of Bangladesh has remained relatively inelastic in the range of 14 per cent to 22 per cent, except in the year 1991-92 and 1999-2000; where it was 10.73 per cent and 27.13 per cent.

Table 6.2

Earnings from the grapes exported to major countries during the period 1991-92 to 1999-2000 (earning in Rs. Lakhs).

Year	U.K.	Percent- age share	Nether- lands	Percent- age share	Bangla- desh	Percent- age share	U.A.E.	Percent- age share	Saudi Arabia	Percent- age share	Others	Percent- age share	Total
1991-1992	104.594	5.62	-	-	92.752	4.98	1232.96	66.21	286.461	15.38	145.51	7.81	1862.28
1992-1993	313.581	14.39	14.211	0.65	174.821	8.02	1085	49.80	404.86	18.58	186.34	8.55	2178.81
1993-1994	789.911	23.28	56.891	1.68	270.072	7.96	1488.98	43.89	495.803	14.61	291.15	8.58	3392.8
1994-1995	1990.09	48.72	150.31	3.68	250.01	6.12	1088.14	26.64	219.12	5.36	387.11	9.48	4084.78
1995-1996	2300.31	42.01	564.39	10.31	451.25	8.24	1406.19	25.68	165.28	3.02	588.56	10.75	5475.98
1996-1997	2365.74	44.94	711.86	13.52	253.81	4.82	1102.87	20.95	127.45	2.42	702.95	13.35	5264.68
1997-1998	3253.94	49.29	1437.64	21.78	424.65	6.43	940.4	14.25	53.99	0.82	490.64	7.43	6601.26
1998-1999	1907.31	50.34	327.96	8.66	274.09	7.23	753.38	19.89	52.82	1.39	473.03	12.49	3788.59
1999-2000	3111.87	56.02	286.65	5.16	149.59	2.69	1411.01	25.40	76.68	1.38	518.83	9.34	5554.63

Source : Volumes of Export statistics for Agro.& Food Products 1991-1992 to 1999-2000, APEDA, New Delhi.

6.4 Earnings of grape exports from major countries :

Table 6.2 gives us idea regarding the earning grape export from major countries. The trend shows that about 90 per cent of the value earn is from U.K., the Netherlands, U.A.E., Saudi Arabia and Bangladesh. The percentage share of value earned from U.K. has increased from 5.62 per cent in 1991-92 to 56.02 per cent in 1999-2000. It has remained relatively inelastic from 1994-95 to 1999-2000. This elasticity varied from 42 per cent to 56.02 per cent during this period. Thus a significant amount is earned from U.K. trade, hence its significance.

The percentage share of value earned from the Netherlands varied from 0.65 per cent to 21.78 per cent during the period 1992-93 to 1999-2000. The percentage share of value earned from U.A.E. for the period 1991 to 2000 declined from 66.20 per cent to 25.40 per cent, with some minor fluctuations. The percentage share of value earned from Saudi Arabia gradually declined from 18.58 per cent in 1992-93 to 1.38 per cent in 1999-2000. The trend shows that the trade of grapes to Saudi Arabia is becoming insignificant. The percentage share of value earned from Bangladesh trade has remained relatively inelastic, with the elasticity varying from 4.82 per cent to 8.24 per cent.

6.5 Direction of trade of grapes to major countries :

a. United Kingdom

Table 6.3
Quantity of grape exported to U.K. & its value during the period 1991-92 to 1999-2000.

Year	Quantity (tons)	% Growth	Value (lakhs)	% Growth
1991-92	271.586		104.594	
1992-93	921.351	239.24	313.581	199.80
1993-94	2694.133	192.41	789.911	151.90
1994-95	7063.567	162.18	1990.09	151.94
1995-96	7766.089	9.94	2300.31	15.58
1996-97	8326.828	7.22	2365.74	2.84
1997-98	9780.740	17.46	3253.94	37.54
1998-99	4584.835	-53.13	1907.31	-41.39
1999-2000	7105.847	54.98	3111.87	63.15

Source : Volumes of Export statistics for Agro. & Food

Products 1991-92 to 1999-2000, APEDA, New Delhi.

Note : The percentage change of growth rate of quantity and value are calculated over the previous year.

Table 6.3 shows that the growth rate of the trade of table grapes to U.K. has been positive but declining over the previous years, except for the year 1998-99 where it was negative. The quantity exported to U.K. increased from 271.586 tons 1991-92 to 7105.857 tonnes in 1999-2000. The growth rate of quantity exported to U.K. declined from 239.24 per cent in 1992-93

to 17.46 per cent in 1997-1998 over the previous year. It was -53.13 per cent and 54.94 per cent in 1998-99 and 1999-2000 respectively over the previous years.

Similarly the growth rate of the value earned from U.K. Trade was positive but declining except for the year 1998-99, where it was negative. The value earned from this trade increased from 104.594 lakhs in 1991-92 to 3111.84 lakhs in 1999-2000. The percentage change of growth rate of the value earned declined from 199.80 per cent to 2.84 per cent in 1996-97. The percentage change of value was 37.54 per cent, -41.39 per cent and 63.15 per cent in 1997-98, 1998-99 and 1999-2000 respectively.

b. The Netherlands

Table 6.4

Quantity of grape exported to the Netherlands & its value during the period 1992-93 to 1999-2000.

Year	Quantity (tons)	% Growth	Value (lakhs)	% Growth
1992-93	31.300		14.211	
1993-94	184.390	489.10	56.891	300.35
1994-95	532.323	188.69	150.31	164.21
1995-96	2037.246	182.70	564.39	275.48
1996-97	2346.493	15.18	711.86	26.13
1997-98	4022.242	71.41	1437.64	101.95
1998-99	879.296	-78.14	327.96	-77.19
1999-2000	733.135	-16.62	286.65	-12.60

Source : Volumes of Export statistics for Agro. & Food Products 1991-92 to 1999-2000, APEDA, New Delhi.

Note : The percentage change of growth rate of quantity and value are calculated over the previous year.

The table 6.4 shows that the quantity exported to the Netherlands increased from 31.30 tons in 1992-93 to 4022.242 tons in 1997-98. In 1998-99 and 1999-2000, the quantity exported to the Netherlands was 879.296 tons and 733.135 tons respectively. The value earned from the Netherlands increased from 14.211 lakhs in 1992-93 to 1437.64 lakhs in 1997-98. It was 327.96 lakhs and 286.65 lakhs in 1998-99 and 1999-2000 respectively.

There has been positive but a declining growth rate over the previous years in the quantity of grapes exported from 489.10 per cent in 1993-94 to

71.41 per cent in the year 1997-98 for the quantity exported. In the year 1998-99 and 1999-2000, there was negative growth by -78.14 per cent - 16.62 per cent respectively over the previous years exports.

Similarly there has been a positive but declining growth rate of the value earned from the Netherlands exports from 300.35 per cent in 1993-94 to 101.95 per cent in 1997-98 over the previous years. Negative growth rate of -77.19 per cent and -12.60 per cent over the previous years was earned in 1998-99 and 1999-2000 from the Netherlands exports.

c. U.A.E.

Table 6.5

Quantity of grape exported to U.A.E & its value during the period 1991-92 to 1999-2000.

Year	Quantity (tons)	% Growth	Value (lakhs)	% Growth
1991-92	6781.179		1232.962	
1992-93	5214.384	-23.11	1084.997	-12.01
1993-94	6749.393	29.43	1488.977	37.23
1994-95	4398.765	-34.83	1088.14	-26.92
1995-96	4852.077	10.30	1406.19	29.22
1996-97	3875.934	-20.12	1102.87	-21.58
1997-98	2930.696	-24.39	940.40	-14.73
1998-99	1976.680	-32.56	753.38	-19.89
1999-00	3821.488	93.32	1411.01	87.29

Source : Volumes of Export statistics for Agro. & Food Products 1991-92 to 1999-2000, APEDA, New Delhi.

Note : The percentage change of growth rate of quantity and value are calculated over the previous year.

Table 6.5 shows that there has been a declining and negative growth rate over previous years of table grapes trade with U.A.E, except for the year 1993-94 and 1999-2000, where it was 29.43 per cent and 93.32 per cent respectively over previous years. The fluctuations of this negative growth rate of quantity over previous years varied from 10.30 per cent to 32.56 per cent in the decade 1991-2000.

The growth rate of value earned from U.A.E. grape exports was also negative, except for the years 1993-94 and 1999-2000, where it was 37.23 per cent and 87.29 per cent respectively over previous years. The fluctuations of this negative growth rate of value varied from 12.01 per cent to 26.92 per cent over previous years in the decade 1991- 2000.

d. Saudi Arabia**Table 6.6**

Quantity of grape exported to Saudi Arabia & its value during the period 1991-92 to 1999-2000.

Year	Quantity (tons)	% Growth	Value (lakhs)	% Growth
1991-92	1884.889		286.461	
1992-93	1905.592	1.09	404.86	41.33
1993-94	2499.091	31.14	495.802	22.46
1994-95	962.747	-87.17	219.12	-55.8
1995-96	938.670	-2.51	165.28	-24.58
1996-97	611.431	-34.87	127.45	-22.89
1997-98	288.892	-52.75	53.99	-57.64
1998-99	241.524	-16.40	52.82	-2.17
1999-2000	274.091	13.49	76.68	45.17

Source : Volumes of Export statistics for Agro. & Food Products 1991-92 to 1999-2000, APEDA, New Delhi.

Note : The percentage change of growth rate of quantity and value are calculated over the previous year.

Table 6.6 shows that there was a negative growth rate in the quantity of grapes exported to Saudi Arabia except for the year 1992-93, 1993-94 and 1999-2000, where the growth rate was 1.09 per cent, 31.14 per cent and 13.49 per cent respectively over the previous years.

Similarly there was a negative growth rate for value earned from Saudi Arabia trade except for the years 1992-93, 1993-94 and 1999-

2000; where the growth rate was 41.33 per cent, 22.46 per cent and 45.17 per cent respectively over the previous years.

The fluctuation in negative growth rate of the quantity exported to Saudi Arabia varied from 2.51 per cent to 87.17 per cent over the previous years in the decade 1991-2000. Whereas, the fluctuations in negative growth rate of value earned from grape exports from U.A.E. varied from 2.17 per cent to 57.64 per cent over the previous years in the decade 1999-2000.

6.6 The Export of grape from Maharashtra

It was rather difficult to find the statewise and districtwise export of grapes from the secondary sources. This was the limitation of the present study. However an attempt is made to give the direction and structure of trade of grapes export from Maharashtra.

Table 1.3 shows that the share of grape production of Maharashtra is about 63.02 per cent of the total grape production of India. In Maharashtra the production of the grape from Nashik district is about 54 per cent out of the total grape production of the state (table 1.6). The remaining amount of the production of grape is done by rest of Maharashtra.

Hence Nashik is the 'grape city' of India. For research analysis the Nashik grape growing region is called Region I and rest of the grape producing parts of Maharashtra is called a Region II.

Grapes are exported from Maharashtra by grower-exporters, co-operative-exporters & trader-exporters. The present task was to study the problem of grower-exporters and co-operative exporters.

6.6.1 The Direction of trade of grape exports of Region I

Prominently the trade of grapes in Nashik is done by about 50 grape growers, one co-operative, two co-operatives affiliated to Mahagrapes & 5-6 dominant traders. All these exporters do trade of grapes from Nashik district to the European countries.

The following table highlight the export of grape of Nashik district

Country wise export of grape of Nasik district for the year 1999-2000.

Country		Export in M.T.
1.	U.K.	4299.301
2.	Germany	225.855
3.	Netherlands	74.921
4.	Hongkong	14.00
5.	Malaysia	35.420
6.	Kenya	1.012
TOTAL		4650.509

Source : Phytosanitary department of Nashik District.

The above data shows that in the year 1999-2000 out of the total grapes of 7105.847 tons to U.K., 4650.509 tonnes is exported from Nashik. This data shows that 65.44 per cent of grape are exported from Nashik district for U.K.

About 10 per cent of grape export to the Netherlands was exported from Nashik district out of total the Netherlands exports for the year 1999-2000. About 65 per cent exports to Germany was done from Nashik district out of total grape export to Germany for the year 1999-2000 (the source from APEDA shows that quantity of grape exported to the Netherlands and Germany was 733.35 tonnes and 344.645 m.tonnes respectively for the year 1999-2000).

However, some traders from Nashik have taken the Phytosanitary certificates from Mumbai, hence their data is not reflected in the above table. The supporting field study 2000-01 indicates that about 80 per cent of the trade of grapes to European countries is done from Nashik district. The field survey showed that about 45 per cent of the export to European countries is done by grape grower exporters from Nashik district. About 40 per cent of the exports to European countries is done by dominant trader exporters from Nashik, who are having a farm house of grapes along with cold storage and pre cooling unit.

6.6.2 Direction of trade of grape exports of Region-II

The Region-II covers prominently Sangali, Solapur, Pune, Latur, Ahmednagar and other grape growing region of Maharashtra. The export from this region is done by the co-operatives society. Out of the total 25 co-operatives, 15 co-operatives are affiliated to Mahagrapes (See Appendix -V). The co-operative grape societies included in Mahagrapes are from Sangali, Solapur, Pune, Latur, Ahmednagar, Dhule, Osmanabad, Malegaon Taluka of Nashik. Only two co-operative from Nashik are affiliated to Mahagrapes. The conclusion is that Mahagrape is having hold over the grape growing regions other than Nashik district. From the other ten independent co-operative grape export societies, only one is from Nashik district, while the rest are from region other than Nashik.

The following table makes the direction of trade of grape of co-operative export societies more clear.

Table 6.7

The grape exported by the Co-operative societies from Maharashtra state during the period 1994-95 to 1998-99.

Year	Export to European countries (m.tonnes)	Percentage share of amount of the total European grape exports
1994-95	838.61	11.04
1995-96	2085.5	21.27
1996-97	2361.24	18.37
1997-98	633.09	4.58
1998-99	920.89	16.85

Source : Maharashtra State Marketing Board, Pune. (See Appendix V)

The Co-operatives which are involved in export of grapes are –

1. Dyaneshwar Grape Growers Co-op., Society Ltd., Manjarwadi. Tal. Junnar. Dist. Pune.
2. Anand Grape Growers Co-op., Society Ltd., Dari. Tal. Nashik. Dist. Nashik.
3. Abhinav Grape Growers Co-op., Society Ltd., Agar. Tal. Junnar. Dist. Pune.
4. Vighnagar Grape Growers Co-op., Society Ltd., Narayangoan. Tal. Pune.
5. Krantisingh Grape Growers Co-op., Society Ltd., Walwa. Tal. Dist. Sangli.

6. Baramati taluka Phalotpadak Shetakri Sahkari Sanstha Ltd.,
Baramati. Tal. Baramati. Dist. Pune.
7. Mahagrapes

Source : Maharashtra State Marketing Board, Pune.

Table 6.8

Export of grape by Mahagrapes during 1994-95 to 1998-99.

Year	Export to European countries (m.tonnes)	Percentage share of amount of the total European grape exports
1994-95	544.61	7.16
1995-96	828.5	8.45
1996-97	709.24	6.64
1997-98	283.73	2.05
1998-99	805.91	14.74

Source : Maharashtra State Marketing Board, Pune. (See Appendix V)

On 19th January 1991, an organisation under the co-operative Sector was born in Maharashtra. The main idea being to export grape and bring prices to growers.

Organisation of Mahagrapes¹ :

The functioning of each individual society is supervised by the Chairman who is assisted by a Vice-Chairman and Directors. Mahagrapes affairs are managed by the Board of Directors, - a team of sixteen members, nominated by the sixteen society members from amongst themselves. All

policy decisions are taken by the Board of Directors. The Board of Directors in turn have nominated two prominent expert farmers as Executive Partners.

Co-operative societies which are associated with Mahagrape belong to Sangli, Pune, Solapur & Latur Region Mahagrapes accounts for about 2 per cent to 4 per cent of total grape exports. The Co-operative societies which work under the banner of Mahagrapes are² :

1. Shriram grape Growers-Co-op, Society Ltd., Pimpalgaon (B). Tal. Niphad. Dist. Nashik.
2. Kamdhenu Grape Growers Co-op. Society Ltd., Manerajuri Tal. Tasgaon, Dist. Sangli.
3. Baglan Taluka Grape Growers Co-op., Society Ltd., Satana. Tal. Satana. Dist. Nashik.
4. Latur District Grape Growers Co-op., Society Ltd., Latur. Dist. Latur.
5. Saibaba Grape Growers Co-op. Society Ltd. Sakuri Tal. Kopargaon. Dist. A'Nagar, Kopargaon.
6. Karmaveer Grape Growers Co-op., Society Ltd., Sakri, Dist. Dhule.
7. Khandoba Panan Sahkari Sanstha Ltd. Andur. Tal. Tuljipur. Dist. Osmanabad.

8. Poona Grape Growers Co-op., Society Ltd., Uruli Kanchan. Tal. Haveli. Dist. Pune.
9. Mogi Grape Growers Co-op., Society Ltd., Malegaon. Tal. Malegaon. Dist. Nashik.
10. Chaitnya Grape Growers Co-op., Society Ltd., Palus. Tal. Tasgaon. Dist. Sangli.
11. Shri Vital Grape Growers Co-op., Society Ltd., Kasegaon. Tal. Pandharpur. Dist. Solapur.
12. Malta grape growers Co-op., Society Ltd., Malegaon. Tal. Malegaon. Dist. Nashik.
13. Dhule Zilla Draksha Bagayatdar Shetakri Sangh Ltd., Dhule. Tal. Dhule. Dist. Dhule.
14. Siddeshwar Grape Growers Co-op., Society Ltd., Sawlaj. Tal. Tasgaon. Dist. Sangali.
15. Solapur Grape Growers Co-op., Society Ltd., Nnaj. Tal. North Solapur. Dist. Solapur.

This shows that 53 per cent of the co-operatives of Mahagrapes belong to Sangli, solapur, Latur and Pune region. 33 per cent of Co-operative societies of Mahagrapes belong to Malegaon (Nashik district), Dhule & Ahmednagar region. The conclusion is that Mahagrape enjoys a hold over grape growing regions other than Nashik district.

Table 6.9

Export of grapes by Abhinav Grape Growers Co-op., Society Ltd., Pune during the period 1994-95 to 1998-99.

Year	Export to European countries (m.tonnes)	Percentage share of amount of the total European grape exports
1994-95	120.00	0.71
1995-96	278.00	1.24
1996-97	277.00	1.31
1997-98	125.00	0.53
1998-99	114.98	0.99

Source : Maharashtra State Marketing Board, Pune.

Table 6.7, 6.8 & 6.9 explain quantity of grape exported by co-operative societies, Mahagrapes and Abhinav Co-op. Society of Maharashtra State during the period 1994-95 to 1998-99. The data show that the share of co-operative grape export for European grape export is about 15 per cent, out of which Mahagrapes contributes about 7 per cent of exports. However, only in the year 1998-99, the contribution of Mahagrapes to total European grape exports was 14.74 per cent out of 16.85 per cent of the total Co-operative societies European exports of Maharashtra. The data shows that Abhinav Co-operative society of Narayangaon has been doing about one percent of grape exports out of total European grape exports, without any breakdown.

The above co-operative grape export societies are doing trade with the European countries. Mahagrapes is also doing small amount of trade with Dubai.

The major amount of trade to U.A.E., Saudi Arabia, Bangladesh and other countries is done by trader exporters.

REFERENCES :

1. Information supplied from the office of Mahagrapes, Pune.
2. ibid
- Volumes of Export statistics for Agro & Food Products 1991-92 to 1999-2000, APEDA, New Delhi.

CHAPTER VII

PROBLEMS OF GRAPE EXPORTS

7.1 Introduction :

The grape export industry is in an infant stage. Prominently, the farmers were directly involved in it since 1991. The present study was to trace out the problems of the grape grower-exporters. Hence the problems faced by the grape growers were studied from 1991 to 2000. Similarly the problems of export administration and policy of Government was also studied. Each and every problem was new, without previous history. Hence diagnosis of the problem was a challenging and interesting task.

Prominently, the problems related with quality, packing material, transport importing middle agent, import duty, APEDA, ECGC, Plant quarantine department, Central Excise and Customs department, Infrastructure and RBI were dealt with. Moreover the problems of the European market are different from the problems of the Middle-East Market. The grower-exporters were interested in the export of grapes to European Market. Hence, intensive study of this market was done, as the present study was intended for grape grower-exporter.

7.2 Problem of Quality

There were good profits in the European Market in the early 1990's. The exporters discovered 'green gold' in this trade. Both the growers and traders wanted to make money without taking all necessary care of quality and packing. Some sub standard grapes were exported.

The Badhan¹ report observed that,

'Considering the experience of the export in the first year, merchant-exporters who had the capacity of investing funds constructed pack-houses along with pre cooling and cold storage facility, some exporters hired existing facilities of growers and started export of grapes. There was no control over these exporters regarding maintenance of quality and it resulted in total chaos in export of grapes to European countries in the year 1996. A maximum number of merchant exporters have incurred heavy losses. Except a few grower exporters and Mahagrapes, all exporters have lost heavily, the reasons are mainly due to

1. Bad quality 2. Mismanagement of demand and supply and 3. lack of coordination amongst the exporters. This resulted in dumping our produce in the European market where huge quantity of Chilean grapes were available to compete with our grapes. This situation considerably damaged the whole export industry'.

Dr. Patil, S.B² observed that,

‘The Chairman of APEDA also put forth before the house that there are some complaints of the quality of grapes exported.

Jagtap Balasaheb³ observed a dark future for Indian grapes in the European market, if quality standards are not maintained. Recently, there is inconsistency of grape exports & non observance of residue rules. There is a new entry of exporters during grape export season. Such exporters are not serious in their business, the effect of it will be on the whole grape export fraternity.

We shall than have to shut down this grape export business. To rise up to standards, we require years, but to lose it, we require just a day.

Gaikwad Jaywantrao⁴ observed that quality, reliability and excellence is a must for grape export. Any deficiency in quality will act as a hindrance for entry into the European market. This will result in an adverse situation for Indian grape export. Any one getting up and exporting grapes without knowledge of quality may create problems for future grapes exports. India has to learn lessons from Brazil, in this regard.

While explaining the significance of quality, **Ashokrao Gaikwad⁵** a exporter from Nashik, narrated his experience of recovery from Marks

and Spencer super market. In this particular super market there is recovery from the exporter, if grapes are not sold on the shelf.

The exporter will have to pay the market price to the importer of the unsold grape on the shelf, which would have been otherwise sold, if of good quality. However, such cases are very rare. The super market argues that if some other material would have been kept, on the shelf than they would have got a profit. They have to bear the cost of keeping the grapes on shelf, which are not sold because of its bad quality.

A personal interview with foreign importing agents revealed that the U.K. market is interested in the quality of grapes as prescribed by the super market. According to the importing agent the grape bunches should look like plastic bunches. This means that there should be similarity of berry size and colour in the bunches.

Indian grape has been successful in exporting the required quality of grapes as per European specification. The following trade enquiry proves it-

**A trade enquiry from UK received by APEDA is narrated below,
to highlight the choice for Indian grapes⁶**

'From Simon Allfrey, Mack Multiples Division, Kent we see India as a most important future supplier of table grapes. Mack multiples is keen to source from high quality suppliers in India and your company has been suggested. This will be our first venture into the importation of Indian grapes in order to complete our 12 months of the year programme with the U.K. supermarket chain.

We try to source early in order that growers may be able to gear their growing & thinning techniques in such a way that it encourages the production of fruit that reaches our specifications. The standard of bunch size is 250 g – 750 g. As I am sure you are aware the U.K. supermarkets require a specialist product but pay premium prices.

Please let me know details about your company in terms of its volume turnover, size and pack-house facilities as well as the varieties you grow & dates from which they will be available'.

This is enough proof to show that export quality of grapes are available in India. However sub standard export of the grapes creates problems.

In the foreign market every Indian exporter has an 'Indian identity' rather than a personal identity. The sub standard grapes exported by some exporters resulted in a bad name for the whole Indian grape exporter's fraternity. Earning a good reputation requires years but losing a reputation requires just a day.

7.3 The problems of packing material⁷

The packing material generally consists of corrugated box, a bubble sheet, poly-pouches, poly-liner and sulphur-pad wrapped in a tissue paper. Prominently the problems are with the quality of box and poly-pouches. Only recently there is demand by European market to use imported grape guard paper.

7.3.1 Box : The packing paper is imported from South Africa and then made into boxes. Presently the exporters are paying Rs. 27 per box. The sales tax on this box is 8 percent, the paper industry shifts it on to the exporters. Currently it is difficult to reduce this cost, as boxes made from Indian paper is not acceptable in the European market.

7.3.2 Poly-pouches : Upto the year 1998, using local pouches was not a problem in the European market. But from 1999, the European Super markets are insisting, on the use of Spain pouches.

The Spanish pouches are really of excellent quality without any folds. The Indian pouches are not up to the international standard as certain chemical (trade secret) is not available in the country. The price of single Indian pouch is 70 paise, whereas, the Spanish pouch is Rs. 1.50. Thus there is a difference of 80 paise, for one pouch between Indian and Spain pouch. Generally 9 pouches are packed in the box of 5 kg, hence this makes the difference of 80 paise x 9 pouches = Rs. 7.20 per 5 kg box. Reduction of this Rs. 7.20 is difficult, until we produce quality pouches.

7.3.3 Grape guard paper :

The super markets are recently demanding Chilean Grape guard paper. However the local grape guard paper is also in demand. The only condition is that it requires recognition from the international body in Geneva. More over the Indian grape guard paper is also expensive. The difference between Indian and Chilean grape guard paper is of 0.50 paise only. The difference of 0.50 paise per box for grapes guard paper is not a very big amount. But the compulsion made by super markets of using foreign grape guard paper causes

loss to Indigenous producers and unnecessary surrender to super markets instructions.

7.4 Transport Problem ⁸ :

The journey of grapes starts from vineyard to cold storage and from cold storage to Mumbai port.

The following are problems as far as transport is concern.

7.4.1 Rent of refer container :

The rent of refer container is more in India because the refer container comes to India empty from abroad. Hence, the company covers the rent of one side, which has traveled empty. India being an agricultural country, there is no possibilities of any imports of agricultural goods in the refer container from Europe. Hence the refer container will always come empty from Europe. However, the refer container rent has been negotiated. In 1991 it was \$ 5950 and in 2000 it was \$ 4200 and in some cases \$ 3800 per container.

7.4.2 Driver's Problem :

Till 1994, there were problems with some drivers of the refer container. These drivers used to put off the generator of the refer container for saving petrol or fuel, thus, breaking the cooling chain. This causes damage to grapes. Because of this one man was sent

along with the driver for keeping a check. This unnecessarily increased the expenditure of the person accompanying the driver till the port.

However nowadays a temperature recorder is inserted in the refer container, which shows a continuous graph of the temperature changes. Any mischief on the part of the driver is immediately recorded on the Ryan recorder.

While highlighting the significance of a Ryan recorder, during the field survey, an Exporter, Shankerrao Pingle of Nashik, said that once, their company had loaded grapes with all responsibility on the shipping company. However, one container was rejected due to spoilage of grapes, because of rising of temperature to 14°C . The Ryan recorder proved this. The shipping company paid Rs. 1.5 lakhs, due to their negligence. Hence, the Ryan recorder, which cost Rs. 1500/-, is very important for making claims due to negligence of the shipping company.

7.5 Problem of Importing Middle agent⁹

The structure of the middle agent is well defined in the European market. The grapes are sold to the final consumers in the super markets in Europe. These super markets buy grapes only

through the importers appointed by them. Generally the importing companies have their local office in Nashik. They appoint some local official in the local office through out the year. The communication of the local official with the foreign importing agent is by phone, fax and now a days via the internet. The foreign officials of the importing agent visit the vine yards right from the month of January.

The following are the problems of the middle agent :

7.5.1 Power to give certificates of quality :

The work of quality check-up is done by the quality control inspection department of the super market. The grapes are graded as A, B & C. Grade A grape goes to the super market, Grade B grapes are placed in the whole sale market & Grade C grapes are thrown away directly. The foreign middle agent has his own discretion of keeping some grapes of supermarket quality with himself. The foreign middle agent may give a few certificates of whole-sale quality (though of super market quality) to the exporters. This is not within the reach of the exporter. Keeping our man continuously with the foreign middle agent is not possible as it hurts his ego and also does not look good. There is also a strong

demand of certificates of destruction of bad quality grapes by the exporters from the foreign middle agent.

7.5.2 Problem of dispute regarding rate and quality in foreign market :

The real problem is in the wholesale market in the foreign market. The foreign middle agent has control over this wholesale market. Suppose the box is sold for £ 5. The middle agent will give the exporter £ 2 only and the rest £ 3 he may keep with himself as personal gain. The foreign middle agent purposely keeps some boxes of super quality to be sold in the whole-sale market.

After all the middle agents mentality is the same throughout the world. Hence, there is always a dispute regarding rate and quality, specially in the whole sale market.

7.6 Problem of Import Duty¹⁰

The import duty on grapes in the European markets has been reduced from 18 percent to 12 percent. But still the per kg export cost of grapes increased by Rs. 7/8 per kg due to this import duty. This amount is significant.

Though the import duty on Indian grapes is gradually going to be reduced, still our competitors like Chile have negligible import duty in the European market.

This problem must be solved at the Central Government level. Though there are hopes of reduction of this import duty in the future because of the WTO pact, but still if we can reduce this export cost right now, then the exporters can survive and grow in this export business. Immediate reduction of this import duty is the need of the hour for the survival of the grape export business.

7.7 Problems at the Govt. level¹¹

Government institutions like APEDA, ECGC, Phyto-sanitary Department, Central Excise & Customs Department, Marketing Board and RBI are involved in export of grapes. Each department have to deal with the problems of grape exports in their respective capacity.

The following organizations represent the government in exports :

7.7.1 APEDA :

APEDA stands for the Agricultural and Processed Food Products Export Development Authority. APEDA is an ⁰⁰⁰autonomous organisation attached to the Ministry of commerce of the

Government of India. The main function of APEDA is to build links between Indian producers and the global market. APEDA undertakes the briefing of potential sources on government policy and producers. Along with providing referred services and suggesting suitable partners for joint ventures. Besides arranging buyer seller meets.

We have the APEDA symbol on every box of India, whether grower, trader or cooperative, for Indian identity.

The APEDA is a facilitator for agricultural exports. As a facilitator it gives various types of subsidies.

1. Subsidy on packing material :

During the field survey 2000-2001 a subsidy of Rs.4/- per box is given by APEDA and the maximum limit for this subsidy was One lakhs Rupees (Rs. 1,00,000.00). This subsidy was 30 percent of the cost of packing. However, Rs.4/- per box subsidy was calculated at old prices.

At present 30 percent of the cost of packing as subsidy means much more. Hence according to the exporters the subsidy on boxes should be increased and maximum limit of subsidy should also be raised.

The APEDA tells the exporters to bring many* documents to claim subsidy. The exporter wants claim of subsidy against one document of shipping. The quality of boxes is to be tested by the Indian Institute of Packing, Mumbai before March end. Testing of boxes after that time, disqualifies the exporter from claiming subsidies.

2. Subsidy on cold storage

The subsidy on cold storage can be claimed from APEDA, WMDC & NCDC. The export oriented co-operative societies can claim subsidies from NCDC. However, all exporters can claim subsidies from APEDA and WMDC.

Most of the grower-exporter reported that they did not receive any subsidy on cold storage from APEDA. For claiming subsidy the unit must be registered as 100 percent E.O.U. However, most of the grower-exporter got subsidies on pre cooling units.

3. Need for market survey

APEDA should give market information, market rate forecasting of competitor, of first hand. In March and April we

* List of documents given in Appendix-VI.

have the European market. But there is a need to study new markets in January, February and May. APEDA staff is official in nature and attitude. They do not have sufficient practical knowledge. Hence, a joint survey by APEDA official and grape grower to a foreign country is necessary. Moreover the market promotion measures of APEDA, appear good and attractive only on paper and in file.

7.7.2 Export Credit Guarantee Corporation of India Ltd.¹²

ECGC is a Corporation set up by the Government of India for providing export credit insurance and guarantee facilities to India exporters. It functions under the administrative control of the Ministry of Commerce and is managed by a Board of Directors comprising of representatives from the Ministry of Commerce, Ministry of Finance, Reserve Bank of India, Export-Import Bank of India, commercial banks, General Insurance Corporation and export trade.

ECGC is essentially an export promotion organisation, seeking to improve the competitive capacity of Indian exporters by

giving them credit insurance and guarantee support comparable to those available to their competitors from most other countries. It keeps its premium rates at the lowest levels possible.

The Need for a policy

Payment for goods shipped by an exporter is open to certain risks, unless the payment has been received in advance or is supported by an irrevocable Letter of Credit confirmed by a bank in India. Failure of a large payment can wreck an exporter's business.

In any case, the existence of the risks and the exporter's knowledge of their existence, may make him adopt a very cautious attitude towards new business. Orders, which could have proved beneficial, may be given up because of excessive caution.

An ECGC Policy is designed to protect exporters from losses that may rise due to a variety of commercial and political risks which are beyond their control. Backed by this insurance, an exporter can expand his business by taking on new buyers, entering new markets or by taking up new products.

Risk covered under the policy :

Under the Shipments (Comprehensive Risks) Policy, the Corporation covers, from the date of shipment, the following risks :

Commercial risks :

- **Insolvency of the Buyer.**
- **Failure of the buyer to make the payment due within a specified period, normally 4 months from the due date.**
- **Buyer's failure to accept the goods, subject to certain conditions.**

Political Risks :

- **Imposition of restrictions by the Government of the buyer's country or any Government action which may block or delay the transfer of payment made by the buyer.**
- **War, civil war, revolution or civil disturbances in the buyer's country.**
- **New import restrictions or cancellation of a valid import license.**
- **Interruption or diversion of voyage outside India resulting in payment of additional freight or insurance charges which cannot be recovered from the buyer.**
- **Any other cause of loss occurring outside India, not normally insured by general insurers and beyond the control of both the exporter and the buyer.**

Risk not covered :

- The policy does not cover losses due to the following risks :
- Commercial disputes, including quality disputes, raised by the buyer, unless the exporter obtains a decree from a competent court of law in the buyer's country in his favour.
- Causes inherent in the nature of the goods.
- Buyer's failure to obtain necessary import or exchange authorisation from authorities in his country.
- Insolvency by default of any agent of the exporter or of the collecting bank.
- Loss or damage to goods, which can be covered by general insurers.
- Exchange rate fluctuation.
- Failure of the exporter to fulfil the terms of the export contract or negligence on his part.

Shipments on consignment basis

- Shipments which are made to an overseas agent, under an agreement that he will receive the goods as agent of the exporter and remit the proceeds on their being sold by him, are excluded

from the scope of the Policy. However, if an exporter wants it, the Corporation can get them included under the Policy. Only political risks will be covered on the agent, but comprehensive cover can be given for the ultimate buyers, if sales are effected to them on credit basis.

Problems related with ECGC¹³

E.C.G.C. gives covers only on invoice value. But there is already a guarantee of payment on invoice value. Thus, E.C.G.C. is giving security on security. For example there is invoice value of £ 2.5 to £ 3. This amount is received by the exporter from the importer, after receiving the documents. The remaining amount is sent according to the market prices. The exporters want security on this remaining amount. But the E.C.G.C. is not ready to give security cover of guarantee on this amount. But in actual practice there is no guarantee of how much prices we can get for the remaining amount. Suppose it is decided to give £ 8 per box. The sale receipt of £ 8 cannot be given in advance because the price depends on demand and supply conditions at that particular moment. If sale receipt for the sake of E.C.G.C. convenience is given £ 8 and in actual practice we get less than £ 8 due to market

condition, then in such case it faces problems with FEMA. This situation is beyond the reach of the E.C.G.C. This problem is very difficult to solve. Most of the grower-exporters are not the members of E.C.G.C.

7.7.3 Clearance of container from plant quarantine dept.

The phyto-sanitary certificate is one of the most important documents required, along with the documents of export consignment. Plant Quarantine Dept., Govt. of India has delegated these powers to the Commissioner of Agriculture, Department of Agriculture, Government of Maharashtra and Commissioner of Agriculture has further delegated powers regarding Phyto-sanitary Certificates to Pune, Sangli, Nashik and Solapur base of officers.

A) Role of District Superintendent Agriculture/ Horticulture Office¹⁴

1. Each concerned Agriculture/ Horticulture Office examines the certificate of residue analysis received from the farmer/exporter and suggests the control/corrective measures in terms of do's and don'ts for grape cultivation along with the details of defects commonly found in grapes and their remedies.

2. District Superintendent Agriculture/ Horticulture Office organizes meetings with farmer/exporter regularly and provides adequate guidance to them.
3. Wide publicity is made for use of only registered pesticides for grapes. Information on active ingredients of new pesticide products available in the market is given.
4. Inspection of cold storage facilities, packing and dispatch centers in case of exporters is carried out prior to the start of activity and during the period of actual dispatch.

B) Role of phyto-Sanitary Certificate (PSC) issuing authority.¹⁵

1. PSC authority examines the test and the reports of the pesticides issued by the laboratory and Agriculture/ Horticulture Officer, respectively. The officer also prepares a weekly report as per the format.
2. The PSC authority does not issue Phyto-Sanitary Certificate in absence of the test report printed on green paper (in original) issued by the nominated laboratory or in case, the sample is found to contain pesticides exceeding the MRL's prescribed by the importing country or by APEDA.

3. The PSC issuing authority, while issuing the PSC, also returns the white copy of the test report after making an endorsement.

Dr. Patil S.B¹⁶. notes that,

The vital problem is that the quality controllers who inspect the produce are very few and mostly stationed at the headquarters, which are away from the container loading stations. During the export period, as rush is heavy, they find it difficult to reach the container loading stations, which are in the interior and away from the controller's headquarters.

The Badhan Report¹⁷ says that, there is hardly any complaint from exporters about getting phytosanitary certificates.

The present survey revealed that there were no complaints about Phyto-Sanitary department from the grower-exporter.

7.7.4 Clearance from Central Excise and Customs Department

The rule of Central Excise and Customs department in grape exports are :

1. **Cess Levy :** Grapes comes under non-excisable Agricultural product. These grapes are primary products from the farm and not processed, hence there is no excise duty on grapes. But there is a central Govt. Cess of 1 per cent of the FOB value of grapes. Cess

is a sort of a levy of the Central government. The intention of the central Government in collecting such Cess is to utilize it for welfare schemes for the workers in the respective field. For example the Cess collected from grapes will be utilized for the welfare of grape labourers welfare.

According to the Produce Cess Act, 1966 (Act No. 15 of 1966). An act to provide for the imposition of Cess on certain produce for the improvement and development of the methods of cultivations and marketing of such produce and for matters connected therewith.¹⁸

2. Supervision

The important role of Central Excise and Customs department is in Supervision of Stuffing of Cargo (Grape) into the container. This supervision is carried out by the Central excise and customs Officer. This facility is provided at the point where the exporter wishes to dispatch his goods. It may be at the farm or at the packhouse.

The Service is provided around the clock in view of the perishable nature of the Cargo. The role of the Central Excise and

Customs Department is to check whether the goods are stuffed as per the invoice.¹⁹

Dr. Patil, S.B.²⁰ notes that

To obtain the excise certificate, the excise inspector requires a notice of at least 15-20 days in advance for the container inspection. Otherwise, they charge heavily or demand extra money for the clearance.

The Badan²¹ report says :-

There are several serious complaints regarding central excise department.

Since exporters are loading containers at Pack houses, it is required to complete excise departments formalities at the site only. Before loading any produce in the container, an inspection of empty containers is a must by central excise department's officers. And the loading operation of containers must be carried out under the supervision of the officers of the Excise department. And finally they seal the container, so that it is not opened again at the seaport.

At present this formality is being completed by the superintendent of the central excise department by their respective circle staff. Access to these officers is very difficult. Before

loading the containers, the exporter has to inform the central excise office. This office is generally located at District/ Division place, which is far away. In case of Latur area, an exporter has to go to Nanded which is to 200 km. away from the pack house. To bring these officers to the site, special arrangements are to be made. This itself is a big job for exporters. Sometime exporters spend more time in completing this formality than in procuring grapes. A number of exporters were complaining about these officers and requesting that some solution to this problem should be worked out and they should be relieved from harassment by the officers of central excise.

The above study report was conducted in 1997. The present survey noticed that excise officials are ready to work at odd hours of the day and 'small hospitality' is voluntary extended by exporter to excise officials on humanitarian grounds.

Most of the exporters have no complains about the excise and custom department. The officials of this department work at odd hours of the day. Hence minimum hospitability to the official is the moral duty of the exporter.

7.8 Problems of Infrastructure

Cold storage, electricity and roads are the pillars of infrastructure for grape exports.

7.8.1 Cold storage :

Gaikwad Jaywantrao²² writes that to build a cold storage, the exporters first have to take permission from Central Government Cold storage authorities and thereafter a license is to be issued regarding building the cold storage.

In this regard,

1. The electricity board first demands the permission letter of the cold storage.
2. On the other hand the cold storage authorities demand, the permission letter of electricity board. Much energy of the exporter is lost in moving between the cold storage board & Electricity board.

The cold storage is closed down from the 2nd week of April to the first week of March of the next year. For this period of 10 months-a -minimum electricity bill of Rs. 3000/- per month is to be

paid. The utilization of the cold storage for the rest of the ten months must be studied.

7.8.2 Roads²³ : All vineyards are located in the rural areas. The condition of the roads is not good in the rural areas. Also the highways to the port are not smooth.

Bad road conditions cause bruising of grapes especially those which are placed at the bottom. These grapes are rejected in the European market.

Prominently the grower-exporters and the co-operative exporters were surveyed. The grower-exporters have their cold storage with pre-cooling unit in the garden itself. Hence, the problems of the roads is reduced, as some cushion is available to the grapes right from the cold storage to the Mumbai Port.

However, the trader and co-operative exporters have their cold storage located at a distance of 2 km to 10 km from the vineyard. Bad roads of rural areas may cause damage, like hair size cracks to the grapes, during the journey from farm to cold storage. These cracks are not visible for 2 months. If such cracks are noticed after two months, then they are unsold in the foreign market.

7.8.3 Problem of Electricity²⁴ :

Communications, Power and Irrigation are the Pillars of Grape exports infrastructure. They are the economic overheads necessary for this business. Power (Electricity) is required for cold storage as well as pre-cooling unit. Any break in it, breaks the cooling chain. This causes damage to grapes.

Power is important among the above three economic overheads as 1] Nowadays communication is done through the internet, which requires electricity and 2] without electricity water (irrigation) cannot be lifted either from the minor or major irrigation projects. The life of grapes is increased due to pre-cooling and cold storage, which is possible only because of electricity.

Electricity should be continuous for at least one and half months during the export season. Moreover, due to the shortage of electricity, there is load shedding every day during the export season only. The rural area is affected more during load shedding.

According to the note of Commissioner of Agriculture²⁵, Pune, the cold storage unit should get some subsidy on electricity on the lines of poultry farm (Re. 1 per unit).

According to exporters, the condition of freshness and the health of the grapes depends only on this electricity supply. The load shedding, forces the use of the generator. Due to the shortage of electricity, there is load shedding for five hours, in the export season only. There is a priority of load shedding in the rural areas, where most of the cold storages are located. Hence, exporters have to keep the generator on for 3 to 5 hours during load shedding.

The loss due to load shedding to the exporters can be illustrated as follows²⁶ :

For example, if load shedding is for 5 hrs., then the cold storage requires the diesel of 50 to 55 liters per day (Cold storage of capacity of 30 tonnes).

Per days expenditure = 50 lit. x Rs. 20/-(diesel per lit.)

= Rs. 1000 per day

Or

= 55 lit. x Rs. 20/-(diesel per lit.)

= Rs. 1100 per day

for 45 days = 45 x Rs. 1000/Rs. 1100

= Rs. 45000 to Rs. 49500 for a season +

normal electricity charges

This increases the export cost of the grapes. Hence the necessity of supply of 'top priority' electricity by M.S.E.B. to grape exports cold storage.

Also the cold storage is closed for 10 months, but still for this period a minimum electricity bill of Rs. 3000/- per month has to be paid.

7.8.4 Problem at the port

The Port is committed to meeting the needs and expectations of its customers through²⁷ :

- Continued improvements in all performance parameters
- Security and safety of Life, Equipment and Cargo
- Protection of Environment
- Training and Motivation of Personnel
- Courtesy to Customers

The refer containers are sent through the Jawaharlal Nehru Port which is located within the Mumbai Harbour on the west coast of India and Mumbai Port trust which is situated almost mid way along the west coast of India.

There is a shortage of refer containers during the peak season of export. During export season there is a rush for refer containers at the JNPT.

Gaikwad Jaywantrao²⁸ notes that, many containers are lying at the port for the several hours. Actually after reaching the port, the container should depart to their foreign destination within 24 hours but this does not happen, hence losses of the cargo.

According to an exporter, during the field survey, there were losses in 1996 because many containers were sent from India to Europe. There was scarcity of plug system at JNPT Port. Due to this many refer containers were un-refrigerated at the port. Hence the break up in cooling chains, because of which the grapes were spoilt. Hence, this causes the problems of quality of grape in the London market.

Dr. Patil, S.B²⁹. notes that

In respect of 'Grape Export' there is always a heavy rush of containers loaded in the month of April 2nd week or 3rd week. But as the container-loading programme at the port is already fixed, the loaded containers are retained at the platform of the dockyard for a

long time. Since grape is a perishable commodity, its fast movement is required.

It was also noted that at the shipyard, where the containers are loaded in the ship, the existing arrangements for connecting the containers to the power point become problematic as the containers from the U.S.A., European countries or the middle east have different types of plugs provided for the power connection.

The above problems at the port may cause damage to the grapes, which ultimately result in sub standard quality of grapes. This results into a bad name for Indian grapes in the International market.

7.9 R.B.I.G.R. Regulations for perishables produce export

An exporters who has sent goods outside the country, has the obligation to satisfy the Reserve Bank of India that he has received payment from his overseas buyer. The government does not allow any exporter to export for any other consideration. The exchange control regulations require all the exporters to³⁰

- a. Make a declaration on the prescribed form to the Collector of Customs that foreign exchange, representing the full export

value of the goods, has been or will be disposed of in the manner and within the period specified by the RBI;

- b. Negotiate all shipping documents, including those relating to sales on consignment basis, through authorized dealers;
- c. Receive payment by an approved method; and
- d. Surrender the foreign exchange received from exports to the exchange control authority through authorised dealers.

Exporters are required to realize the foreign exchange proceeds of exports within the specified period. If the exporter has any genuine difficulty in obtaining it, he must seek the permission of the Reserve Bank for the extension of the time limit. It is up to the exporter to prove that the delay, if any, has not been caused because of his own fault or negligence.

Exchange control regulations require an exporter to fill certain specific forms and submit them to the customs authorities.

The information sought in these includes the full value of the products that are exported and such other particulars as the names of importers and their bankers, deductions by way of commission, etc.

According to Mahagrapes³¹, generally export trade of perishables is on consignment basis i.e. realization proceeds are based on sale prices at the time of marketing. More often than not this is at variance (lower) with the invoice value, which does not fall within the 10 percent, allowance in fluctuation of invoice value allowed by the R.B.I.

A bank official reported that, during the field survey regarding the G.R.Forms to be submitted to the RBI, the Bank faces a problem on account of variation in the consignment price value quoted and actually received. The realized value some times falls short. If the amount received is less than the invoice value, then the exporters have to face the FEMA Act.

Moreover such problems are observed only occasionally. Such problems were noted in the years 1996 & 2000. In these years the required rate was not received from the importers. However till now the RBI has not taken action in such cases.

The RBI has suggested shipping freight in Indian Rupees. This according to the RBI would save Rs. 25000/- per container. This suggestion of the RBI is correct from its objective point of

view-to Pay in Indian currency as far as possible. This saves the scarce foreign exchange resource³².

However most of the exporters do not want to follow this suggestion. According to them, the shipping amount is a major amount of the export marketing cost (almost one pound sterling) for 5 kg box. They not only get temporary relief from payment of this ship freight, but also a significant amount of export marketing cost is recovered in advance, if this amount is paid by the importing agent. This gives the exporters peaceful sleep till they get the remaining amount.

Even if the importing agent adds a margin towards the shipping bill, the exporters are ready to pay this amount.

Hence the RBI's suggestion regarding payment of shipping bill in Indian Rupees should remain only a suggestion. It should not be made compulsory in the interest of the grape exporter. It should be optional for the exporter to adopt it or not.

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8. PROSPECTS FOR GRAPE EXPORTS

8.1 Introduction

The history of grape cultivation proves that the grape is not the fruit of the Indian soil. The cultivation practices adopted by the farmers are different from the native land of grape crop. In India, pruning of grape crop is done twice, namely in October and April, whereas, pruning is done only once where grapes grown naturally.

Despite grape not being a natural crop of India, the farmers of India have made available their grapes to the European and Gulf Markets. There is export access-window available for about four to five weeks in the month of April-May for marketing Indian grapes in the world market. Nowhere in the world are grapes harvested, except in India during this period. This access to European markets is the prospects of grape exports for India. The grape exporters must cash this opportunity. In order to study the prospects of this opportunity, it would be appropriate to classify the world into three grouping viz. Europe, Middle-East countries and South-East Asian countries.

8.2 European Market :

The Europeans have a life style of eating table grapes after meals. Hence, the shortage of these table grapes during April-May, increases the demand for Indian grapes. Grapes have been exported in the past decade

to counties like United Kingdom, the Netherlands, Germany and Belgium. The data from table 6.1 shows that U.K. and the Netherlands account for about 50.46 per cent and 5.21 per cent share of Indian's grape exports respectively (99-00 fig.). The grape exports share to other countries of Europe was less than one percent in the decade 1991-2000. Moreover the exports to these countries was not continuous, except that for Germany. The U.K., the Netherlands and Germany are potential markets for Indian grapes in the European market.

8.2.1 Problems of trend forecasting :

Grapes are sold on free-consignment basis in the European Market. The grape fruit is a part of a perishable produce in marketing, around the globe. There are no forward marketing possibilities for perishable goods to safeguard the value of the commodity for a long term. Also no forward planning of supply is possible, the supply is fragmented in an open economy. Therefore, the trend of supply market is impossible to predict. The trend analysis of demand for grapes also depends on several factors in the foreign market.

8.2.2 Trend analysis of grape exports

a) U.K.

Table 8.1

**Three-yearly moving average of grape exports to U.K.
during the period 1991-92 to 1999-2000.**

Year	U.K.	3 Yearly moving average
1991-92	271.586	-
1992-93	921.351	1295.69
1993-94	2694.133	3559.68
1994-95	7063.367	5841.26
1995-96	7766.089	7718.83
1996-97	8326.828	8624.55
1997-98	9780.74	7564.13
1998-99	4584.835	7157.14
1999-2000	7105.847	-

Source : Volumes of Export statistics for Agro. & Food Products
1991-1992 to 1999-2000, APEDA, New Delhi.

The three yearly moving average from the above fig. indicates an upward movement of trade to the U.K. market. The field survey of 2000-01 revealed that there were heavy losses in trade with U.K. in the years 1996 & 2000. The data shows that despite losses in 1996, the exporters

continued to export grape in increasing quantities to U.K., except for the year 98-99 where there was a breakdown. Though there was a breakdown of grape exports to U.K. in 98-99, the exporters earned profits in this year. The field survey revealed that non-availability of export-quality grapes in the year 1998-99 was responsible for the breakdown.

The trend shows that there was rapid increase in grape exports from 91-92 to 94-95 in export to the U.K. market. This was because the window of access for Indian grapes was discovered in the U.K. market in 1989-90. The exporters tried to cash on this window of 'green gold' at a galloping speed. However, the trade stabilized between 7000 m. tonnes to 8700 m. tonnes from 95-96 to 99-00, which is reflected from the three-yearly moving average in table 8.1. As India enjoys a natural advantage of this 'window', about 7000 to 9000 tonnes of grapes are certain to be exported in the next decade also. The consumers of U.K. as a need will require Indian grapes.

Moreover there are no problems relating to payment in the U.K. market. This is another bright side of the prospect of the grape exports. However, one experience of non-payment from the U.K. market is worth noting. Jaywantrao Gaikwad, an exporter narrated his experience. The foreign middleman of Indian origin phoned to Mr. Gaikwad regarding

importing grapes. This exporter in return told him to fax the quantity required and the rate. Accordingly the grapes were exported to London. But the importing agent suffered losses from these grapes. This agent did not return £ 4000 to the exporter.

The exporter went to London personally. One foreign importing agent of European origin suggested that the exporter must complain about non-payment to the 'Debt Collector'. The Debt Collector was informed about the non-payment on phone. The Debt Collector told the exporter to send the written proof of the fax of the quantity ordered from India, not from London. Accordingly, the exporter's friends from India were told to fax documents to the Debt Collector of London. There was no face-to-face introduction with the London Debt Collector. On his return to India after eight days, the exporter saw a letter and a cheque from the foreign agent of Indian origin. Such was the magic of the foreign Debt Collector. The reason for narrating this experience is to illustrate the fact that there are no payment problems in the U.K. market and if a rare case occurs, it can be sorted out by the Debt Collector. Whether this kind of thing is possible because the middleman was of Indian origin or due to the rivalry between Indian and European middle agent, might have helped in getting the recovery, is not very important. The important thing is the concept of

the 'Debt Collector' in the U.K. market, which helps to solve the non-payment problems, instantly.

Absence of non-payment problem increases the prospect of grape trade in the U.K. market.

b) THE NETHERLANDS

Table 8.2

Three-yearly moving average of grape exports to the Netherlands during the period 1991-92 to 1999-2000.

Year	Netherlands	Three-yearly moving
1991-92	-	-
1992-93	3.13	-
1993-94	184.39	249.34
1994-95	532.323	917.99
1995-96	2037.246	1638.68
1996-97	2346.493	2801.99
1997-98	4022.242	2416.01
1998-99	879.296	5634.66
1999-2000	733.135	-

Source : Volumes of Export statistics for Agro. & Food Products 1991-1992 to 1999-2000, APEDA, New Delhi.

The three-yearly moving average from the above fig indicates an upward movement of trade with the Netherlands market. There was rapid increase of trade of grapes from 1992-93 to 1996-97 in the Netherlands market. The 3 yearly moving average shows that trade increased from 249.34 tonnes to 2801.99 tonnes for the period 93-94 to 96-97. The three-yearly moving average shows that trade stabilized between 1878.22 to 2801.99 tonnes for the period 96-97 to 98-99. The moving average shows movement in the upward direction, except for the year 98-99. The data from table 6.1 shows that there was general breakdown of grape exports in the European market in the year 1998-99. The field survey explained the non-availability of export quality of grapes during this year. Hence there was a breakdown of grape exports to the Netherlands during 1998-1999.

The three-yearly moving average trends indicate that about 2500 tons of grapes are certain to be exported to the Netherlands in the next decade also. The Netherlands will import these grapes from India as a need. Nural Islam (1990) mentions that future prospects of horticultural exports of developing countries will depend predominantly on the growth of import demand, mostly in the developed countries. Developed

countries are expected to diversity their food habits in the future including consumption of horticultural products.

This shows that if the growth rate of G.D.P. shows an upward movement, then the exports are likely to increase in developed countries. In developed countries the growth rate of population shows a retarding growth rate. This can be explained from the table given below.

Trend in European population from 1990 to 2010.

Year	Population (thousands)
1990	721582
1995	727405
2000	727986
2005*	724722
2010*	719714

* Projected population.

Source : Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, world population prospects. The 2002 Revision and world urbanization prospects : The 2001 revision.

Most of the developed countries belong to the European continent. The trend from the above figure shows that there will be decline in the population, in the European continent.

Hence increase in the growth rate of G.D.P. will result in a spread over of this increase in national income on the stagnant population. This excess income might be diverted towards consumption of other horticultural products like grapes.

Table 8.3

Growth rate of G.D.P. of the Netherlands during the period 1991-99.

Year .	GROWTH RATE
1991	2.2
1992	2.0
1993	0.6
1994	3.2
1995	2.3
1996	3.1
1997	3.7
1998	3.7
1999	3.6
1991-99 average growth rate	2.7

Source : World Economic and Social Survey 2000.

Purposely, the data of the Netherlands is taken from the European export, as it shows sharp rise in the growth of real G.D.P. The U.K. real G.D.P. on the other hand has shown declining trend in the decade 1991-99. If the increase of real G.D.P. of the Netherlands continues, then the

export to the Netherlands is bound to increase in the next decade, more than the earlier prediction.

C. Germany :

Table 8.4

**Three-yearly moving average of grape export to Germany
during the period 1991-92 to 1999-2000.**

Year	Germany	Exports (percentage share in total grape export)	3 yearly moving average
1991-92	1.435	0.0128	
1992-93	18.775	0.1738	17.80
1993-94	33.203	0.2084	33.29
1994-95	47.92	0.2839	77.75
1995-96	152.130	0.6787	197.34
1996-97	391.988	1.866	324.714
1997-98	430.024	1.806	299.91
1998-99	77.729	0.67	284.13
1999-2000	344.645	2.447	

Source : Volumes of Export statistics for Agro. & Food Products 1991-1992 to 1999-2000, APEDA, New Delhi.

The table 8.4 shows that the percentage share of grape exports to Germany increased from 0.0128 per cent in 91-92 to 2.447 per cent in 99-00. The three-yearly moving averages of grape exports to Germany show

an upward movement. The sharp decline in 98-99 exports, is responsible for downward movement of moving average of exports for 98-99 and 1999-2000. There was a general breakdown of grape exports to Europe in 1998-99. The trend shows that there was a sharp increase in trade from 91-92 to 97-98. The trade increased from 1.435 tonnes in 1991-92 to 430.024 tonnes in 97-98. The moving average trend shows that trade has stabilized to 300 tonnes to 325 tonnes during the period 96-97 to 98-99. The trend shows that about 350 tonnes of grape would be exported to Germany in the next decade also. The field survey showed that the importing agents of Germany are directly involved in trade of grapes with India from the year 99-2000.

8.2.3 Threats in the Europe market :

a. Chile

Chile is our potential competitor in the European market. The grapes of Chile are available in the Europe market till the month of March. Moreover, Chile has a historical experience of growing grapes. The quality of Chile grapes meets the requirements of the European market.

However Chile is trying to accommodate its grapes in the access-window, which is available to India.

Table 8.5

**Production and export of grapes from Chile during the
period 1991-2000.**

Year	Chile grape Production (000 MT)	Exports (MT)	% of quantity exported
1991	1186	419203	35.34
1992	1141	428516	37.55
1993	1300	440748	33.90
1994	1449	458160	31.61
1995	1527	445818	28.99
1996	1630	513093	31.47
1997	1517	536423	35.60
1998	1642	558620	34.02
1999	1575	539640	34.26
2000	1651 F	676474	40.99

Source : FAO year books (Production) } 1991 to 2000
 FAO year books (Trade & Commerce) }
 F : FAO Estimates
 * : Unofficial figure

The table 8.5 includes the production and export of table grapes, as well as, wine grapes, it is sufficient to prove that production of Chile grapes has increased in the decade 1991 to 2000. As the production of

Chile grapes have increased, the exports of Chile grapes have also increased. However the export percentage of Chile grapes have remained constant between 30% to 35%, except for the year 2000, where it was 40%. This data gives a rough idea of Chile's production of grapes and its exports. The data also gives enough food for thought about the accommodation of Chilean grapes within the access-window available to Indian grapes in the European Market. (The thought of the problem of plenty of Chile grapes or dumping technique of grapes by Chile is the extension of the work of the present task). However this availability of Chilean grapes in the European market, causes reduction of price to Indian exporters. Mexico is also trying to cut into Indian access-window of grape export by exporting grapes to the European market by air. So Mexico grape is available in the European market in the 2nd or 3rd week of May.

b. Price Factor :

From the field survey, an American multinational company has taken over the management of the Asada Super market of London. They might use their MNC style of reducing prices. Because of this, the other super market will also reduce its price (forced to reduce it). The

American MNC's entry into the London super market is a threatening trend for Indian exporters.

8.3 The Gulf Market :

India has been exporting grapes to the Gulf countries like Bahrain, Iraq, Iran, Kuwait, Oman, Qatar, Saudi Arabia and U.A.E. However, the major share of Gulf export was to U.A.E. and Saudi Arabia. Table 6.1 shows that trade with U.A.E. has declined from 60.83 per cent in 1991-92 to 17.15 per cent in 1998-99. The trade with Saudi Arabia has declined from 16.91 per cent in 91-92 to 1.95 per cent in 1999-2000. Moreover, the trade with these countries has not only declined in percentages but also in quantity.

8.3.1 Threats to the Gulf Market :

There might be a set back for exports to the Gulf market. The prospects for export of grapes to the Gulf Market were good during Ramzan.

The following table will make it more clear :

Total exports to Dubai Market and exports during Ramzan Month from Mumbai Port Trust.

Table 8.6
Export of grapes to Dubai from MPT during the period
1991-92 to 1999-2000.

Year	Exports Period	Export in Kg
1991-92	14/01/92 to 22/05/92	4074232.35
1992-93	09/01/93 to 15/05/93	4604369.16
1993-94	12/12/94 to 14/04/94	4736952.41
1994-95	13/12/95 to 06/05/95	1833867.63
1995-96	30/11/95 to 16/05/95	700380.42
1996-97	29/11/96 to 31/05/97	1604674.58
1997-98	14/01/97 to 08/05/97	2189025.62
1998-99	03/12/98 to 12/05/99	3025832.70
1999-2000	24/11/99 to 15/05/2000	3504658.50

Source : Data collected from world trade center, Mumbai.

Table 8.7

**Export of grapes to Dubai during Ramzan window from MPT
during the period 1991-92 to 1999-2000.**

Year	Ramzan date	Ramzan month window for exports	Exports during Ramzan window in Kg
1991-92	5/4/92	3.3.92 to 31.3.92	2186445.50
1992-93	25.3.93	20.2.93 to 19.3.93	2528610.40
1993-94	14.3.94	10.2.94 to 10.3.94	3201601.78
1994-95	3.3.95	1.02.95 to 28.01.95	998401.58
1995-96	21.2.96	16.01.96 to 16.02.96	347186.22
1996-97	10.02.97	07.01.97 to 05.02.97	914340.46
1997-98	30.01.98	26.12.97 to 25.01.98	1512577.00
1998-99	21.01.99	15.12.98 to 16.01.99	921157.10
1999-2000	09.01.2000	04.12.99 to 04.01.2000	752877.00

Source : Data collected from WTC, Mumbai.

Table 8.8

Percentage quantity of grape exported during Ramzan to Dubai from MPT during the period 1991-92 to 1999-2000.

Year	Total exports in kg	Ramzan month exports in kg	% Quantity of Ramzan month exports
1991-92	4074232.35	2186445.50	53.66
1992-93	4604369.16	2528610.40	54.91
1993-94	4736952.41	3201601.78	67.58
1994-95	1833867.63	998401.58	54.44
1995-96	700380.42	347186.22	49.57
1996-97	1604674.58	914340.46	56.97
1997-98	2189025.62	1512577.00	69.09
1998-99	3025832.70	921157.10	30.44
1999-2000	3504658.50	752877.00	21.48

Source : Data Collected from WTC, Mumbai.

8.3.2 Methodology of study of access-window of Ramzan :

The data of grape exports to middle-east countries was collected from Mumbai, Port Trust. Information regarding date, quantity exported, destination and exporters was available from MBT. This data was collected through WTC, Mumbai Office. The major quantity of trade was with Dubai. Hence, total trade of Dubai was calculated from 1991-2000. The Ramzan dates of ten

years were traced out. Five days prior to beginning of the Ramzan month was taken as export dates and five days prior to Ramzan Id was taken as export dates. This was because of the duration of five days required by sea route to Dubai from Mumbai. In this way the export during Ramzan month was calculated.

The above tables 8.6,8.7 and 8.8 show that the Ramzan month for the years 1991-1998 varied between January and April. During this period out of the total exports to U.A.E. from Mumbai Port Trust, the exports during Ramzan period varied from 50 per cent to 69 percent. The future availability of excess window of Ramzan might not be available for Indian grape exporters. However even if trade of Ramzan might decline, the normal exports will continue in the Ramzan month windows, which were previously available. Trader exporters mostly do the trade to the gulf region.

The future possible dates of Ramzan are : The future expected dates are calculated by subtracting ten days from the current Id of Ramzan month from future years as follows :

2001	Nov., 17 to Dec., 17
2002	Nov., 07 to Dec., 07

2003	Sept. ^{oct} , 26 to Nov., 26
2004	Oct., 16 to Nov., 16
2005	Oct., 06 to Nov., 06
2006	Sept., 27 to Oct., 27
2007	Sept., 17 to Oct., 17
2008	Sept., 07 to Oct., 07
2009	Aug., 27 to Sept., 27
2010	Aug., 17 to Sept., 17

The harvesting months of grapes in India is from December to April. The major part of harvesting is done from February to April. The future dates clearly show that Indian exporters will not get an opportunity to export grapes during the Ramzan month.

Also trying to produce grapes during future Ramzan months, will require unconventional cultivation practices. Unconventional cultivation practices increase both the cost and the risk, as the grape is a highly tender crop. This is the dark side of the prospects of grape exports to the U.A.E. Market.

On the other hand the general export of grapes to the U.A.E. Market also declined.

The following table makes it more clear.

Table 8.9

**Three-yearly moving average of quantity of grape exported to U.A.E.
during the period 1991-92 to 1999-2000.**

Year	Exports in metric tones	3 yearly moving average
1991-92	6781.179	-
1992-93	5214.384	6248.32
1993-94	6749.393	5454.18
1994-95	4398.765	5333.41
1995-96	4852.077	4375.592
1996-97	3875.934	3886.23
1997-98	2930.696	2927.76
1998-99	1976.68	2909.62
1999-2000	3821.488	-

Source : Volumes of Export statistics for Agro & Food Products

1991-92 to 1999-2000, APEDA, New Delhi.

Table 6.1 shows that the share of grape exports-trade from 1991 to 1999 with U.A.E. has declined from 60.83 per cent to 17.15 per cent except in the year 1999-2000, which was 27.14 per cent . The three-yearly moving average also shows that the volume of trade with U.A.E. for the period 92-93 to 99-00 has declined from 6248.32 to 2909.62 m. tonnes. This decline continued without any increase. The declining trend

is likely to continue in the next decade also. Also the remuneration received from grape exports cannot be compared with the European Market. The method of remittance of money is not uniform. It depends upon the relations between the Importer and Exporter. The growers spend much time in producing grapes. Little time is spent on the actual business. On the other hand traders are full-time businessmen. Their main activity is only trading. Hence, traders are mostly involved in export of grapes to U.A.E. These traders have some set up in U.A.E. Along with other business they also do grape business.

The present study was for grape growing exporters. The trend shows declining prospects for grower-exporters for U.A.E. Market.

8.4 : The South-East Asian market.

The South-East-Asian market faces competition from Australia.

The distance of India & South-East Asian countries and Australia and South-East Asian countries by sea routes are as follows :

Table 8.10**Distance of Sea route to South-East Asian countries (Distance in nm)**

Country	From India	From Australia
Vietnam	3100	2867
Malaysia	2768	2594
Singapore	2456	2223
Sumatra	1567	1148
Java	2981	772
Indonesia	2845	1297
Philippines	3786	1720
Myanmar	1636	3340
Thailand	2138	3032
Laos	2456	2867
Cambodia	2456	3027

(1 nm =1.8 km.)

nm = nautical miles

Source : Projection Mercator
George Philip and Son Limited,
12-14 Long Acre
WC 2E 9LP, 3 dimensionnel map.

The above data shows that sea route is cheaper to Australia than India for reaching South East Asian countries like Vietnam, Malaysia, Singapore, Sumatra, Java, Indonesia and Philippines. Also Australian grapes are preferred more due to their garden fresh looks. This is because

of their high pre-cooling and cold storage technology. Moreover Australia is developed in Agriculture. Hence Southeast Asian market is difficult to capture for India. However, field survey reveals that Sonaka variety is preferred in Malaysia. Here people preferred sweet grapes according to exporters personal experience in Malaysia. The above table shows that only Myanmar, Thailand, Laos and Cambodia, are closer to India by sea route. But these are not the potential market for grape exports, as these countries are yet undeveloped.

8.5 New Thrust Areas :

- a. **Japan** : There is potential for the export of grapes to Japan, if there is assurance of absence of pesticide from the exporters. According to an exporter a consumer buys grapes at high prices from the Tokyo Market. The price is more, because of space problem in Japan.

b. Hong-Kong

Year	Hong Kong export	3 yearly moving average
91-92	0.360	
92-93	1.965	29.183
93-94	85.224	121.127
94-95	276.192	138.169
95-96	53.092	180.376
96-97	211.844	208.56
97-98	360.764	196.68
98-99	17.461	126.23
1999-2000	0.490	

Source : Volumes of Export statistics for Agro & Food Products

1991-92 to 1999-2000, APEDA, New Delhi.

The trend from table 8.10 shows that the export of grapes to Hong-Kong has been increasing from 1991-92, except for years 1998-99 & 1999-2000. The three yearly moving average show an upward movement of grape exports to Hong-kong. This opportunity of grape exports should be given due attention. Such small packets of trade are essential to diversify our trade.

- c. China is opening its economy to the rest of the world. China can be an opportunity for our grape exporters. However the payment guarantee in China will be early to predict.

8.6 The demand & prospects for grapes in local market

Table 8.11

Percentage share of exports of grapes of India during the period 1996-97 to 1998-99.

Year	Total production (000' m tons)	Total exports (m tons)	% of exports to total production
1996-97	1137.6	20999.29	1.85
1997-98	969.3	23808.12	2.46
1998-99	1082.7	11525.41	1.065

Source : 1. Indian Agriculture, Vikas Singhal Indian Economic Data, Research Centre, New Delhi, 2003, p. 239.
2. Volumes of export statistical for Agro and food products 1995-1996 to 1999-2000, APEDA, New Delhi.

The above data shows that about 2 per cent of grapes are exported out of the total grape production in India. The inference is that about 98 per cent of the total production of grapes is sold in the local market.

The present study is the case study of Maharashtra. The inferences of the increase in demand for grapes can be drawn out with the help of

data available from the grape production of Maharashtra State. The following table will make it more clear.

Table 8.12

The three-yearly moving average of Production of grapes from Maharashtra State during the period 1991-92 to 1998-99.

Year	Production (000'm tons)	Three-yearly moving average
1991-92	2861.1	
1992-93	3757.8	3553.9
1993-94	4042.8	4143.86
1994-95	4631.0	5198.23
1995-96	6920.9	6392.4
1996-97	7625.3	6715.57
1997-98	5601.1	6686.3
1998-99	6832.5	

Source : District-wise Agriculture statistical information of Maharashtra Part-II 1996-97 & 1997-98.

The above data shows that both area under grapes and production of grapes in Maharashtra have increased. The area increased from 4396 hectares in 86-87 to 26973 hectares in 98-99, while production increased from 5507.00 tonnes in 86-87 to 68325.00 tonnes in 98-99. The three

yearly moving average for production of grapes indicates an upward movement of production of grapes in Maharashtra.

This increase in demand for grape in the local market is due to non-availability of other seasonal fruits except oranges during grape season.

In recent years, a lot of interest has been evinced by the grape growers of India in the processing of grapes in order to add value to the produce and to reduce the marketing problems of fresh grapes, as the area under grapes is steadily increasing. The chief form of consumption of grapes in India is the fresh grape. However, grapes are also processed as raisin, wine and other alcoholic beverages and juice. The byproducts, which can be prepared from grapes, are as follows.

- a. **Raisins :** In India, raisins are made from Thompson seedless and its clones, namely Tas-a-Ganesh, Sonaka and Manik Chaman. Manukkas from Anab-e-shahi grapes are also made in limited quantities. The indigenous systems of medicine namely, Ayurveda and unani have described various uses of dried grapes. They are one of the major ingredients of the most popular tonic 'Chyavanprash'. Raisins (Kishmish) are chiefly consumed as dry fruit and preferably given to the convalescent patients. They are also used in the preparation of a variety of sweet dishes, desserts

and bakery products. The food value of raisins is mainly due to their composition with particular reference to sugars, minerals salts and Vitamins.

b. Wine making in India :

Wine appears to have been known in India from times immemorial. As quoted by Vyas (1970) during Vedic times, wine was intensively used and was known as Soma Rasa. The Ayurvedic treatise charaka samhita also refers to properties of Soma Rasa. In fact, Draksha sold by Ayurvedic pharmacies is nothing but poor quality crude wine mixed with some condiments.

Wine production appears to have an ancient origin in India, particularly, in the States of Jammu and Kashmir and Himachal Pradesh. Wine-making has been reported in Kashmir in the sixteenth century during the regime of Emperor Akbar.

The prospects and possibilities of wine-production in India require to be viewed from many angles, namely, possibility sales of wine within the country, its export potential, availability of raw materials, machinery and technical know-how.

Wine-production and marketing has a tremendous potential in India. This is, particularly, so when the trends in the consumption and

production of other alcoholic beverages in the country are considerable. At present, the annual bill for alcohol consumption in India is about Rs. 146 crores. Even if wine is able to capture 1 percent of the present market, it would amount to about Rs. 1.5 crores.

The field survey noted the following points relating to wine :

- a. It is necessary to market wine as a health drink. Most people think it is alcoholic.
- b. Regular alcohol consumers do not find wine intoxicating enough.

These factors limit the growth of wine industry in India. However, as far as its export potential is considered, we need not be very optimistic. A review of the world wine-trade indicates the chronic surplus in many countries. However, the demand for quality wines has continued to rise considerably. India has neither a tradition nor the experience in wine-making. Before any wines can be made for exports, Indian wine industry will have to be geared to the domestic market. Vinification techniques are required to be standardized and wine acceptable for local consumption needs to be prepared.

c. Grape juice :

Grape juice is mild, laxative and a stimulant for the kidney.

Different types of juice like unfermented grape juice, concentrated

grape juice, carbonated grape juice and blended grape juice can be prepared.

d. Canned Grapes :

Grapes are generally canned in combination with other fruits in salad and cocktail. However, only seedless varieties are used for this purpose.

e. Jams and Jellies :

Grapes contain 0.3-0.8 per cent pectin. Grape skin and pomace can be used for jam and jelly preparations.

f. Pickles : Grapes can be used to make good pickles. For the purpose, even the grapes that are thinned out in large quantities and can hardly find any other use, can be made use of.

g. By products :

There are a number of by products from grapes used in wine and juice industries. In the preparation of juice and wine, grape pomace (skin and seeds) and grape stems are obtained as waste products. If sufficient waste is available, this can be utilized for making a number of by-products.

The pomace from heated grapes is usually 15-20% . It is usually discarded. It is, however, suitable for stock feed, for the manufacture of such by-products as jelly, brandy salad oil, tannin and cream of tarter. The stems, which are usually discarded, can be used as a source of tannin and tartaric acid.

Prospects in Local market :

The future demand for both grapes & its by-products in the local market depends upon the real G.D.P. The trends of the real G.D.P. can be understood with the help of the table given below.

Table 8.13

Growth-rate of real GDP of India during the period 1991-99.

Year	Growth rate of real GDP
1991	2.0
1992	4.0
1993	3.9
1994	5.4
1995	6.7
1996	6.4
1997	5.3
1998	5.6
1999	6.1
1991-99 average growth rate	5

Source : World Economic and Social Survey 2000

The trend from table 8.13 shows that average percentage change of growth-rate of real GDP of India for 1991-99 is 5 per cent.

The Tenth-Five year Plan spells out a growth-target of 8 per cent with an ICCOR around 4.0. Obviously, this would require pushing up the investment rate to 32 per cent of G.D.P. But as per the CSO estimates, gross domestic saving in 1999-2000 was expected to be 22.3 per cent and gross domestic investment was around 23.3 per cent of G.D.P. This implies that foreign savings, despite all the incentives given to foreign investors was 1 per cent of G.D.P. The approach-paper accepts the fact that it would not be possible to mobilize foreign savings to fill this gap. It also does not consider mobilization of domestic savings sufficient enough for the purpose, to be feasible. It, therefore, opines that additional growth that is targeted in the Tenth Plan must, therefore, come from increased efficiency. This shows that in the next decade India will increase its real GDP if efficiency increases or else it will maintain the present growth rate.

Considering the present population of 100 crores, even after subtracting 40 per cent population who live below the poverty line, 60 crores of people are actually participating in the economy. If our real

GDP increases and people change their food habits, then local market itself will be a good market for Indian grapes.

However the present constraints faced by the local market are :

- a. 85 per cent of the total production of grapes is marketed for fresh consumption.
- b. 70 per cent of the total production is harvested during Feb-April.
- c. Highly perishable nature of grapes and
- d. Inadequate cooling chain.

If the above constraints are overcome then grape will have a good domestic market.

8.7 The need for grape exports

There is a need for grape exports because Indian grapes have an access-window available in the International market. Secondly, by producing good export quality grapes, the growers produce good local quality grapes also. Hence the growers get good price for local grapes as well. Thirdly to prevent glut in the local market as production of grapes shows an upward movement and real GDP growth rate movement comparatively slower, which might reduce prices in the local-market and lastly by exporting grapes there is some generation of foreign exchange reserves for the nation.

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CHAPTER IX

CONCLUSIONS & SUGGESTIONS

CONCLUSIONS :

1. The contribution of India to grape production in the world is 1.51 per cent and the area devoted to grape cultivation is 0.54 per cent of the total area in the world under grape cultivation (2000 fig).
2. Maharashtra has the highest area of grape cultivation and production in India. Maharashtra occupies about 63.38 per cent area of the total grape cultivation area of India. The grape production of Maharashtra is 63.02 per cent of the total grape production of India (1998-99 fig).
3. In Maharashtra, Nashik has the largest area under grape cultivation. The area under cultivation, of grapes of Nashik, Sangli, Solapur, Pune and Ahmednagar is 60 per cent, 20 per cent, 5 per cent , 3 per cent & 4 per cent, respectively, and the rest of the area is shared by Satara, Osmanabad, Beed, Latur, Dhule etc. The production of grapes in Nashik is also highest in Maharashtra. The production of grapes of Nashik, Sangli, Solapur, Pune and Ahmednagar is 54 per cent, 27.97 per cent, 5.26 per cent, 3.029 per cent and 3.41 per cent, respectively. Thus, Nashik is the 'Grape city' of India. However, the yield per hectare of grapes of Sangli district is highest in Maharashtra.

4. The field survey noted that the Gulf Market was discovered way back in 1975. The dispute between grape growers and '*dalals*', forced the farmers to sell the grapes to Muslim traders. The Muslim traders had links with the Gulf Market as some of their relatives were staying in the Gulf countries. Thereafter, the demand for grapes kept on increasing in the Gulf Market.
5. The field survey noted that the European Market for grapes was discovered in December 1989, due to the efforts of a farmer's personal visit to the London market.
6. For the first time in India, the grape growers were directly exporting to the U.K. market after the year 1989. The concept of 'grape grower-exporter' was introduced due to the efforts of the Nashik grape growers.
7. Pre-cooling technology was introduced in grape exports for the first time in the early 1990's. Prior to that the grape were exported without pre-cooling. However cold storage was in existence.

The study team of Marketing Board of Maharashtra State revealed during their study tour that the distance between Peru and London is 5619

nm, while the distance between Mumbai and London is 5084 nm by sea route. This shows that the sea route distance between Peru & London and Mumbai & London was almost same. Chile was successfully exporting grapes to U.K. This was because of the pre-cooling technology adopted by Chile for grape exports to U.K. Pre-cooling increases the life of grapes by 60 days. Hence, it was decided to import pre-cooling technology for exporting grapes to U.K. However, indigenous pre-cooling unit had already taken birth due to the affords of the grape growing association of Maharashtra before the survey of Maharashtra State Agricultural Marketing Board.

8. Certain clones of Thomson Seedless such as Tas-a-Ganesh, Sonaka, Manikchaman have become popular in Maharashtra. Sharad seedless is also popular. These varieties are exported to Europe and the Gulf Market.
9. The data shows that 90 per cent of the total quantity exported as well as about 90 per cent of the value earned from grape exports was from U.K., the Netherlands, U.A.E., Saudi Arabia and Bangladesh. These are the major countries to which grapes are exported.

10. About 0.75 per cent to 2 per cent of the total quantity of grapes was exported to countries like Bahrain, Germany, Kuwait, Oman, Qatar during the decade 1991-2000. This trade, though small in quantity, is significant, as it has been a continuous trade.
11. Out of the total grape exports, the share of grape exports to UAE declined from 60.83 per cent in 1991-92 to 17.15 per cent in 1998-99, while the share of Saudi Arabia declined from 16.90 per cent in 1991-92 to 1.95 per cent in 1999-2000. Not only the percentage share but the volume of quantity of grape exported by India to UAE and Saudi Arabia has also declined.
12. Out of the total grape exports, the share of grape exports to U.K. has leapt from 2.43 % in 1991-92 to 50.45 % in 1999-2000. Indian grape exporters are capable of producing the required quality of grapes demanded by the European Market. The quantity exported to the U.K. market increased from 271.586 m. tonnes in 1991-92 to 9780.74 m. tonnes in 1997-98. The quantity exported to the Netherlands market increased from 31.3 m. tonnes in 1992-93 to 4022.242 in m. tonnes in 1997-98. This increase in demand for Indian grapes in European market proves that Indian grape growers are capable of producing export quality grapes. Hence our

hypothesis that our grape growers have ability to produce export quality grapes stands established.

- 13. Out of the total grape exports, the share of exports to the Netherlands has increased from 0.28 per cent in 1992-93 to 16.89 per cent in 1997-98. The export of grapes to the Netherlands was 7.62 per cent and 5.20 per cent in 1998-99 and 1999-2000 respectively.**
- 14. The grape growing region of Maharashtra was classified as Region-I & Region-II. The Region-I covers Nashik as it covers about 60.29 per cent and 54.94 per cent of area and production respectively (98-99 fig.). Also, 80 per cent of grape export from Nashik is to the European countries. Due to late harvesting in this region, it has natural advantage of access window of Europe, which is from April 15 to May 15. There are more than 50 grower-exporters in Nashik district. 4 co-operatives (2 from Malegaon) are affiliated to Mahagrapes from Nashik, 5-6 Trader-exporters who do significant trade from Nashik were observed. Region-II covers Sangli, Solapur, Pune and Latur. It covers about 28.89 per cent of area under grape cultivation out of total grape cultivation area in Maharashtra. This region produces 36.26 per cent of grape production**

from Maharashtra (98-99 fig.). In Region-II the export is done by co-operatives. There is an absence of grower exporters in this region, except in Latur where three grower exporters were observed during the survey.

15. It is popularly said that if pruning is done on 2nd October in Nashik, Sangli & Solapur districts and observations are made a few weeks later, the following results occur.

Nashik district : The growth of grape berries is of the size of the
bajara grain. -

Sangli district : The growth of the grape berries is of the size of
groundnuts.

Solapur district : The growth of the grape berries is of the size of
horse gram. ('*Harbara*').

This shows that the growth of grape berries is slower in Nashik district as compared to that in Sangli & Solapur districts. This is due to the climatic conditions of Nashik district.

The temperature of Nashik, Sangli & Solapur areas are as under :

	Max.	Min.
Nashik	31.51°C	17.6°C
Sangli	42°C	14°C
Solapur	34.10°C	21.7°C

The table shows that the temperature of Nashik region is lower as compared to those of other grape-growing regions of Maharashtra. The lower the temperature, the slower is the growth of the berries. Generally, the harvesting season of Nashik region begins 15 days later than that of other grape-growing regions of Maharashtra.

The access to the European market available to Indian grapes, is from April 15 to May 15. Incidentally, Nashik grapes are harvested in the period from late March to April end. This gives an advantage to Nashik growers to cash on the European market access available for exports. Hence, most of the exports of Nashik district is to the European countries. Thus, our hypothesis that there is vast potential for grape exports from Maharashtra is established with respect to European market.

16. The trade of grape to Bangladesh fluctuated from 4.75 per cent to 8.24 per cent in the decade 1999-00. Moreover, trader exporters are engaged in trade with Bangladesh.

17. The field survey revealed that if the grapes are exported without European specifications then the entire grape industry will suffer, in the long run. The export markets of Europe have been developed with great effort. It is still in the infant stage. Building such markets requires years and losing them needs a day. Hence, in the interests of the nation, every exporter should voluntarily observe the quality requirements of the European market.
18. Recently, there has been a demand from the supermarket of London that our exporters should use imported poly pouches (Spain) and grape guard paper (Chile). About 80 per cent of the grower-exporters of Maharashtra surveyed, are using imported poly pouches. About 65 per cent of the grower-exporters that was surveyed, are using Chile grape-guard paper.
19. It is difficult to produce indigenous papers for boxes of the quality of South Africa. Similarly, it is difficult to manufacture poly-pouches of the standard of Spain, due to non availability of certain chemicals.
20. In field packing of grapes the step of transport of grapes to pack house through crates is skipped. The grading and packing of grapes is directly done in the vineyard. These boxes are then directly transported to the pack-house. There is no possibility of movement of grapes in the boxes

while the vehicle is in motion, in comparison with the transport of grapes in crates. If packed boxes are directly transported for pre-cooling and cold storage, less injury is caused to the grapes. This is an advantage of field packing. On the other hand, quality control is the disadvantage of field packing. In field packing, at a time, grapes of different gardens are packed; hence it becomes difficult to control quality. Also desired cleanliness is not observed in field packing. This method is followed by Co-operative grape export societies, as members of the society have grape farms at different places, while the cold storage & pre-cooling unit is at some other place.

21. In centralised packing, quality control becomes easy and cleanliness can be observed properly. In this packing the grapes are transported from vineyards to pack-house in crates. In this transport the skin of the grapes is likely to be affected because of bad rural roads. As a result the skin-affected grapes get spoilt or affected in cold storage. Also there is a possibility of drying of grapes, when transported through crates, however, if the cold storage is in the vineyard itself than centralized packing has all the advantages of packing. All the grape-grower exporters that was

surveyed have cold storage with pre-cooling unit in the farm itself. Hence, they get advantage of good packing.

As with the local middle agent so is it difficult to have control over the foreign importing agents. The attitude of the local as well as the foreign importing agent is the same. About 85 per cent of the grower- exporters that were surveyed subscribed to this opinion about the foreign importing agent. The survey revealed that the importing agents are interested in big bulks of 40 to 50 containers. They do not pay attention to small farmers. Moreover, the certificates of quality given by these importing agents are not reliable. The real problem with the importing agent is related to wholesale market, where he is having a control. It is in this market, the dispute of rate and quality occurs between the exporters and the foreign importing agent.

22. About 90 per cent of the grower-exporters that were surveyed claimed they did not receive subsidy on cold storage from APEDA. However, the subsidy on pre-cooling unit was availed by them. Also subsidy on pre-cooling and cold storage was availed by all the co-operative grape-exporters that were surveyed.

23. In the survey, it was noticed that there were no complaints from the grower-exporters about the Central Excise & Customs Department and Plant Quarantine Department.

The Excise Officials are ready to work at odd hours of the day, due to the perishable nature of the goods and hence 'small hospitality' is voluntarily extended to grower-exporters on humanitarian grounds.

24. Many documents are demanded by APEDA from grape exporters, while giving them subsidy on packing material. Instead of this, the APEDA can give subsidy on packing material against one document only.
25. About 98 per cent of the grower-exporters that were surveyed said that ECGC was not very helpful to the exporters. They were not even members of the ECGC. According to them, the ECGC afforded security on the invoice value. There is always a guarantee on payment of invoice value in the European market. Hence, ECGC afforded security on security. However, the co-operative exporters that were surveyed were members of ECGC. According to them ECGC helps in providing a list of good information about credibility of importing agents. It also communicates to the exporters the black-listed importers.

26. Generally export trade of perishables is on consignment basis i.e. realization proceeds are based on sale prices at the time of marketing. More often than not this is at variance (lower) with the invoice value, which does not fall within the 10 per cent, allowance in fluctuation of invoice value allowed by the R.B.I.

A bank official reported that, regarding the G.R. Forms to be submitted to the RBI, the Bank faces a problem on account of variation in the consignment price value quoted and actually received. The realized value some times falls short. If the amount received is less than the invoice value, then the exporters have to face the FEMA Act.

Moreover such problems are observed only occasionally. Such problems were noted in the years 1996 & 2000. In these years the required rate was not received from the importers. However till now the RBI has not taken action in such cases.

27. Most of the exporters do not want to follow the suggestion of RBI of payment of shipping freight in Indian Rupees. This suggestion according to the RBI would save Rs. 25000/- per container. This suggestion of the RBI is correct from its objective point of view-to Pay in Indian currency as far as possible. This saves the scarce foreign exchange resource.

However, according to the exporters, the shipping amount is a major amount of the export marketing cost (almost one pound sterling) for 5 kg box. The exporters get temporary relief if the importing agent does the payment of sea freight. The invoice value received by the exporters before the sell of the consignment in the European market, recovers a significant amount of the exporting marketing cost. Hence, the exporters get the peaceful sleep after receiving the invoice value. On the other hand if the exporters pay sea freight in advance, then the exporters carry the burden of recovery of this sea freight of this uncertain consignment trade. Hence, even if the importing agent adds a margin towards the shipping bill, the exporters are ready to pay this amount.

29. There existed a problem of electricity due to load-shedding during peak export season. During load-shedding, the rural areas are affected more than the urban areas. Load-shedding compels the use of generators , which in fact adds about Rs. 45,000 to Rs. 50,000 to the export cost of grapes. The researcher observed this fact personally during the field survey. Also, the cold storage is shut up for 10 months. Hence, the minimum electricity bill of Rs. 3,000 per month of this period should be reduced.

30. Most of the cold storages are located in rural areas where roads are bad. In general the condition of the highways is also not good. The researcher personally, observed it during the field survey. This causes problems like bruising and small hair size cracks, for the grapes.
31. In the beginning, the U.K. market fetched high prices. Today, the prices have been reduced. When high prices were offered the quantity supplied was also less. Now when prices have reduced, the quantity of grapes supplied to European market has also increased. In the year 1991-92, the quantity of grapes exported to the U.K. market was 271.586 m. tonnes and in 1999-00 the quantity exported was 7105.847 m.tonnes. The quantity exported to the U.K. Market was highest i.e. 9780.74 m. tonnes in 1997-98. Along with other factors, the increase in quantity exported to the U.K. Market is responsible for the reduction in prices. The same conclusion holds good for exports to the Netherlands.
32. The export from Sangli was mostly to the Gulf countries. Moreover, this export was at the peak during the Ramzan period. About 55 per cent to 60 per cent of the export to the Gulf region is done in the month of Ramzan. Previously, Ramzan was in the month of January & February.

This period coincided with the harvesting period of grapes of the Sangli region. However, now Ramzan has shifted to the months of December, November & onwards. This will give some setback to the export of grapes to the Gulf regions.

33. The production of Chile grapes have increased from 1186000 m. tonnes in 1991 to 1650000 m. tonnes in 2000. The export of Chile grapes have also increased from 1130 m. tonnes in 1991 to 1650 m. tonnes in 2000.

Chile is trying to accommodate their export of grapes to the Indian market access period window in the European market. Chile is trying to provide these grapes till the second and third week of April. This is a threatening trend for our grape exports, to the European Market.

34. The survey noted that Mexico is trying to send its grapes into the European market by air in the second week of May. This also may cut the export of Indian grapes.
35. The field survey observed that American multinational has taken over the management of Asada super market of London. They might use, their MNC style (dumping) techniques to reduce prices. Because of this, other super markets also will be forced to reduce their prices. The American MNC is also in a position to adopt 'safe way' super market of London.

The American MNC entries into the London super market are a threatening trend.

36. The South-east Asia is a potential market. However, India bears competition from Australia for grape exports. Moreover, the distance between Australia and prominent Southeast Asian countries by sea route is less than the distance between India and prominent Southeast Asian countries.
37. The rent of the refer-container has been reduced as compared to the initial export period. In the year 1991 it was \$ 5950 and in 2000 it was \$ 4200 and in some cases \$ 3800. This is a good trend for the exporters, as this helped in reducing the cost of export to the European Market.
38. In the Survey it was noticed that there were no complaints from the grower-exporters about the excise and Plant Quarantine Department. The excise officials are ready to work at odd hours of the day, due to the perishable nature of the goods and hence 'small hospitality' is voluntarily extended to by grower-exporters on humanitarian grounds.
39. About 98 per cent of the grower & co-operative exporters that were surveyed reported that there is no payment-problem in the London market

and also in the European market. Receiving payment through Demand Draft is beneficial in the Gulf Market.

40. The field survey indicated that grower-exporters will survive in the export business of grapes. Their cost of production is the lowest in the world. This is due to the low labour-cost in India. The cost of production of grapes is Rs. 7/- per kg. Secondly, they are already having cold storage with pre-cooling unit in the vineyard itself. Thirdly, their residence is in the vineyard itself. Grape-crops have to be attended to similar to that of a small child. A continuous presence of twenty-four hours in the vineyard helps the grower-exporters in taking all possible care in growing export-quality grapes. Fourthly, most of the grower-exporters have grapes as their sole business. Hence, total devotion is afforded to this business. The existing grape grower exporters will certainly, survive in this business. According to the field survey, 40 per cent to 45 per cent of the export to European markets is made by grower-exporters from Nashik district.
41. The survey revealed that about 47 grower-exporters are continuously exporting grapes to the European market since the last 6 to 8 years. On

the other hand, those people who had exported bad quality grapes are out of the export business.

42. The London and the European markets will be with India, if good export quality grapes are supplied continuously. The field survey revealed that export of fewer grapes with good quality yields good results than more quantity without export parameters. As long as the window (April 15 to May 15) is available to India in the European market, the grape export in this market will be most needed.
43. The survey noted that there are 5 to 6 trader-exporters who are doing significant export business in Nashik. The small farmers derive the benefit of these trader-exporters. According to the field survey, about 40 per cent of the export to European market is done by these traders of Nashik district. Moreover, these traders have their own farm & cold storage with pre-cooling unit in Nashik. The only difference between the grower-exporters and these particular trader-exporters is that grower-exporters are continuously present in the vineyard because their residence is in the vineyard itself. However, personal presence of traders in the vineyard is not possible because of their involvement in other business, as

well. These few traders of Nashik might stay in the business in the long run also.

44. The co-operative grape-export societies have not shown good results in regard to grape exports. There has been a decline in the export of grapes of co-operative societies. The data shows that the share of co-operative societies, in European grape exports is about 15 per cent of which Mahagrapes contribute about 7 per cent of exports.

However in the year 1998-99 the share of co-operative grape export societies was about 16 per cent, of which Mahagrapes contributed 14 per cent. The field survey showed that co-operative grape export societies were selling their produce to trader-exporters.

45. In a co-operative movement, as a principle, everyone should receive equitable distribution of revenue, even if quality is not the same. All farmers do not work equally hard for the production of export-quality grapes. The co-operative movement works satisfactorily under able leadership of one man and sincere followers. The data shows that Abhinav Co-operative society of Narayangaon has been having about 2 per cent of grape-exports out of the total grape-exports to Europe without any breakdown. Co-operative movement is generally successful in a

developing economy, but when the participants rise above certain standards they become ambitious. This ambition is unhealthy for a co-operative movement. Moreover, the co-operative is financed by NCDC & WMDC. The field survey revealed that these societies have not repaid their loans & interest. These societies are enjoying the facilities like cold storage & pre-cooling facilities. Hence, it is obligatory that they continue the export of grapes.

46. The co-operative grape societies included in Mahagrapes are from Sangli, Solapur, Pune, Latur, Ahmednagar, Dhule, Osmanabad and, Malegaon taluka of Nashik. Only two co-operatives from Nashik are affiliated to Mahagrapes. The conclusion is that Mahagrapes enjoys a hold over the grape-growing regions other than Nashik district. Out of the 25 Co-operative grape-exports societies, 15 were affiliated to Mahagrapes.
47. The grower-exporters and Co-operative-exporters are carrying on trade of grapes with the European countries. Mahagrapes and a couple of co-operatives and about 3 to 4 growers are having a small amount of trade

with Dubai. However, the major amount of grape export to U.A.E., Saudi Arabia, Bangladesh & other countries is handed by trader-exporters.

48. The grape growers with their own land are expected to earn Rs. 25,000/- to Rs. 1,00,500/- as profits, annually from one-acre of land in the domestic market. The calculations are based on the field survey 2000-01. The 2000-01 field survey calculations showed that the cost of cultivation of grapes for growers with their own land is Rs. 7/- per kg. Deducting all expenses the grower earns Rs. 3/- to Rs. 7/- per kg as profits for local variety grapes and Rs. 15/- as profits for export quality grapes in the domestic market. The grower gets Rs. 30 per kg as profits by exporting grapes to the European market. The researcher observed variations in amounts received from the Dubai market. To quote a common grower 'Dubai market is like the domestic market for him'. The grower earns 15 per cent to 25 per cent more from the Dubai market, than that in the domestic market.

However, to earn remuneration from the export market especially of the European market, the grape-grower has to work harder than the

growers selling in the local market. The post-harvest management of grapes is a significant factor for successful exports of grapes.

49. The data shows that about 98 per cent of grape production is sold in the local market. The demand for grapes in the local market is non-availability of other seasonal fruits, except oranges during the grape season. The remuneration of the grapes to the farmers depends upon quality and availability of grapes during that period.

Raisins, grape-juice and wine can be produced from grapes. Raisins can be stored round the year and they are looked as import-substitute. Grapes juice is a mild, laxative and acts as a stimulant for the kidney. Wine production is a recent concept in India. The principle of studying the market first and production later, is applicable to the wine industry.

50. The present constraints faced by local market are :
- a. 85 per cent of the total production of grapes is marketed for fresh consumption.
 - b. 70 per cent of the total production is harvested during Feb.-April.
 - c. Highly perishable nature of grapes and
 - d. Inadequate & incomplete cooling chain.

If the above constraints are overcome & if the real GDP of Indian increases as target of 8%, then grapes will have a good domestic market.

51. There is a need for grape exports because Indian grapes have an access-window available in the International market. Secondly, by producing good export quality grapes, the growers produce good local quality grapes also. Hence the growers get good price for local grapes as well. Thirdly to prevent glut in the local market as production of grapes shows an upward movement and real GDP growth rate movement comparatively slower, which might reduce prices in the local-market and lastly by exporting grapes there is some generation of foreign exchange reserves for the nation.

SUGGESTIONS

1. APEDA should explore new markets for trade. Representatives of grape-growers should be included, while surveying new markets. The APEDA office staff possesses good administrative knowledge relating to grape exports and the grape-growers have good practical field-knowledge. This will boost exports, if APEDA and grape growers work together. Moreover APEDA, should not look at Mahagrapes as a representative of grape exporter. The share of Mahagrapes in the total grape exports is less than 5 per cent.
2. Efforts should be taken to open trade with Japan. The value earned from trade with Japan is expected to be the highest in the world. This is because in the Tokyo Market, price is high because of the problem of space. Getting space in Tokyo market for Indian grapes will itself be a new landmark in the history of grape exports. More Biological pesticide should be experimented on few plots of the grape vineyard. This is for opening trade with Japan.
3. Though the import duty on Indian grapes is likely to be reduced gradually due to WTO regulations, our competitors like Chile have negligible import duty in the European Market. The immediate reduction of this import duty is the need of the hour for stability of the

grape export business. The import duty for Indian grapes was reduced from 18 per cent to 12 per cent. But it has to be reduced still further, so that Indian exporters can compete with Chile exporters in the European market. Due to this import duty for Indian grapes in European market, the export cost rises by Rs. 7/8 per kg.

3. The foreign Embassy should concentrate on the study and identification of trade areas for future prospects. This has become very necessary after signing the WTO pact.
4. Presently the European super markets are pressurising Indian exporters to use imported packing material. This unnecessarily increases the export marketing cost. Efforts are necessary for the promotion of Indian packing material in International Market in the near future.
5. Presently we are paying 6 to 8 per cent of the gross sale value to the importing agent. Also there is a dispute regarding the rate and quality especially in the wholesale market. Hence Mechanism should be devised to do direct trading atleast with the wholesale Market.
6. Indians should use the strategy for employing foreign local persons in the front office in the foreign market to deal with the local market and

to operate the rest of the business behind the scene. This strategy can be used for the wholesale market in UK and European markets.

7. The exporters should all come under one banner, at least for solving a few common issues. Negotiation, at least on the use of packing material, can be sorted out in the near future by such an organisation.
8. The licenses of cold storage should be made more liberal for perishable products. Necessary amendments in the law can be made in this regard. The cold storage is closed for ten months. Those exporters who wish to make use of it in this period, should be given permission.
10. The SAARC Countries should be marketed through proper channel . Presently this trade is done through illegal channels. If this trade is legalised some foreign exchange will be generated.
11. The RBI's suggestion regarding payment of shipping bill in Indian Rupees should remain only a suggestion. It should not be made compulsory in the interest of the grape exporter. It should be optional for the exporter to adopt it or not.

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Appendix-I

Tas-a-Ganesh

“Tasgaon Chaman”, a group variety developed by the Vaidnyanik Drakshkul, Tasgaon has become a hall mark of quality in various markets of India. This achievement was the result of sustained trials of the use of G.A.G.D. and THN on Thompson seedless. Timely and proper use of G.A.G.D. and THN produced this result and the methodology of the use of G.A.G.D. and THN has now been standardized.

Encouraged by these results, the young workers, especially Shri. Subhash Arve, M.Sc., (Agri.Hort.) of Borgaon took up observations in the various trials, being conducted by the Vaidnyanik drakshakul which included agronomic trials pesticides and weed killer trials and Raisin making.

While this was going on in the gardens, market studies were also undertaken to locate exact market requirements both wholesale and retail. In these studies it was revealed that alongwith taste the dealers and consumers preferred elongated berries and such bunches received premium price.

Relating to these studies with those in the Garden Shri. Subhash Arve, continued his observations in 1975 and 1976 seasons and located 2 vines (in Gat No. 1-A Plot No. 4) which showed different performance than the normal Thompson Seedless variety. The bunches responded to

the G.A. treatment wonderfully well resulting in elongated individual berries.

This thus formed stage first of the selection which later-on was to result in to a selection of quality grapes. This was in 1976.

From these 2 vines 46 cuttings were obtained to yield 46 fruit bearing vines in 1977, which showed identical characters for which the selection was made. (Gat. No. 1-B, Plot No. 3-B).

From these 46 vines 180 cuttings were obtained in 1977 to yield 180 fruit bearing vines in 1978. The observations indicated that the characters observed were stabilized in these vines also (Gat. No. 462, Plot No. 5 and 6).

In 1979 cuttings from these 180 vines produced 960 fruit bearing vines, which were to form the base for a large-scale demonstration of the special characters of the newly selected variety. (Gat No. G 1-A, Plot No.5). This was harvested in 1980.

In 1979 over 6300 cuttings obtained from 960 plants a 4 acre plot of the new variety has been grown and today all these vines are bearing fruits. (Gat No. 462, Plot No. 7 & 8).

Morphological observations as regards characters of this new variety in this 4 acre plot remain the same as those observed in the

original 2 vines located in 1975-76. This means the characters over the years (1976 to 1981) have stabilized in the selection which the Vaidnyanik Drakshakul desires to baptize as TAS-A-GANESH.

Appendix - II

WISDOM AND KNOW-HOW FOR GRAPES

1. To the fair land of grapes you are Welcome Sir,
May God's blessings be ever on you Sir.
2. To succeed with grapes, stay on the land,
An absentee grower, will in heavy losses land.
3. If you wish to be a grape grower, be a grape grower only,
With too many irons in the fire you will burn your fingers surely.
4. Believe it or no, it is but an honest truth,
For envious profits it is the only fruit.
5. A site higher than the land around,
Is the one that has to be found.
6. Unless the water is sweet, sure and ample,
Grape growing will prove a perfect gamble.
7. A site fairly level and higher than the land around
Is very well suited as has been always found
8. With a well balanced mixture of clay and sand,
Your soil can grow, grapes on your land.
9. Alkaline soils are never any good,
To improve such, there is no likelihood.
10. The land and the water first then the boundary fence
The planting comes only next, this makes sense.
11. The grape is grown by cuttings from a well matured cane,
But from only bearing vines, these you should obtain.
12. Single cutting with four nodes is the least you will need,
Not long or short internodes, but medium are best for seed.
13. October and January, to plant, are the best,
Plant in good time or wait for the next.
14. Fresh cuttings in October, in January, rooted plant,
Make very good growth and make study plants.
15. Don't mind the cost but only plant the best,
Else your plants will, certainly go waste.
16. Do not plant in a hustled haste,
Repentance is sure to come, but, too late.
17. Planting and training requires the Know-How,
Without personal guidance the work is done somehow.
18. The vine is pruned twice, the season to suit,
In April for fruiting canes and in October for fruit.
19. Water sweet and plenty is certainly the best,
Saline and brackish water is harmful even at their best.

20. Never let water, touch the trunk of the vine,
It leads to the rotting, of the bark of the vine.
21. You work during the day and sleep at night
Disease and pests work during day and in night.
22. The grape is subject to diseases all throughout in day and night,
Failure to control in times, will spell danger to it.
23. Crop protection thoroughly done,
Is half the battle neatly won.
24. Spraying or dusting, must be done in time,
Delay proves disastrous for any reason for rhyme
25. Excess spraying and dusting,
Lead without doubt, to harm by scorching.
26. Efficient labour and honest, are surely hard to get,
But labour you have to have, are whatever price you get,
27. Pay your labour a need based wage,
To keep his pot boiling, pay him a living wage.
28. The vine won't fruit without manure,
Give it in plenty and make it very sure.
29. N for leaves and shoot, P for roots and fruits,
K gives strength, for both to suit.
30. Manure without water and water without manure,
Whatever is lacking you have to secure.
31. Any other plant that you do not grow, is known as the weed,
So you must from you garden, keep off the weed.
32. Always keep your garden clean,
Else the weeds are sure to sweep you clean.
33. Weeds in the garden,
Where is the garden.
34. The rain gauge, the wet bulb and the dry,
Help you to understand the language of the sky.
35. The vine produces more fruit than it can bear,
Limit the crop with scrupulous care.
36. Thinning can be done in many ways,
If you do it well, it always pays.
37. When your crop is half grown, watching becomes a Must,
To save it from your enemies goaded by their lust.
38. Watching the crop is a tremendous trust,
To watch the watchman is an absolute must.
39. Do not over crop the vines, it hangs on the peg,
"Do not kill the goose that lays the golden egg".

40. Harvesting the fruit is intelligent art,
Your men must be trained to learn the art.
41. Only when they are fully ripe, you should cut the fruits,
The grape does not ever change, once off the shoot
42. Handle your harvest with a gentle care,
Your fruits will sell at prices very fair.
43. If to the wholesale market, you choose to send,
Don't expect the agent to be your friend,
However good your fruit or however fresh,
The agent will demand his "Pound of Flesh".
44. Grade your fruits and grade them well,
Graded fruits at a premium sell.
45. A steady reputation built up with care,
Will take your name far up the stair.
46. Under average conditions and intelligent care,
An annual crop of ten tonnes and often more is not very rare.
47. To make highest profit he has to do all his best,
And sell all his produce in co-operation with the
48. Personal supervision is undoubtedly the best,
The third man can't replace you at his best.
49. Unless you prepare the spray in your presence.
They may make a mess of it in your absence.
50. Spraying or dusting must be given an even spread,
A little too much any where will harm your vines instead.
51. Keep your accounts clear, though a burden on the brain,
Else your money and labour will for certain go down the drain.
52. Do not delude yourself by thinking, I know, I know.
With all you think you know, there is always yet to know.
53. First write on paper and then only give,
What ever you may forget, the paper will give.
54. Don't loose your heart, it every fortune frowns,
Grape growing also has its Ups and Downs.
55. Don't say Allah Malak Hai, and sleep in your chair,
Allah is there, but does he drive your machine or pair.
56. Welcome a newcomer, whether he is big or small,
The world is large enough to hold one and all.

Lines selected from Mr.R.Shankar Pillay's, Grape Growing
in A Nut Shell.

Appendix - III

Peculiarity of the Export Quality Grapes :

Three Ways International Limited agrees to import containers of fresh white seedless grapes from the above company subject to the following terms and conditions.

Product	White Seedless Grapes
Varieties	Thompson. Seedless. Other varieties subject to approval
Origin	India
Maturity	Grapes to be harvested at point of full maturity as indicated by Brix level and berry size. Berries must be firm and fully developed.
Condition	Fruit to be selected that will remain in fresh condition during normal handling and transit to UK, and provide at least 5 days customer shelf life in ambient. Stems must be fresh, green and turgid. Berry drop must be minimal (on departure at source must be below 2 %). Produce must be free from splits, physical or physiological injury, pests or disease, spray deposit, taints, insects, soil or other foreign matter. Any

consignment found to contain waste on arrival UK will be rejected, as will any consignment found to contain live pests.

Harvesting	To be harvested during the coolest daylight hours of early morning. Wet grape must not be picked. Harvested fruit must be shaded. Fruit must be cooled as rapidly as possible and within 6 hours of harvest.
Colour	Even pale green base colour with bloom intact to give a white appearance. Bloom to be preserved by minimizing handling. Brown amber of sun burnt fruit is unacceptable.
Elavour &	Characteristically sweet and juicy. Minimum sugar
texture	level 16% Brix. Flesh to be slightly crisp.
Size	17-mm minimum
Pre-harvest	All pesticide treatments in accordance with pre-season programme treatments as advised to Three Ways. <u>Fruit from</u> vines treated with Alar (Daminozide) is

unacceptable. The “Undertaking” on pesticides to Three Ways International must be signed and apply to this produce.

Grading	Evenly graded in terms of <u>berry size and colour</u>
Bunch size	Minimum bunch size 350 g – 900 g Maximum bunch size . No. bunches per bag. One bunch optimum two bunches maximum. All exporters must use the Tesco bags supplies by Plasticos del Segura SA.
Grading	Evenly graded in terms of <u>berry size and colour</u>
Bunch size	Minimum bunch size 350 g-900 g. Maximum bunch size . No. bunches per bag. One bunch optimum two bunches maximum. No bags per carton 5.0 kg. <u>10 BAGS PER CARTON ONLY.</u>
Trimming	Isolated defective berries to be trimmed out carefully to avoid damaging or infecting neighboring berries. Handling Bloom must be preserved. Bunches must be handled by stalk only.
Berry drop	Max 2% (= 100 g per carton). Must be continuously monitored.

Net Weight **MINIMUM AT SOURCE 5.30 KG TO ENSURE 5.1 KG IN UK** Every carton must be individually check weighed.

Defects The following tolerances exist on delivery to a Tesco RDC depot

DEFECT	Per bunch	Per 5 kg carton
Spray deposit	NIL (0)	NIL (0)
Nest waste/rot	NIL (0)	NIL (0)
Isolated mould	1 berry	5 berries
Discoloured bruise	3 berries	15 berries
Shrivel	3 berries	15 berries
Splits/crushed	3 berries	15 berries
Dry blemish/ Wind rub > 7 mm	10 berries	50 berries
Excess dirt/ soilint	3 berries	10 berries
SO ² damage	4 berries	30 berries
Minor defects	5 berries	50 berries

Continuous monitoring during packing is essential to ensure these are not exceeded. Consignments exceeding these tolerances will be rejected. (Minor defects – small berries sun scorch, dehydration, slight blemish, soiling, slight SO² damage)

Cooling	Pre-cooling to be started within 6 hours of harvest. Fruit at 1°C prior to loading fridge lorry/container.
Packaging	
a) Bags	Tesco sealable “White Seedless Grapes” bags only <u>*PLU#4022*</u> <u>To meet Tesco bag specification *PLU no on both sides*</u>
b) Cartons	500 mm x 300 mm cardboard carton ventilated side and base to facilitate cooling.
c) Liners	Polythene liners to enclose fruit & conserve moisture, bubble pads to prevent bruising and tissue/lining paper to absorb condensation paper to prevent bleaching.
d) SO ² Pads	To be used to preserve condition. Must not be in direct contact with grapes but separated by sufficient layers of tissue/lining paper to prevent bleaching.
Labelling	Pre printed on carton, stamped or labeled
at source	<ol style="list-style-type: none"> 1. Produce e.g. Fresh Table Grapes 2. Variety e.g. Thompson Seedless 3. Country of origin e.g. India 4. Name and address of packer 5. Class e.g. Class 1 6. Net weight e.g. 5 kg 7. Grower/ Packers code 8. Harvest/ Packing date

Appendix – IV
Consignment Agreement

**CONSIGNMENT AGREEMENT
BETWEEN**

**GLEAN EXPORTS PVT LTD
SHOP NUM 7, REVA KUNJ
DR AMBEDKAR ROAD
NASHIK ROAD – 422 101
(MAHARSHTRA)
INDIA**

AND

**ALFRED PRICE & SONS LTD
3 KINGS DOCK STREET
LIVERPOOL L 1 8 JU
ENGLAND**

As Alfred Price & Sons Ltd. Liverpool hereby agree to import the Table Grapes from the above company on a consignment basis for sale in the United Kingdom on the following terms and conditions.

- | | |
|-----------------------------|---|
| 1. PRODUCE | Fresh Table Grapes |
| 2. COUNTRY OF ORIGIN | India |
| 3. VARIETTES | Thompson Seedless |
| 4. SPECIFICATIONS | As Enclosed |
| 5. EXPORTER | Glean Exports Pvt. Ltd.,
Shop No.7, Reva Kunj
Dr. Ambedkar
Nashik Road – 422 101
(Maharashtra)
India |
| 6. IMPORTER | Alfred Price & Sons Ltd
3 Kings Dock Street
Liverpool
L 1 8 JU
England |

- | | |
|---------------------|---|
| 7. SHIPMENT | By Reefer Container |
| 8. PACKAGING | Grapes to be packed in a 5 kg corrugated box with a soft corrugated bottom sheet and 8 to 10 bags of grapes per box. |
| 9. COMMISSION | Alfred Price will charge 10% commission (all inclusive) on sale value. In addition, sea freight, carriage to cold store and duty will be charged at actual. No additional charges for handling. Material should be palletized and we will not charge any charges for palletisation. |
| 10. MODE OF PAYMENT | Alfred Price will make an advance payment of £3.00 per carton against documents. Twice weekly sales reports will be sent to the exporter. Account Sale will be made within one week of disposing of full container load and settled. |

11.ANTICIPATED SHIPPING : In total 10 containers – 1st March 1999

to 30th

PROGRAMME

April 1999.

Remark .

Each container would consist of
approximately 15 MT of Grapes.

Signed by :

**M/S Alfred Price & Sons Ltd.
3 King Dock Street
Liverpool
L 1 8 JU
England**

**Glean Exports Pvt. Ltd.,
Shop Num.7, Reva Kunj
Dr. Ambedkar
Nashik Road – 422 101
(Maharashtra)
India**

12. ARBITRATION

**Any dispute arising out of the above
contract will be settled by Arbitration
in India in accordance with rules of
International Chamber of Commerce.**

Appendix - V

STATEMENT SHOWING EXPORT OF FRESH FRUITS AND VEGETABLES THROUGH VARIOUS CO-OPERATIVE MARKETING SOCIETIES IN MAHARASHTRA

Sr. No.	Name of the Society	1994-95		1995-96		1996-97		1997-98		1998-99	
		Commo-dity	Quan-tity in M.T.	Comm-odity	Quan-tity in M.T.	Comm-odity	Quan-tity in M.T.	Comm-odity	Quan-tity in M.T.	Commo-dity	Quan-tity in M.T.
1	Dyaneshwar Grape Growers Co-op Society Ltd Manjarwadi Tal. Junnar. Dist. Pune	Grapes	Nil	Grapes	96.00	Grapes	147.00	Grapes	121.00	Grapes	Nil
2*	Shriram Grape Growers Co-op Society Ltd Pimpalgaon (B). Tal. Niphad. Dist. Nashik	Grapes	48.00	Grapes	36.00	Grapes	98.04	Grapes	57.00	Grapes	72.00
3*	Kamdhenu Grape Growers Co-op Society Ltd Manerajuri Tal. Tasgaon. Dist. Sangali.	Grapes	63.80	Grapes	24.00	Grapes	40.00	Grapes	43.56	Grapes	120.83
4	Anand Grape Grower's Co-op Society Ltd Dari. Tal. Nashik. Dist. Nashik.	Grapes	46.00	Grapes	283.00	Grapes	117.00	Grapes	65.36	Grapes	Nil
5*	Baglan Taluka Grape Growers Co-op Society Ltd Satana. Tal. Satana. Dist. Nashik.	Grapes	6.00	Grapes	40.00	Grapes	25.00	Grapes	14.00	Grapes	6.66
6	Shivsmruti Phalotpadak Shetkari Sahkari Sanstha Ltd. Akluj Tal. Malshiras Dist. Solapur	-	Nil	-	Nil	-	Nil	Grapes	6.00	Grapes	Nil

1	2	3	4	5	6	7	8	9	10	11	12
7	Pandhariprasad Phalotpadak Sahkari Sanstha Ltd. Sangola Tal. Sangola Dist. Solapur	Grapes	Nil	Grapes	Nil	Grapes	Nil	Grapes	Nil	Grapes	Nil
8*	Latur District Grape Growers Co-op Society Ltd Latur. Dist. Latur	Grapes	22.69	Grapes	205.00	Grapes	124.00	Grapes	26.20	Grapes	55.20
9*	Saibaba Grape Growers Co-op Society Ltd Sakuri. Tal. Kopargaon. Dist. A'Nagar, Kopargaon	Grapes	59.64	Grapes	40.00	Grapes	12.00	Grapes	12.88	Grapes	36.00
10	Abhinav Grape Growers Co-op Society Ltd Agar. Tal. Junnar. Dist. Pune.	Grapes	120.00	Grapes	278.00	Grapes	277.00	Grapes	125.00	Grapes	114.98
11	Vighnagar Grape Growers Co-op Society Ltd Narayangaon. Tal. Dist. Pune.	Grapes	128.00	Grapes	336.00	Grapes	288.00	Grapes	32.00	Grapes	Nil
12*	Karmaveer Grape Grower's Co-op Society Ltd Sakri. Dist. Dhule.	Grapes	7.00	Grapes	Nil	Grapes	Nil	Grapes	Nil	Grapes	Nil
13*	Khandoba Panan Sahkari Sanstha Ltd. Andur. Tal. Tuljapur. Dist. Osmanabad.	Grapes	108.00	Grapes	154.00	Grapes	168.00	Grapes	Nil	Grapes	13.06

1	2	3	4	5	6	7	8	9	10	11	12
14*	Poona Grape Growers Co-op Society Ltd Uruli Kanchan. Tal. Haveli. Dist. Pune.	Grapes	45.00	Grape	195.00	Grapes	56.00	Grapes	67.40	Grapes	136.64
15*	Mogi Grape Growers Co-op Society Ltd. Malegaon. Tal. Malegaon Dist. Nashik.	Grapes	Nil	Grapes	Nil	Grapes	Nil	Grapes	Nil	Grapes	Nil
16*	Chaitnya Grape Growers Co-op Society Ltd Palus. Tal. Tasgaon. Dist. Sangali	Grapes	12.17	Grapes	6.50	Grapes	27.20	Grapes	Nil	Grapes	81.60
17*	Shri Vital Grape Growers Co-op Society Ltd. Kasegaon. Tal. Pandharpur. Dist. Solapur	Grapes	26.00	Grapes	Nil	Grapes	Nil	Grapes	Nil	Grapes	13.60
18	Pravata Phale Va Bhajipala Utpadak Va Prakriya F & V Shetakari Sanstha Ltd, Pravaranagar, Tal. Shrirampur, Dist. Ahmednagar	Grapes	Nil	Grapes	Nil	Grapes	Nil	Grapes	Nil	Grapes	Nil
19*	Malta Grape Growers Co-op Society Ltd. Malegaon. Tal. Malegaon. Dist . Nashik	Grapes	40.31	Grapes	8.00	Grapes	Nil	Grapes	Nil	Grapes	Nil

1	2	3	4	5	6	7	8	9	10	11	12
20	Krishi Vikas Sahakari Sanstha Ltd. Sangola, Tal. Sangola. Dist Solapur	Grapes	Nil	Grapes	Nil	Grapes	Nil	Grapes	Nil	Grapes	Nil
21	Dhule Zilla Draksh Bagayatdar Shetakri Sangh Ltd. Dhule, Tal. Dhule Dist. Dhule	Grapes	Nil	Grapes	Nil	Grapes	Nil	Grapes	Nil	Grapes	Nil
22	Krantisingh Graph Growers Co-op Society Ltd Walwa. Tal. Walwa. Dist. Sangli.	Grapes	Nil	Grapes	135.00	Grapes	599.00	Grapes	Not avail- able	Grapes	Nil
23	Baramati Taluka Phalotpadak Shakari Sanstha Ltd. Baramati. Tal. Baramati Dist. Pune	Grapes	Nil	Grapes	129.00	Grapes	224.00	Grapes	Not avail- able	Grapes	Not avail- able
24*	Siddeshwar Grapes Growers Co-op Society Ltd.Sawlaj. Tal Tasgaon Dist. Sangali	Grapes	45.00	Grapes	38.00	Grapes	Nil	Grapes	21.99	Grapes	198.89
25*	Solapur Grape Growers Co-op Society Ltd Nnaj. Tal. North Solapur. Dist. Solapur	Grapes	61.00	Grapes	78.00	Grapes	159.00	Grapes	40.80	Grapes	71.43

* Belongs to Mahagrapes.

Source : Maharashtra State Agricultural Marketing Board, Pune.

Appendix - VI

List of documents demanded by APEDA

- 1. Application form**
- 2. Pan No Xerox**
- 3. Bill of Cartoon**
- 4. Copy of RCMC**
- 5. IIP Certification of Cartoon**
- 6. Bill of Lading of Container**
- 7. Invoice of Container**
- 8. E.P. of container**
- 9. C.A. Certificate**