

Knowledge of post harvest technology practices by the grape growers in Tasgaon tahsil of Sangli district of Maharashtra

■ P. P. KHARADE, J. P. WALKE U.B. DHAKE AND S.S.NALE

SUMMARY : The study was carried out in Tasgaon Tahsil of Sangli district where grape is extensively grown. Sample of 160 grape growers was drawn by using stratified random sampling method. It was observed that almost all the grape growers had complete knowledge about post harvest technological practices like major aspects of signs of maturity, harvesting of bunches, grading of bunches, packing of fruits and preparation of processed products like raisin and wine. But most of them had no knowledge about processed products like Jam, vinegar, grape syrup, grape chatni, storing grapes in syrup and canning of grapes.

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Success of the system of the agricultural development can be measured in term of achievement in research growth, production technology and post harvest technology. post harvest technology has potential to create rural industries. So fruit and vegetable processing industry has a significant role to play in development of the country, which was predominantly agricultural economy. The industries are equipped to absorb large quantities of fruits for processing purpose. This would ensure fair prices to the growers and avoiding distress sale in the season of gult. Besides, the industry helps in the economic utilization of horticulture produce of the relatively inaccessible are from where the transportation in fresh form is difficult. The rural fruit processing industry offers immense potentialities in providing employment both at factory level, results into growth in economy and standard of living of rural people.

Maharashtra state ranks first in cultivation of grape. Nearly 28,500 ha. area is under plantation of grape with total (production) income of 6 to 7 lakh metric tonnes. Out of total area in the country Maharashtra occupies about 66 per cent area under grape cultivation with 55 per

cent production. In Maharashtra grape growing is mainly concentrated in Sangli, Pune, Nashik, Solapur and Ahmednagar districts.

Now a days marketing of grape becomes difficult due to certain causes such as interference of middleman, long distance markets, fluctuation in market prices. This results into loss of grape growers. So this can be avoided by increasing the storage life of berries through processing into different value added products. Therefore, post harvest technology has great importance in preparation of processed products from increased production. Also post harvest technology plays major role in minimizing transportation costs, spoilage in transportation, avoiding fluctuation in market prices, exporting the fresh fruits and processed products to foreign countries and thereby getting maximum price to farmers and increasing their economic status. In view of this, the scientific understanding about the post harvest technology is must. Hence, it is necessary to find out the knowledge level of the post harvest technology practices by the grape growers for developing new suitable strategy.

MEMBERS OF RESEARCH FORUM

Author for Correspondence :

P.P. KHARADE, Agriculture Technical School, Manjri Farm, M.P.K.V., Rahuri, AHMEDNAGAR (M.S.)INDIA
E.mail : ppkharade@rediffmail.com

Coopted Authors:

J.P. WALKE, U.B. DHAKE AND S.S. NALE, Agriculture Technical School, Manjri Farm, M.P.K.V., Rahuri, AHMEDNAGAR (M.S.) INDIA

EXPERIMENTAL METHODS

The present study was undertaken in Tasgaon Tahsil of Sangli district of Maharashtra. A list of grape growing villages was obtained and out of these villages ten villages were randomly selected. Sample of 160 grape growers was drawn by using stratified random sampling method. The data from the grape growers were collected through

personal interview schedule. The qualitative data were converted into quantitative form. The independent and dependant variables were measured by assigning score. For Knowledge 45 practices were selected. Score two was assigned for knowing the practices perfectly. One score was assigned for knowing the practices partially and zero score was assigned for total lack of knowledge about practice. Maximum total possible score was 81 and minimum was zero. Accordingly, total scores of every grape grower were worked out and they were grouped into three groups by using mean +_ standard deviation (S.D.)

- Low : Up to 60 score
- Medium : 61 to 73 score
- High : 74 and above score

EXPERIMENTAL FINDINGS AND ANALYSIS

Practice wise knowledge of the grape growers about post harvest technologies of grape.

It is observed from the Table 1 that, all the grape growers (100.00 %) had knowledge about signs of maturity of grape berries. Almost all (98.75 %) of them had knowledge about softening of berries, while 32.50 per cent of them had knowledge about T.S.S. Only one fourth of them (25.00 per cent) had knowledge about ratio of R.S.S. to acidity. All the grape growers (100.00 %) had

knowledge about use of secateurs for harvesting of bunches, about time of harvesting and about use of bubble sheet at the base of plastic crates for cushioning or use of Netlon. The entire grape growers (100.00 %) had knowledge about grading of bunches on the basis of colour and separation of cracked, immature, disturbed, disease and pest attacked berries. Majority of them (96.25 %) had knowledge about grading of bunches on the basis of size and 93.13 per cent of them had knowledge about grading of bunches by considering weight of bunches.

Data in respect of packing of bunches indicated that all the grape growers (100.00 %) had knowledge about use of corrugated fibreboard boxes, paper cuttings and tisco tapes for packing of boxes. Almost all grape growers (97.50 %) had knowledge about use of bubble pad, polythene paper and tissue paper and 98.75 per cent of them had knowledge about writing the name of variety, packing date, weight of box, name of country on the surface of boxes, while large majority of them (84.37 %) had knowledge about use of grape guard for safe carrying and handling of boxes. Most of grape growers (93.75%) had knowledge about proper time of pre-cooling, where as majority of them (85.62 %) had knowledge about use of cold storage facilities for storing the boxes for long time.

As far as processed products are concerned, the data

Table 1 : The information pertaining to the practise wise knowledge of grape growers is presented

Sr. No.	Post harvest technologies of grape	Knowledge (n=160)					
		Complete		Partial		No.	
		Frequency	Per cent	Frequency	Per cent	Frequency	Per cent
Signs of maturity							
1.	Colour of berries (yellowish or dark black or dark red)	160	100.00	-	-	-	-
2.	Softening of berries	158	98.75	-	-	2	1.25
3.	Transparent berries	160	100.00	-	-	-	-
4.	T.S.S. – 18 to 22 degree bricks	52	32.50	-	-	108	67.50
5.	Ratio of T.S.S. to acidity (20:1 to 35:1)	40	25.00	-	-	120	75.00
Harvesting of bunches							
1.	Use of secateurs	160	100.00	-	-	-	-
2.	Time(Morning/ Evening)	160	100.00	-	-	-	-
3.	Use of bubble sheet at the base of plastic crates for cushioning or use of Netlon	160	100.00	-	-	-	-
Grading of bunches							
1.	On the basis of colour (yellowish or dark black or dark red)	160	100.00	-	-	-	-
2.	Separation of cracked, immature, disturbed, disease and pest attacked berries	160	100.00	-	-	-	-
3.	On the basis of size	154	96.25	-	-	6	3.75
4.	By considering weight of bunches	149	93.13	-	-	11	6.87
5.	Use of T.S.S.	52	32.50	-	-	108	67.50
6.	Use of polythene hand gloves for maintaining the luster on berries	31	19.37	-	-	129	80.63

Table 1 : Contd....

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Packing of fruits							
1.	Use of corrugated fibreboard boxes, paper cuttings & tisco tapes	160	100.00	-	-	-	-
2.	Use of bubble pad, polythene paper and tissue paper	156	97.50	-	-	4	2.50
3.	Writing the name of variety, packing date, weight of box, name of country on the surface of boxes	158	98.75	-	-	2	1.25
4.	Use of grape guard for safe carrying and handling of boxes	135	84.37	-	-	25	15.63
V Pre-cooling							
1.	Proper Time <i>i.e.</i> within a period of 2 hrs. after harvesting. Temp.-0°C , Humidity – 95%	150	93.75	-	-	10	6.25
Storage of boxes							
1.	Use of cold storage facilities for storing the boxes for long time	137	85.62	-	-	23	14.38
(A) Fruit processed products							
1.	Raisin	160	100.00	-	-	-	-
2.	Wine	160	100.00	-	-	-	-
3.	Grape Juice	65	40.62	-	-	95	59.37
4.	Jam	6	3.75	-	-	154	96.25
5.	Vinegar	6	3.75	-	-	154	96.25
6.	Grape-syrup	7	4.37	-	-	153	95.63
7.	Grape Chatni	5	3.12	-	-	155	96.88
8.	Storing grapes in syrup	8	5.00	-	-	152	95.00
9.	Canning	24	15.00	-	-	136	85.00
(B) Methods of raisin making							
1.	Sun-drying						
i	Keeping bunches on vine for long period	113	70.63	-	-	47	29.37
ii	Drying on bunches in garden	111	69.37	-	-	49	30.63
2.	Golden beech method						
i	Depping bunches in alkali solution (0.2 to 0.3% caustic soda for 2 to 23 seconds at 93°C to 100 °C temp.)	142	88.75	-	-	18	11.25
ii	Sulphur treatment	141	88.13	-	-	19	11.87
iii	Dehydration	140	87.50	-	-	20	12.52
3.	Sulphur beech method						
i	Alkali treatment	141	88.13	-	-	19	11.87
ii	Sulphur treatment	139	86.87	-	-	21	13.13
iii	Sundrying	138	86.25	-	-	22	13.75
4.	Soda oil beech method						
i	(Caustic soda + Olive oil) treatment	155	96.88	-	-	5	3.12
ii	Depping in alkali solution	157	98.13	-	-	3	1.87
iii	Sundrying	157	98.13	-	-	3	1.87
5.	Drying under shade						
i	Harvesting of full matured bunches	114	71.25	-	-	46	28.75
ii	Drying under shade	117	73.12	-	-	43	26.88

indicates that, all the grape growers (100.00 %) had knowledge about the raisin and wine. Nearly two fifth of them (40.62 %) had knowledge about the juice of grape, but very few of them (less than 5 %) had knowledge about

processed products like jam, vinegar, grape syrup, grape chatni and storing grape in syrup. Only 15.00 per cent of grape growers had knowledge about the canning of grapes.

Among the methods of raisin making, almost all the

grape growers(98.13 %) had knowledge about the soda oil beech method followed by golden beech method (88.75 %), sulphur beech method (88.13 %) drying under shade (73.12 %) and sundrying (70.63 %), respectively.

Similar type of studies on custard apple and banana were conducted by Deshmukh *et al.* (1998) and Pandya and Vekaria (1994), respectively.

Conclusion:

From the findings it is concluded that, almost all the grape growers had complete knowledge about post harvest technological practices like major aspects of signs of maturity, harvesting of bunches, grading of bunches, packing of fruits and preparation of processed products like raisin and wine.

But most of them had no knowledge about processed products like jam, vinegar, grape syrup, grape chatni, storing grapes in syrup and canning of grapes.

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