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Subject III

**Horticulture in India: Organisation of Production,
Marketing and Processing**

Rapporteur: K.V. Subrahmanyam*

The session started with the presentation of the keynote paper by G.L. Kaul. In his keynote paper, Kaul has brought out many important constraints facing the horticultural industry like lack of data base, unorganised marketing, and the need for economic assessment of technologies developed by research institutes. He also presented a new marketing set up which involves the concept of packing house before the produce reaches the wholesale market.

The discussion was organised around the issues identified in the Rapporteur's Report.

1. Adequacy and Needed Improvement in Data Base of Horticultural Crops

The Group felt that the statistical data available at present are quite inadequate and needed improvement. The present data as reported by the land revenue officials are sometimes misleading as in the case of Punjab, where based on the intercrop of wheat grown in young orchards, it is declared as wheat area in land records. Similarly, the productivity figures reported also are not correct in the case of some fruit crops as they are based on area, rather than the number of plants in production existing in the area. Some participants suggested that some survey type as in the case of livestock census can be taken up for generating the data. But it was felt that it may not generate continuous data needed for planning and in the case of some horticultural crops like vegetables and flowers the data will be changing from year to year and from season to season. Hence the participants felt that the data on area of perennial crops can be collected once in two or three years through survey but the data on area of the field crops needed to be collected on a continuous basis.

There was also a discussion on the kind of agency which should take up the collection of statistical data. Though at present various agencies like the Directorate of Economics and Statistics, Ministry of Agriculture, Department of Horticulture in some states, National Horticulture Board, etc., are collecting and reporting data, it was felt that this can not be used as authentic data. Besides, it was also pointed out that under Indian Agricultural Statistical Act only the revenue department is entitled to collect this data through land records. It was brought out that the only obstacle for the recognised agency to collect data on horticultural crops was lack of manpower and resources which needed to be strengthened through provision of extra allocation of funds.

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Another point that was discussed in the context of data collection on horticultural crops was the need to develop methodology for getting adequate information. It was pointed out that there was a need to get information on age of plants, varieties, season, etc., which would necessitate development of appropriate methodology and training of the staff engaged in data collection.

Regarding collection of yield data it was felt that sampling technique can be used for estimating the yields.

2. Market Risk and Its Implications on Production of Horticultural Crops

The Group identified two types of risks faced by the cultivators, viz., (i) the price risk, i.e., the wide price fluctuations due to over supply in peak seasons and (ii) the risk created by the middlemen in the market.

(i) *Price risk*: The price risk is mainly due to over-production and to some extent influenced by the arrival pattern in the market and lack of infrastructure facilities in the market. The participants felt that the best way to overcome this is to (a) encourage farmers' organisation which will take care of the marketing. In this context, the example of grape growers' association in Maharashtra was cited due to which considerable improvement in marketing of grapes has taken place though it is a highly perishable commodity. (b) The second suggestion was to divert the produce for processing purpose. In this context, the contract farming practised by Pepsi in Punjab and Kissan in Karnataka was cited. It was pointed out that though contract farming was successful in the case of some commodities like 'Gerkins' in Karnataka which was mainly due to lack of market for fresh produce, it was not so in the case of commodities like tomato which has got both processing and fresh market. It was felt that the best way of integrating production with processing and marketing was to start intermediate processed product units in production areas with buy-back arrangement with the big processing industries as in the case of mango pulp. It was also pointed out that there was a need for conducting more research on agro-techniques like date of planting, varieties, etc., which will stagger the arrivals of the produce to the market so that the glut can be avoided for stabilising the prices.

(ii) *Risk created by the middlemen*: The participants felt that in the market itself the cultivators face the risk in the form of cheating by illegal deductions, overcharging, offering low prices through collusion and underweighing. In this context, the scope and usefulness of extending the regulated market act to horticultural crops was discussed by the participants. It was felt that with the present level of implementation of the act by the Agricultural Produce Market Committees, no useful purpose will be served by extending the act to horticultural crops. It was suggested that special marketing yards, as in case of auction centre for floriculture crops in Karnataka, should be developed so that proper auctioning and infrastructural facilities can be created in the market yards. The need was also felt to study the feasibility of packing house concept in the Indian context.

3. Infrastructural Facilities

(i) *Cold stores*: There was much discussion regarding this most important infrastructure facility for horticultural crops. The participants felt that this facility has to be viewed from two angles, viz., from the view point of domestic market and (ii) from the export point of view. It was observed that the cold storage was not the only solution to create time and space utility and there was a need to study the traditional system of storing followed by the cultivators and quantify its benefits. The construction of cold stores should be taken up after carefully assessing the demand and it should take into account the products to be stored. It was felt that studies should be conducted regarding cost of cold storing and its beneficial effects in terms of realising better prices and income. For better utilisation of cold stores the need was stressed to create awareness among the cultivators regarding the benefits of storing the produce in cold stores. It was also pointed out by the participants that the cultivators would need to be educated regarding phyto-sanitary requirements while storing the produce especially for export purposes. The possibility of advancing loans against the produce stored should also be explored to encourage the cultivators. The development of cold stores should be taken up in co-operative and farmers' organisations as at present most of the cold stores are in the private sector.

(ii) *Transport and packing*: It was brought out that there was a need to differentiate the transport problems faced in the plains and hilly regions. In hilly regions the main problem was the non-availability of trucks and also the high cost of transport. In the case of plains though non-availability is not a big problem, the cost of transport is a major concern for the farmers. To overcome this it was suggested that while advancing credit by institutional agencies, the transport cost also should be taken into account as was done by Commission for Agricultural Costs and Prices (CACP), Government of India while fixing the support price.

As regards packing, it was felt that the present method of packing the horticultural produce has resulted in huge post-harvest losses and there was a need to improve the packing both at the cultivators' level as well as at the traders' level. In the discussion it emerged that we did not have much information regarding the comparative costs of the present packing material used and the improved ones like corrugated fibre board boxes. It was also felt that there was a need to estimate the supply and demand of the improved packing material so that its availability can be improved before taking steps to replace the existing packing material.

(iii) *Grades and grading*: During the discussion on this aspect, it was pointed out that for most of the horticultural commodities no grades were developed by the Directorate of Marketing and Inspection, Government of India, except for a few commodities like potato, onion and apple. It was also brought out that at present grading is voluntary except for export in the case of a few commodities like potato, but informal grading is practised based on size, freshness and appearance at different levels of marketing by traders for some commodities. To popularise grading, the participants felt that it should be ensured in the market that such grading will result in better prices and income to the cultivators.

(iv) *Role of Government, private and public investment for development of infrastructural facilities*: In view of the huge investment and uncertainty of their full use and profitability, the private agencies may not come forward to invest in infrastructural facilities like refrigerated vans, assembling centres, grading and packing houses and post-harvest treatment plants like waxing, etc. Hence it was felt that we should encourage their development in joint and co-operative sectors.

4. *Horticulture Processing Industries*

In the discussion it was brought out that there is a lack of data/studies on various aspects of horticulture processing industries. It was observed that of late the processing industries have been developing and marketing new products to increase the domestic demand for processed products. For example, the tomato sauce is now marketed in combination with chillies and tamarind as tomato-chilli sauce and tomato-tamarind sauce. Similarly, by changing and bringing low cost small packs, the processing industries are trying to encourage low/middle income groups also to use the processed products. It was also pointed out that there has been a considerable change in the taste and preferences among various categories of people and hence its impact on demand for processed products needed to be studied. The need was also emphasised to study the impact of liberalised industrial policy and entry of big firms on the composition of fruits and vegetable processing industry, i.e., small, medium and cottage industries. The participants felt that the government should encourage establishment of more processing industries through simplified procedures.

5. *Post-harvest Losses and Its Impact on Marketing*

The need for estimating the post-harvest losses both in terms of quantity and quality which is reflected in low prices and value at various stages of marketing and their impact on transport cost, etc., was stressed by the participants.

RESEARCH TOPICS

Based on the above discussions the following topics were identified for future research.

1. Methodologies for collection of quality data on horticultural crops.
2. Feasibility studies for starting of packing houses in different production regions for different commodities.
3. Scope for integration of production with processing and marketing and starting intermediate processed product units in production areas.
4. Cost of cold storage and its impact in realising better prices and income.
5. Estimation of demand, supply and availability of improved packing material, and the extra costs involved for switching over from traditional packing.
6. Product diversification in processing industries and consequent demand for various horticultural produce.
7. Changes in price elasticities of demand for processed products in different segments of population.
8. Impact of post-harvest losses on the cost of transport, storage, etc.