

POST-HARVEST PRACTICES

Production is meaningless unless consumers have access to produce. Post-harvest practices include all the stages from harvesting to consumption. Wills et al. (1989) reported that 25-80 per cent of fresh fruits and vegetables are lost after harvest. Systematic harvesting and other post-harvest practices are not followed in Rasuwa District. Therefore, there are probably more losses than reported. Post-harvest practices include harvesting, handling, grading, packing, transportation, storage, processing, and marketing. These practices are very new in Nepal, although farmers and traders do adopt these practices, knowingly or unknowingly. Extension activities in Rasuwa do not include a specific programme for post-harvest practices.

Harvesting Techniques

In Rasuwa, farmers harvest fruits (apples) and vegetables as and when needed. They are ignorant of appropriate harvesting methods and the proper harvesting period. For example, farmers harvest the apple crop during *Janai Purnima* even if the fruits are green or are just developing colour. Farmers just pick the fruit from the trees without using ladders, irrespective of whether it is for immediate consumption, storage, or processing purposes. As a result, the harvested fruits are unripe, sour, tasteless, and difficult to transport as well as to store. Such fruits tend to decay or shrink very quickly.

In the case of apples, especially the Red Delicious variety, a harvesting index, i.e., change in the colour of fruit, total weight, solidity, firmness, or stages from flowering to harvesting must be considered. The colour of Red Delicious should be reddish during harvesting. Golden Delicious is reddish but at the time of harvesting the colour becomes green to yellow. They can be easily picked during harvest, however, a ladder must be used to harvest all varieties of fruit. Tree-shaking or other harmful harvesting methods should be discouraged.

Packing and Grading

As mentioned earlier, the harvesting techniques used in Rasuwa are very primitive, and grading and packing are not carried out properly either. The practice of grading fruits and vegetables does not exist. Irrespective of grade, harvested fruits are sent to the market. A proper grading system should be developed or systems developed elsewhere (preferably India) should be taught to the farmers and carefully followed.

Farmers pack fruits in bamboo *doko* (bamboo baskets) and gunny sacks. Rough handling of fruits during harvesting and packing results in bruising and early decay. However, fruits cannot be stored for long periods or transported over long distances. Even if *doko* are used, improvements can be made by covering the sides of the baskets as well as the space between fruit piles with moss and straw.

Storage

In Rasuwa, fruits, especially apples, are harvested prematurely during the *Janai Purnima* festival in order to sell the produce to the pilgrims travelling to Gosainkund. The fruits are sour and tasteless. They shrink and decay during storage if unsold.

Properly stored fruits can be marketed during the off-season. Price reduction, resulting from glut production, can be minimised. Fruits can be marketed by following the pattern of demand. Rasuwa lacks proper storage facilities. The Department of Food and Agriculture Marketing Services (DFAMS) had constructed five storage cellars. Rasuwa is a temperate region where the temperature can be regulated to even 4-5°C or less until March-April. However, the farmers could not maintain the storage facilities and only one remains at present. The farmers felt that since the Government constructed the cellars, they should be maintained by the Government no matter how useful the storage facilities were.

Farmers should be made aware of the fact that storage facilities, e.g., cellars can be very useful for storing fruits, potatoes, and onions for long periods until market prices increase. Consequently, the produce will yield better returns. Therefore, farmers should invest in the construction of storage facilities as an incentive for proper maintenance of these facilities.

Transportation

At present, Rasuwa is linked by an all-weather gravel road to Trishuli and by a metal road from Trishuli to Kathmandu. The total length of the road from Kathmandu to Trishuli is 72km, from Trishuli to Dhunche 48km, and to Somdang 105km. This road links almost half of Rasuwa District. All VDCs except Langtang can be reached in about four to five hours' walk from the road.

For marketing highly perishable goods such as fruits and vegetables, transportation is of critical importance, especially in areas located in the interior. Construction of a ropeway system from the production sites to the roadhead should be considered in order to transport perishable goods more quickly and easily to the roadhead and thereon to the consumers.

Processing

In Rasuwa, some vegetables, e.g., radishes, are processed traditionally. Fruits and potatoes are not processed locally. In recent years, apple brandy has been made by the local people by mixing apples and sugar (molasses).

Rasuwa is nearer to the Kathmandu market, therefore emphasis should be placed on marketing fresh fruits and vegetables. However, in some cases, processing can be carried out if proper fruit varieties are selected.

More perishable fruits, e.g., peaches, should be used for distillation of alcoholic beverages. Apples could be used to reduce fermentation of millet and other cereals.