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Value Addition and Processing of Vegetables

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Abstract

India is bestowed with diverse agroclimatic zones which permit the cultivation of wide variety of horticultural crops growing over different regions of the country. India ranks second next to China, in terms of fruits and vegetable production. But with the rising population, India still lags behind to combat the food security concerns. Every year, enormous volume of food is wasted owing to post-harvest damages. Post-harvest losses accounts for approximately 20-50% in developing countries and 10-15% in developed countries. Therefore, instead of raising production to combat hunger and poverty and improve standards of living and food security, decreasing post-harvest losses is the need of the hour for greater sustainability.

Introduction

Vegetables are considered “protective food” as regular consumption of fresh vegetables provide all the essential components required for the normal functioning of the body and are therefore, rich source of carbohydrates, proteins, vitamins, minerals and fibres, which ultimately reduces the risk of various chronic diseases. Vegetables are seasonal and are not available round the year. Sometimes, glut in the market, during the peak season, confers low market prices maximizing post harvest losses. These post harvest damages are brought by cumulative effects *viz.* mechanical injuries, physiological damage (such as wilting, shriveling) and pathological *i.e.*, decay due to fungi or bacteria. Thus, value addition of vegetable produce provides a way to decipher the post harvest losses (Kannauja *et al.*, 2019).

Value addition is defined as an activity that agricultural producers utilize to produce a new commodity by changing its present place, time, and from one set of characteristics to other that are more preferred in the marketplace to obtain higher returns (Evans, 2012). Processing accounts for approximately 40% in developing countries and 70% in developed countries, while in India only 2-2.5% processing is done, even our county ranks second in the world in terms of production. Increasing demand for processed value-added vegetables can be achieved through low-cost processing techniques with the maintenance of nutritive and sensory quality (Nagil and Chamroy, 2020). India presently produces a very wide range of processed vegetables, *i.e.*, dried/preserved and dehydrated vegetables such as vegetable sauces and juices, powdered products, pickles, chutneys, flakes *etc.*

Why Processed Products are More in Demand?

- Processed product is a way to increase recovery of final products.

- Processed vegetables have more shelf life and less bulky in nature.
- More nutritional value per unit volume of produce.
- Working families due to lack of time prefer processed vegetable products like paste, puree, dehydrated products as it will reduce the time for cooking.
- Drastic change in the eating pattern of today's generation has led to increased demand of processed vegetables.

Table 1: Value added processed products of vegetables

Sl. No.	Crop	Processed Product
1	Tomato	Pulp, puree, paste, flakes, canned tomatoes, ketchup, sauce, powder, dehydrated tomato
2	Potato	Potato flour, potato grits, flakes, granules, cubes, chips
3	Ginger	Paste, candy, preserve, candy, beverage, powder, juice, oleoresin
4	Carrot	Carrot juice, carrot flakes, powder, grits, Halwa, soup, pickle, Kanji (Black carrot)
5	Sweet potato	Sweet potato flour, Sweet potato granules, canned sweet potato
6	Cabbage	Sauerkraut
7	Ash gourd	Petha Badi
8	Bottle gourd	Tuti fruttii

Challenges in Processing Industry

- Non availability of good quality raw material from reliable.
- Lack of proper storage facilities.
- Lack of local cold storage to store the surplus.
- Lack of transport.
- Poor availability of suitable packaging materials at cheaper rate.

Conclusion

Owing to high nutritional status of vegetables, there is much scope of processed products in different consumable forms. Also, to reduce the post harvest losses and to maintain the shelf life for longer period, post harvest processing of different crops has become the need of the hour, thus, enhancing the economy and increasing the export potential of the country.

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