OPEN ACCESS Freely available online

Journal of Horticulture

ISSN: 2376-0354

Commentary

The Role of Post-Harvest Technology in Promoting Food Security

Riadh Ilahy*

Department of Ornamental Horticulture, University of Delhi, Delhi, India

DESCRIPTION

Post-harvest technology plays a crucial role in preserving the quality and quantity of agricultural produce after harvesting, thereby ensuring food security, reducing losses, and enhancing sustainability. It encompasses a range of practices and techniques aimed at minimizing post-harvest losses, improving shelf life, maintaining nutritional value, and adding value to agricultural products. In this article, we will delve into the significance of post-harvest technology and explore various methods and technologies that contribute to its effectiveness and impact.

Importance of post-harvest technology: Post-harvest losses pose a significant challenge to global food security. According to the Food and Agriculture Organization (FAO), approximately one-third of the world's food production is lost or wasted annually, amounting to about 1.3 billion tons. Post-harvest technology plays a crucial role in mitigating these losses by employing innovative techniques and technologies that prevent spoilage, improve quality, and extend the shelf life of agricultural products.

Furthermore, post-harvest technology helps in maintaining the nutritional quality of harvested produce. Many fruits, vegetables, and grains are highly perishable and prone to nutrient degradation during storage and transportation. Proper handling, cooling, and processing methods can minimize nutrient loss, ensuring that consumers receive safe and nutritious food.

Methods and technologies in post-harvest technology: Post-harvest technology encompasses a wide range of methods and technologies that are tailored to specific crops and products. Some of the key techniques include:

- **Proper harvesting:** Timely and appropriate harvesting techniques help minimize mechanical damage and prevent the spread of diseases and pests. It involves using sharp tools and careful handling to reduce post-harvest losses.
- **Sorting and grading:** This technique involves separating agricultural produce based on quality, size, and ripeness. Sorting and grading facilitate uniformity and better marketability of the produce.
- **Cleaning and washing:** Cleaning removes dirt, debris, and surface contaminants from the harvested crop. Washing helps eliminate pesticide residues and microorganisms, ensuring food safety.
- **Cooling and temperature management:** Rapid cooling of harvested produce slows down metabolic processes, extending shelf life. Technologies like forced air cooling, hydro-cooling and refrigeration help maintain optimal temperatures.
- **Packaging and storage:** Proper packaging protects crops from physical damage, moisture loss, and contamination. Controlled atmosphere storage and modified atmosphere packaging help in extending the shelf life of perishable produce.
- **Post-harvest treatments:** Techniques like waxing, hot water treatment, and fungicide application are employed to prevent post-harvest diseases, reduce decay, and maintain freshness.
- **Value addition and processing:** Post-harvest technology also focuses on adding value to agricultural products. Processing techniques like drying, canning, freezing, and juicing help transform raw produce into more stable and value added forms, expanding market opportunities and reducing wastage.

Impact of post-harvest technology: The adoption of post-harvest technology has numerous benefits for farmers, consumers, and the environment. Firstly, it reduces post-harvest losses, ensuring that more food reaches the market and ultimately contributes to food security. This is especially crucial in developing countries where food scarcity and malnutrition are prevalent.

Secondly, by extending the shelf life of agricultural produce, post-harvest technology facilitates better market access, enabling farmers to fetch better prices for their crops. It also minimizes price fluctuations due to seasonal variations in supply.

Thirdly, post-harvest technology enhances the quality and safety of agricultural products. Consumers can access fresh, nutritious, and safe food, thereby promoting better health and well-being.

Correspondence to: Riadh Ilahy, Department of Ornamental Horticulture, University of Delhi, Delhi, India; E-mail: IlahyR2020@gmail.com

Received: 03-Jun-2023, Manuscript No. HORTICULTURE-23-24750; **Editor assigned:** 06-Jun-2023, PreQC No. HORTICULTURE-23-24750 (PQ); **Reviewed:** 20-Jun-2023, QC No. HORTICULTURE-23-24750; **Revised:** 02-Aug-2023, Manuscript No. HORTICULTURE-23-24750 (R); **Published:** 09-Aug-2023, DOI: 10.35248/2376-0354.23.10.343

Citation: Ilahy R (2023) The Role of Post-Harvest Technology in Promoting Food Security. J Hortic. 10:343.