

POST HARVEST TECHNOLOGIES

ICAR-IIHR has developed a vast range of Post Harvest Technologies and Value Added Products. These technologies can be ideal for food processing industries and can also be produced at the comfort of your homes in a small scale.

The target end users of these technologies include start-ups, women, commercial growers, wholesale dealers, exporters, start-ups.

Technologies at a Glance:

- 1. Low cost fruit ripening technology**
- 2. Arka High Humidity storage box technology**
- 3. Individual shrink wrapping of fruits and vegetables:** Pomegranate, Capsicum & Sweet orange
- 4. Arka portable vegetable dicing tool**
- 5. Shelf life extension of fresh- cut vegetables**
- 6. Minimally processed onion**
- 7. Raw Mango slice preservation technology**
- 8. Osmotic dehydration technology for fruits & vegetables:** Amla, Mango, Pineapple, Papaya, Jackfruit, Sapota, Guava, Kokum infused Amla
- 9. Fruit bar technology:** Mango, Papaya, Guava
- 10. Watermelon rind candy and pickle**
- 11. Ready to Serve beverages:** Mango, Pineapple, Amla , Watermelon, Passion fruit
- 12. Fruit beverage concentrates (Squash):** Mango, Pineapple, Amla, Grapes, Kokum
- 13. Blended fruit juices:** Mango Papaya beverage, Amla Bottlegourd beverage
- 14. Wine:** Medicated wine, Sapota Wine, Banana Wine
- 15. Culinary pastes:** Green Chilli Paste, Ginger paste, Garlic paste, Onion Paste
- 16. Crushed tomato technology**
- 17. Mushroom fortified instant Rasam mix**
- 18. Dried flower technology**



Low Cost Ripening Chamber

- A low cost ripening tent was developed for ripening of climacteric fruits using ethylene gas released from Ethrel.
- Highly useful for small farmers, traders and vendors to ripen small quantities of fruits (50-200 kg).
- Can be scaled up to accommodate even 50-100 tonnes

Approval & Certifications Required: FSSAI

Arka High Humidity Storage Box

- Zero energy box and does not even require water
- Low cost storage system for freshness retention
- Design is useful for pushcart vendors, retail mandis and retail outlets



Individual shrink wrapping technology

- A packaging technique involves use of a flexible film
- Extends shelf life of non-climacteric and climacteric fruits and vegetables
- Avoids secondary infections
- Maintains freshness and firmness upto 2-3 weeks at room temperature and 10 to 12 weeks at 8°C
- Ideal for Consumer appeal and brand identification
- Suitable for retail outlets and vending vans

Portable Vegetable Dicing Tool

- The tool is heavy duty, sturdy and could be used for continuous dicing of onion in bulk and the tool is long lasting
- The efficiency of the tool is 97.23%
- A handy tool which can save a lot of time and improve productivity



Shelf life extension of fresh-cut vegetables

- Ready to eat and ready to cook vegetables
- Minimally processed
- Shelf life of 6- 21 days at 8°C
- Ease and convenience
- A good venture for entrepreneurship development, and for FPOs and MSMEs

Approval & Certifications required: FSSAI

Minimally Processed Onion

- Minimally processed
- Shelf life of 13 days at 8°C
- Ease and convenience
- A good venture for entrepreneurship development, and for FPOs and MSMEs

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Raw mango slice preservations

- Raw mangoes slices/cubes can be stored for an year or more retaining their colour, texture and flavor
- Ideal for making Mango pickle and chutney
- A good venture for SHG, start-ups and entrepreneurs

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Osmotic Dehydration Technology for Fruits and Vegetables

- Osmotic dehydration preserves wholesomeness of food.
- Flavour, colour, aroma and taste in the processed and stored products is similar to that of fresh fruits
- Ideal as fruit snacks and suitable venture for FPOs, Start-ups, Entrepreneurs, MSME and Food Processing Industry
- The product can be used alone as a dried fruit (snack) or as an adjuvant with other dried fruits like dates, cashew, almond etc.
- Osmotically dehydrated fruits can be used as ingredients in ice-creams confectionary, fruit salads, *kheer*, cakes & bakery products
- Suitable for people of all ages. Highly suitable for children, youth, sports fraternity, mountaineers and defense forces.
- Products like Kokum amla combine the nutritional benefits of both Kokum and Amla and the final product is rich in antioxidants, anthocyanins, hydroxycitric acid, malic acid and vitamins. Kokum amla provides health benefits, such as anti-obesity, immunity besides an excellent flavour and taste.
- Shelf life : 6 months or more under room temperature depending on packaging



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Fruit Bar Technology

- Concentrated and dehydrated fruit Product
- Prepared from fruit pulp
- The product is nutritious and retains colour, flavour and taste similar to that of fresh fruits during storage
- The product can serve as an alternative to chocolates and sugar candies
- Suitable venture for FPOs, Start-ups, Entrepreneurs, MSME and Food Processing Industry
- Suitable for people of all ages. Highly suitable for children, youth, sports fraternity, mountaineers and defense forces
- Shelf life : 6 months or more under room temperature depending on packaging

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Watermelon Rind Candy & Pickles

- A value added product prepared using the white rind of the fruit.
- Permitted color is used in candies to enhance eye appeal and marketability
- Shelf life : 6 months at room temperature
- Candies are suitable for use in confectionery, cakes, bread, custards, etc.

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Ready to Serve (RTS) Beverages & Fruit concentrates (Squashes)

- Standardized protocols for delicious and nutritious Ready to Serve (RTS) beverages and squashes that can be diluted 3-4 times for consumption
- Enhanced nutritional benefits using higher pulp concentration
- Suitable for people of all ages.
- Products have a shelf life of six months

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Blended Fruit Juices:

- Blending of fruit juices helps in improving the nutritional quality of the final product in addition to having a new product with different flavour and taste.

Mango Papaya Beverage

- By blending mango with papaya, the overall acceptability of the papaya juice can be improved

Aonla Bottlegourd Beverage

- A sweet tasting flavour enhanced Amla and bottle gourd blended juices

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Medicated Wine

- Alcohol content: 15-18%
- Healthy beverage suitable for domestic market
- Addition of herbs and spices impart flavour and medicinal properties

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Banana Wine

- Banana wine is a fermented product from good quality ripe banana fruits.
- The product is characterized with golden color, appealing blend of banana and fermentation derived flavor principles.
- The antioxidant qualities of the fruits are well preserved in this product. The product is produced through fermentation with elite yeast strains followed by clarification.
- The product can be stored for 6 months at 10°C

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Sapota wine

- Sapota wine is a golden coloured alcoholic beverage prepared by fermenting sapota fruits to obtain 12% (v/v) alcohol. It is available in dry sweet and flavored forms.
- Preparation process is easy and can be adopted at small scale by small entrepreneurs and farmers organizations
- The beverage has unique aroma, antioxidants and phenols, which is likely to cause positive health effects.
- The product can be stored for 6 months at 10°C



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Culinary Pastes

- Protocols have been standardized for preparation of culinary pastes from onion, garlic, ginger and chilli
- Ideal for use as substitute during non availability of the produce
- Easy to use, and convenient products
- Free from synthetic colour and flavour
- Shelf life of six months with natural and strong characteristic flavour of the fresh produce

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Crushed Tomato Technology

- Unique product having whole tomatoes in crushed and concentrated form
- Rich in ascorbic acid and lycopene
- Shelf life of 9 months at refrigerated temperature and 4 months at room temperature
- Can be used as a substitute to the fresh tomato for various recipes at home as well as in hotels and restaurants
- Can be used as a raw material for other processed tomato products.



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MUSHROOM FORTIFIED INSTANT RASAM MIX

- Value added product for enhancing nutrition in daily diet of people of all ages
- Mushrooms are a rich source of proteins and only natural vegetarian source of vitamin D.
- Good source of iron
- Specially recommended for diabetics and patients with cardiac issues.
- Source of various bioactive substances having antibacterial, antifungal, antiviral, antioxidant, anti-inflammatory, antiproliferative, anticancer, hypocholesterolemic, anticoagulant and hepatoprotective, properties.



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Dried Flower Technology

- Low cost, energy efficient technology for drying natural flowers, leaves, seeds, stems, roots
- An Eco-friendly product
- Dried flowers retain colour and appearance for more than an year.
- Used in preparation of floral arrangement, garland, floral globe, topiary, mementoes. Press dried material are used in the preparation of bookmarks, greetings, wall frames, trays, tea coasters, candle, etc.,

Approval & Certifications Required: Nil

