



Technology 400: Fruit Coating for Retaining Freshness

The technology is a water soluble, biodegradable emulsion that can extend the post harvest life or shelf life of fruits and vegetables by up to two weeks without refrigeration. The coated produce retains all of its natural characteristics (color, texture, total soluble solids (TSS), juice content, crispiness, etc.) and water loss is significantly reduced.

- Coating's ingredients are natural products.
- The very thin film coating (.01 – .02mm) is capable of prolonging freshness at temperatures as high as 109 °F (43 °C)
- The coating and drying process takes 3 minutes and can be automated or applied manually.
- Toxicity studies demonstrated no toxic concentration or adverse effects up to 5000 mg. per kg of body weight.
- Approximately 25% of fruits and vegetables in India, and 10% in the U.S., become spoiled due to inadequate storage and transportation facilities.

Economics:

- Cost effective natural organic raw materials (~ 1% of fruit cost).
- 1 liter of coating will coat 220 lbs. (100 kg) of fruits and cost approx 1.7 cents per pound.

Development Status

- Pilot coating machine designed and fabricated—capacity only 440 lbs. per day.
- Technology demonstrated with produce marketing cooperatives in nine Indian states..

IP Status

- 3 Indian patents issued
- Patent filing of additional formulations for international patent protection.

Partner Opportunities

- Exclusive licensing arrangements.
- Partnerships to build commercial scale pilot plant as per industry standards.

Innovator:

- **Dr. H.M. Chawla:** Professor, Department of Chemistry, Indian Institute of Technology, Delhi
36 years research in this field. 40 research papers published in national & international journals.

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