

Increasing Shelf Life of Foods

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An edible natural wax coating improves the shelf life of eggplant that may help reduce the use of harmful petroleum based oil and improve its quality during storage and transport and, claim scientists at the Indian Institute of Vegetable Research, Varanasi in their recent study.

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India produces about 7.5 million metric tons of eggplant. It is generally transported in moist gunny bags during long distance transport but it suffers from reduced shelf life, loss of weight, skin color and glossiness, and its quality. Traders use petroleum based oil to increase its shelf life and make it attractive but this malpractice makes eggplant harmful for human consumption. This calls for safer technology or products to maintain its freshness and quality for a long time.

Coating fruits and vegetables with an edible material that could provide a barrier for moisture, oxygen, carbon dioxide, and water would delay ripening and preserve texture and flavor for longer periods. A natural product called carnauba wax that is derived from the Brazilian palm tree (*Copernicia cerifera*), which has been in use to delay ripening of pears, has now been tested for its efficacy in eggplant.

Researchers at the Indian Institute of Vegetable Research, Varanasi tested carnauba wax coating in eggplant for improving its weight, firmness, skin color, moisture content, and phenolic content or antioxidant activity during storage. They compared its efficacy with Niprofresh, a commercially available formulation used to enhance the shelf life of fruits and vegetables. They washed the eggplants once with tap water, disinfected with sodium hypochlorite bleach for 5 minutes, washed 3-4 times with distilled water and applied carnauba wax formulation.

The efficacy of carnauba wax was similar to Niprofresh during 2 days and significantly better during longer storage of 4 days. Carnauba wax prevented shrinking, and increased moisture retention up to 12 days of storage. It did not prevent degradation of phenolic compounds or antioxidant potential that was attributed to enzyme activity. Scientists claim, "This treatment can ideally be adopted for enhancing storage life of highly perishable vegetables like eggplant to restrict use of unhygienic practices by the farmers and traders".

Using edible carnauba wax for coating eggplant can help enhance shelf life and may reduce the use of petroleum based oil by farmers and traders. It could also be tested to improve shelf life and quality of other fruits and vegetables during transport and storage.

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