

## Hey! Carambola

Sweet and juicy starfruit, fresh from orchards in Hawaii, has shown up in select U.S. supermarkets during the past year, thanks in part to research by ARS scientists.

Their experiments with more than 2,000 tree-ripened starfruit, also known as carambola, proved that chilling the fruit for 12 days at 34°F or below will kill any fruit fly eggs or maggots that might be hiding in the harvest.

The tests, using more than 300,000 flies, opened the door for federal approval to ship this exotic tropical fruit from the Hawaiian Islands to mainland markets.

John W. Armstrong and colleagues at the ARS Tropical Fruit and Vegetable Research Laboratory in Hilo, Hawaii, demonstrated that three kinds of pests—Mediterranean and oriental fruit flies and melon flies—can't survive the cold treatment. Similar chilling regimens, developed earlier at other labs, are already approved for killing stowaway medflies in about a dozen other kinds of fruits.

In Kurtistown, Hawaii, near the ARS lab, Eric Weinert of Hula Brothers, Inc., Hawaii's largest grower and shipper of commercial carambolas, began using the newly approved procedure last autumn to market carambolas on the mainland. His company has shipped carambolas to

Canada for the past 5 years, harvested from some of Hula Brothers' 4,500 trees.

Other growers in Hawaii, notes Weinert, market carambola for consumption in the Islands, but they might expand production if Hula Brothers' mainland venture is a success.

The cylinder-shaped fruit, about 4 to 7 inches long, ripens to a bright yellow. Its glossy skin is thin, crisp, and doesn't need to be peeled.

Carambola is perhaps best known as a unique, star-shaped

garnish made by slicing crosswise along its soft ribs or ridges. Unlike some starfruit types that look better than they taste, the varieties that Weinert grows in Hawaii are "exceptionally flavorful and always sweet," he says.

Starfruit are low in calories and a good source of vitamin C and potassium. They can be eaten fresh; added to fruit salads, chutney, or stewed fruit dishes; and used to make jellies, tarts, preserves, and juices.—By **Marcia Wood**, ARS.

*John W. Armstrong is at the USDA-ARS Tropical Fruit and Vegetable Research Laboratory, P.O. Box 4459, Hilo, HI 96720; phone (808) 959-4336, fax (808) 959-4323. ◆*

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