

A seemingly unending string of hot, sunny days produces an ideal environment for growing tropical and subtropical fruit at the southern tip of Florida.

Two unusual tropical fruits—lychee and longan—are now important commercial crops there. In 1996, Florida growers harvested 1.37 million pounds of lychees, valued at \$2.75 million, and 875,000 pounds of longans worth \$1.75 million.

Last year, scientists at the ARS Subtropical Horticulture Research Station in Miami, Florida, ensured the status of these fruits as viable commercial crops by proving that neither the longan nor the lychee hosts the dreaded Caribbean fruit fly.

Entomologists Michael K. Hennessey (now with the U.S. Environmental Protection Agency) and Walter P. Gould were aided by entomologist Jennifer L. Sharp and plant pathologist Raymond G. McGuire.

“Florida lychee and longan growers ship their fruit throughout the United States,” says Hennessey. “But California had considered putting an embargo on the fruit because it was thought capable of harboring the Caribbean fruit fly.”

Working with the Lychee and Longan Committee of the Tropical Fruit Growers of South Florida, Inc., Hennessey and Gould developed a protocol that proved neither fruit to be infested by this pest. It has been approved for use in California.

“This could very easily have been a case of an internal quarantine of two fruit crops that are easy to grow here in south Florida,” Gould explains. “But with the help of local growers, we proved that these fruits pose no agricultural risks.”

The reddish-looking, exotic lychee, a favorite fruit in Southeast Asia, is about the size of a walnut and easily peeled to expose sweet insides that can be eaten fresh, canned, or dried.

## Florida Growers Like Lychees & Longans

BARRY FITZGERALD (K2296-2)



Lychees, *Litchi chinensis*.

Also sweet tasting, longans are about the size of grapes and grow in bunches. A hard, tan-colored peel covers white fruit that clings to a single seed.

For the research project, south Florida growers supplied fruit from six lychee groves (Mauritius and Brewster varieties) on early-, mid-, and late-season sampling dates. Of the 450 fruits collected, a third were held as a control, while the remainder was exposed for a day to numerous fertile female Caribbean fruit flies.

“We confirmed the fertility of the flies by exposing them to guava, in which the flies readily lay eggs,” Gould explains. “We also made cuts on one group of lychees, providing an enticing place for egg laying.”

But, to no avail. After exposure, the lychees were held for 30 days to allow time for any eggs laid in the fruit to hatch and emerge as maggots.

“After carefully inspecting each lychee, we found no maggots or larvae, indicating that no eggs had been laid,” says Gould. “During the 2-month fruiting season, we also placed fly traps in each sample grove and inspected them weekly. We found no flies.”

Hennessey and Gould repeated the procedure with Kohala longans—and again with top-quality longans and lychees from the packinghouse.

“Again, we got the same results: no flies,” Gould reports.

Using guava as a control, Hennessey tried one more test: covering bunches of longans and lychees on the trees with pollination bags holding five fertile Caribbean fruit flies.

After 24 hours, there was no evidence that the flies had infested the longans or lychees, but they had attacked the guavas. After 30 days, there was still no sign of attack on the longans or lychees, but the guavas were heavily infested.

As a backup, in case the fruit had become infested, McGuire evaluated fruit quality after irradiation and a cold treatment, developed by ARS, of longans and lychees. Both fruits held up well under irradiation, maintaining acceptable market quality. However, chilling caused surface discoloration of longans.

“There’s an expanding market for tropical fruits, in part because health-conscious consumers are including more fruits and vegetables in their diets and want a variety to choose from,” says Hennessey. “Our aim is to keep that supply plentiful.”—By **Doris Stanley, ARS.**

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Longans, *Euphoria longana*.