

Improved Lure for Malaysian Fruit Flies

A new lure spells trouble for the Malaysian fruit fly. ARS researchers in Hilo, Hawaii, and Albany, California, have developed a blend of compounds as an improved means to detect, survey, and control the pest.

Sometimes called the solanaceous fruit fly, the Malaysian fruit fly, *Bactrocera latifrons*, lays its eggs in peppers, tomatoes, eggplants, and cucurbits. A relative of the infamous Mediterranean fruit fly, it is about the size of a common house fly. It has a rusty-brown abdomen, bright-yellow stripes at the base of its wings, and a single black spot at the tip of each wing.

Native to South and Southeast Asia, the Malaysian fruit fly has now established itself on all major islands of Hawaii. If undetected in contraband produce, it could hitchhike to the continental United States and pose a considerable threat to mainland agriculture.

The easily made blend combines a colorless chemical called alpha-ionol and cade oil—a dark-brown liquid from prickly juniper, *Juniperus oxycedrus*.

ARS scientists Roy T. Cunningham at Hilo, Robert A. Flath at Albany, and Terrence P. McGovern (deceased) had earlier patented alpha-ionol as a Malay fly lure. Now, ARS experiments in Hawaii with more than 1 million lab-reared Malaysian fruit flies have shown that adding cade oil to alpha-ionol makes the lure more effective. Cunningham and Flath (now retired) and Nicanor J. Liquido, formerly with ARS at Hilo, along with Grant T. McQuate of ARS at Hilo, are currently seeking a patent for their invention.

Made without need for solvents or additives, the blend can be applied easily to wicks like those used in standard insect traps. Traps holding wicks treated with the new blend could be used in detection programs in states like California. There, pest control workers monitor traps year-round to detect outbreaks of other insect species before they build up.—By **Marcia Wood**, ARS.

For technical information about patent application number 09/120,521, "Attractants for *Bactrocera latifrons* (Hendel)," contact Grant T. McQuate, USDA-ARS U.S. Pacific Basin Agricultural Research Center, Stainback Hwy., P.O. Box 4459, Hilo, HI 96720; phone (808) 959-4300, fax (808) 959-4323, e-mail mcquate@aloha.net. ♦

Aloha! to Hawaiian Bananas

Freshly harvested bananas from Hawaii may soon begin reappearing in mainland markets thanks to extensive research by ARS scientists in Hilo, Hawaii.

Hawaii's banana growers haven't shipped the fruit to the mainland since 1984. That's when ethylene dibromide gas, used to disinfest bananas and other fruits of any hitchhiking fruit flies, was banned. But now ARS experiments demonstrate conditions for safely shipping the bananas without need for disinfestation treatment.

Mediterranean and oriental fruit flies, already established in Hawaii, are a constant threat to mainland agriculture. They can attack more than 200 different fruits and vegetables.

In laboratory and outdoor experiments, ARS entomologist John W. Armstrong and colleagues showed that the bananas won't harbor these pests if shipped full-size, green-skinned, and without cuts or punctures.

Armstrong and co-workers did the work at ARS' U.S. Pacific Basin Agricultural Research Center in Hilo.

Besides helping Hawaiian growers resume shipments to the U.S. mainland, the ARS studies are helping them capture sales in new foreign markets such as Japan.

The scientists used laboratory-reared medflies and oriental fruit flies and tested thousands of bananas from nearly two dozen plantations throughout the state.

"Our tests," says Armstrong, "showed that risk of infestation by the oriental fruit fly and medflies is negligible under normal commercial conditions." As a result, USDA's Animal and Plant Health Inspection Service approved new, workable regulations for shipping the bananas.

The varieties tested included three different kinds of the familiar Cavendish-type banana, as well as the specialty Hawaiian apple banana, which has a very sweet, custardlike flavor. Says Armstrong, "This is a superb banana for niche markets on the mainland or in foreign countries."

Collaborators in the experiments included the University of Hawaii Cooperative Extension Service and the Hawaii Banana Industry Association. Banana growers in Hawaii produced about 21 million pounds of bananas, worth about \$7 million, in 1998.

The United States annually imports more than 8 billion pounds of bananas. They are good sources of potassium, fiber, and vitamin C.—By **Marcia Wood**, ARS.

John W. Armstrong is at the USDA-ARS U.S. Pacific Basin Agricultural Research Center, Stainback Hwy., P.O. Box 4459, Hilo, HI 96720; phone (808) 959-4336, fax (808) 959-4323, e-mail jwa@aloha.net. ♦

