

# Banana bunchy-top virus poses threat to plants in Hawaii

## KIA'I MOKU

By Lissa Fox



A little over two years ago, Angela Kepler found a diseased banana plant

on her neighbor's property.

"It really freaked us out!" she recalled. "As soon as we found out, we ran next door and sprayed for aphids."

The neighbor's banana plant was infected with banana bunchy-top virus, or BBTV.

"BBTV is the worst," Kepler said. "Now we help check everyone in the neighborhood."

Angela Kepler and Frank Rust are writing a book on how to identify different banana varieties. Of the 32 different kinds on their property, most are rare Polynesian bananas collected from the wild or someone's backyard. They photograph and observe each plant from keiki to fruiting to learn the key characteristics unique to each type. And, they know what banana bunchy-top virus can do.

The virus is the most serious known disease of bananas. Infected plants produce shrunken, malformed leaves and distorted fruit, if they fruit at all. The virus eventually kills all plants in an infected mat, or root mass. There is no cure for the disease. Removing infected plants and preventing spread of the virus is the only control: a necessary precaution if bananas are to continue being grown in Hawaii. The virus threatens the banana industry, backyard farmers and rare, culturally significant banana varieties, such as those grown and collected by Kepler and Rust.

"We've seen a tremendous demise in the last 10 years," Kepler said.

The virus passes from an infected plant to an aphid, which transmits the virus when it feeds on a healthy plant. Then, people spread the virus great distances when they transport infected plants. Anyone who moves or harbors infected plants puts their neighbors' plants at risk.

Banana bunchy-top virus is widespread in Southeast Asia, the Philippines, Taiwan, the South Pacific, and in parts of India and Africa. First discovered in Hawaii in 1989, the virus is established widely on Oahu, and has been detected on Hawaii island, Kauai, Maui and Molokai.

"We haven't been able to collect bananas from other islands or share ours, due to BBTV," Kepler said.

On Maui, backyards in Kihei and Pukalani suffer the densest infestations of the disease. Banana farms in Kula and, most recently, Central Maui have been wiped out. Not surprisingly, the virus thrives in Lahaina as well; drier climates are better aphid habitat. Scattered infestations of the virus have been found in Haiku and Huelo as infested material has been brought into the area. To date, Hana, Keanae and Kipahulu are free of the virus.

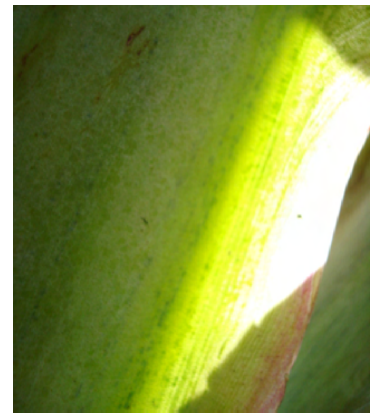
Controlling and preventing the spread of the virus is everybody's business. If you have banana plants, check them regularly for symptoms of the disease. Initial signs of infection are dark "Morse code" streaks named for the irregular pattern of dashes and dots along the veins, and "J-hooks" where the leaf veins along the blade of the leaf curve into the midrib. As the infection becomes established, new leaves emerge with difficulty, giving the plant the appearance of having the "bunchy top" that the disease is named for. New leaves are narrow and lance-shaped, often with yellowing around the leaf edges. Infected plants



Above: A plant infested with banana bunchy-top virus (left) is seen next to a healthy plant. Scott Nelson, CTAHR photo.



Above Left: A plant shows signs of the virus with "J-hooks," where the leaf veins along the blade of the leaf curve into the midrib. Scott Nelson, CTAHR photo. Right: Morse code streaking is seen on a leaf. MISC file photo.



stop producing fruit, and any keiki from the infected mat are stunted severely.

Controlling the spread of the virus requires control of the vectors: aphids and infected plants. Regularly spraying one's plants with soapy water controls the banana aphid and can help prevent infection. The Maui Invasive Species Committee can help people identify and control infected plants. Infected plants should be killed on-site and left standing until completely dead, typically within six months of treatment. Removing infected plants will reduce spread of the virus; aphids won't feed on infested plants. Healthy bananas can be replanted in the same place after the mat has died completely.

If you suspect your banana plants are infected with banana bunchy-top virus, call the Maui Invasive Species Committee at

573-6472. Due to the risk of the virus, banana plants should not be moved between communities.

"We all want to share bananas. People want to give each other plants. But don't bring bananas from Oahu, Hawaii island or Kauai," Kepler cautioned. "And whatever you do, don't take bananas to the Hana and Kipahulu area."

■ Lissa Fox is the public relations and education specialist for the Maui Invasive Species Committee. "Kia 'i Moku," (Guarding the Island) is prepared by the Maui Invasive Species Committee to provide information on protecting the island from invasive plants and animals that can threaten the island's environment, economy and quality of life.