Pests in Brief

NEW BACTERIAL DISEASE? In November, 2010, a new bacterial disease was found on several hybrid maize varieties in the University of Hawaii Waimanalo Research Station. Twelve hybrid varieties planted by Dr. James Brewbaker showed varying degrees of susceptibility with symptoms ranging from necrotic spots and leaf streaks to large water-soaked areas and browning of stalks. Isolations were made from infected tissue of six of the twelve hybrid varieties and physiological and genetic tests were performed to determine the species and characterize the pathogen. Stay tuned for an update on the possible relationship between this pathogen and a similar pathogen which causes bacterial heart rot of pineapple.
Early Detection in the Hawaiian Islands
Important Pest Introduction Avoided

Brown Marmorated Stink Bug
(*Halyomorpha halys*)

On February 2, 2011, a man and his wife in Pearl City, Oahu, opened a shipping crate in their driveway. The packing material contained about 40 adult insects, both alive and dead. The couple collected 10 or so in a jar and killed the rest. The insects were brought to the Hawaii Department of Agriculture and identified by the insect taxonomist Bernarr Kumashiro as *Halyomorpha halys*, the brown marmorated (=marbled) stink bug. This stink bug was first reported in Pennsylvania in 1998 and is now in about 25 states and still spreading. Its native range is China, Japan, Korea, and Taiwan. It is a serious pest of agriculture with a broad host range, feeding on many fruits and vegetables, ornamental plants and weeds.

Contact Your Local Diagnostic Clinic, Department of Agriculture, or University—Page 8
NOT WANTED

Fruit Flies (Family: Tephritidae)

THESE ECONOMICALLY IMPORTANT SPECIES ARE A THREAT TO MOST ISLAND FRUITS

(A) Malaysian fruit fly (Bactrocera latifrons), (B) Mango fruit fly (B. frauenfeldi), (C) Mediterranean fruit fly (Ceratitis capitata), (D) Melon fly (B. cucurbitae). [Insect lengths 7–10 mm]

Distribution:

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<th>Hawaii</th>
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Micronesia = Federated States of Micronesia, N. Mariana = Commonwealth of the Northern Mariana Islands, Palau = Republic of Palau

Impact: Feeding larvae cause heavy fruit losses that lead to high control costs, loss of export markets, and cost of building and/or maintaining eradication facilities. For example, the Mediterranean fruit fly is one of the world’s most destructive pests of fruits and vegetables and ranked first among fruit fly species.

Host Range: Malaysian—fruits in the potato family and cucurbits; Mango—cashew, mango, soursop, breadfruit, citrus (>70 hosts); Mediterranean—many, but prefers thin-skinned, ripe, succulent fruits (>400 hosts); Melon—melons, peppers, tomatoes, etc. (>80 hosts); Oriental—most fleshy fruits (>300 hosts); Pacific—breadfruit, guava, papaya (>40 hosts); Polynesian—avocado, papaya, mango, citrus (>50 hosts).

Likely Locations: Any place with unexplained rotting and premature dropping of fleshy fruit.

For More Information
1) Pacific Fruit Fly Web (SPC) [http://www.spc.int/pacifly/](http://www.spc.int/pacifly/)

Impact: Financial losses among nurseries in affected areas of the U.S. and Europe. Sudden oak death may become one of the most damaging forest diseases in U.S. history, but hosts among major forest tree species are still limited. Foliar symptoms have recently been found on coast redwood (Sequoia sempervirens) and Douglas fir (Pseudotsuga menziesii), however, and the host list is still growing. Potential impact among the Pacific Islands is unknown.
(A) Dieback is a second disease type. *P. ramorum* enters shoot tips or along branches, eventually girdling and killing them. (B) Dead, hooked shoot tip is a common symptom of dieback in tanoak saplings. (C) Leaf spot is the third and most common disease type and affects woody plants of the forest floor, nurseries, and landscapes. Leaf damage on California bay laurel. (D) Rhododendron is an important host in nurseries of Europe and U.S. (E) Leaf spot on camellia. (F) Sporangia (clear) of *P. ramorum* are the only known method of disease spread; thick-walled chlamydospores (brown) are probably important for survival. Scale bar=250 micrometers

Likely Locations: Nurseries and forests with known hosts are the most common disease sites in affected U.S. states and Europe. On the U.S. Pacific coast, rhododendron and other understory plants may show foliar or dieback symptoms; look for cankers on susceptible tree species.

Host Range: APHIS lists 127 hosts—45 confirmed, 82 probable (testing incomplete)—and the list continues to expand (see References). In Hawaii, 16 non-native plant genera are on the list including rhododendron, rose, camellia. willow (*Salix* spp.), bay laurel (*Laurus nobilis*), and maidenhair fern (*Adiantum* spp.). Potential hosts among native plants in the Pacific Islands are unknown.

For More Information
Pests of Concern

ARTHROPODS

Africanized honey bee (*Apis mellifera scutellata*) [http://www.invasivespeciesinfo.gov/animals/afrrhonbee.shtml](http://www.invasivespeciesinfo.gov/animals/afrrhonbee.shtml)


red imported fire ant (*Solenopsis invicta*) [http://entnemdept.ufl.edu/creatures/urban/ants/red_imported_fire_ant.htm](http://entnemdept.ufl.edu/creatures/urban/ants/red_imported_fire_ant.htm)


silverleaf whitefly (*Bemisia argentifolii*) [http://www.entnemdept.ufl.edu/creatures/veg/leaf/silverleaf_whitefly.htm](http://www.entnemdept.ufl.edu/creatures/veg/leaf/silverleaf_whitefly.htm)


DISEASES


citrus canker (*Xanthomonas axonopodis*) [http://www.apsnet.org/publications/imageresources/Pages/IW00011a.aspx](http://www.apsnet.org/publications/imageresources/Pages/IW00011a.aspx)

citrus greening (*Candidatus Liberibacter asiaticus*) [http://www.crec.ifas.ufl.edu/extension/greening/index.shtml](http://www.crec.ifas.ufl.edu/extension/greening/index.shtml)


iris yellow spot virus [http://aces.nmsu.edu/pubs/_h/H-255.pdf](http://aces.nmsu.edu/pubs/_h/H-255.pdf)

lethal yellowing of palm (*Candidatus Phytoplasma palmae*) [http://edis.ifas.ufl.edu/pp146](http://edis.ifas.ufl.edu/pp146)


PLANTS


fireweed (*Senecio madagascariensis*) [http://www.hawaiinvasivespecies.org/pests/fireweed.html](http://www.hawaiinvasivespecies.org/pests/fireweed.html)


miconia (*Miconia calvescens*) [http://www.hawaiinvasivespecies.org/pests/miconia.html](http://www.hawaiinvasivespecies.org/pests/miconia.html)

Pests listed in ‘BOLD’ are not, to our knowledge, present in the American Affiliated Pacific Islands.

IF A LINK IS INOPERABLE, TRY COPYING AND PASTING IT DIRECTLY INTO YOUR BROWSER
Websites

PEST INFORMATION
American Samoa: http://www2.ctahr.hawaii.edu/adap2/ascc_landgrant/technical_papers.asp#brochures
Bugwood (images): http://bugwood.org/
Crop Knowledge Master: http://www.extento.hawaii.edu/kbase/Crop.crop.htm
Hawaii Invasive Species Council: http://www.hawaiiinvasivespecies.org/pests/
Hawaii Department of Agriculture (new pest advisories): http://hawaii.gov/hdoa/pi/pps/NPA
Hawaiian Ecosystems at Risk (Pacific invasive species): http://www.hear.org/
Master Gardeners (national pest list): http://wiki.bugwood.org/npdn-mg-training
Western Micronesia Regional Invasive Species Council: http://guaminsects.net/gisac/index.php?title=Main_Page

DIAGNOSTIC CLINICS AND DIAGNOSTICIANS
American Samoa Comm. College, Land Grant: Mark Schmaedick m.schmaedick@amsamoa.edu (684) 699-1575
University of Guam: Robert Schlub (plant diseases) rlschlub@uogmail.edu (671) 735-2089; Aubrey Moore (insects) amoore@uogmail.edu (671) 735-2141
Hawaii Department of Agriculture: Bernarr Kumashiro (insects) Bernarr.R.Kumashiro@hawaii.gov (808) 973-9534; Mann Ko (plant diseases) Mann.P.Ko@hawaii.gov (808) 973-9546
University of Hawaii at Manoa (diagnostic clinic): Honolulu adsc@ctahr.hawaii.edu, (808) 956-6706
Komohana Research Extension Center, Hilo komohana@ctahr.hawaii.edu, (808) 981-5199

ORGANIZATIONS
Pacific Islands Distance Diagnostics and Recommendation System (PIDDRS): http://dddi.org/pacific/
Western Plant Diagnostic Network https://www.wpdn.org/index.php
Western Pacific Tropical Research Center (Guam) http://www.wptrc.org/
National Plant Diagnostic Network http://www.npdn.org/

EDUCATION AND TRAINING
Extension Disaster Education Network http://eden.lsu.edu/Pages/default.aspx
NPDN First Detector Training Sites: http://cbe.at.ufl.edu/, http://www.npdn.org/first_detector
NPDN First Detector Newsletter: http://www.npdn.org/newsletter
Protect U.S. invasive species network http://www.protectingusnow.com/
WPDN Homepage: https://www.wpdn.org/index.php
WPDN and Pacific First Detector Newsletters: https://www.wpdn.org/newsletters

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