CTAHR alumni & friends
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News & Events

DOWN WITH BASIL DOWNY MILDEW

On Friday, Jan. 28, CTAHR extension agents identified the pathogen Basil Downy Mildew (BDM) (*Peronospora belbahrii*) as infecting basil at several farms in Wai'anae. It has not yet been found anywhere else in Hawai'i, and CTAHR is partnering with the Hawai'i Department of Agriculture (HDOA) to fight back quickly before the disease gets a stronger foothold in the Islands. Basil is a $6.8M crop in Hawai'i, and growers in some areas of the Mainland have lost their entire crop to this infectious and fast-spreading pathogen. BDM is characterized by black lesions on the lower leaves and black or purple-gray mildew growing on the underside of the leaves. The leaves then turn yellow and eventually become splotched with black or brown and die. The black spots on dying leaves may be mistaken for sunburn, but sunburned leaves lack the spores characteristic of BDM. The disease can be spread by infected seeds and by its numerous spores, which infest leave, soil, and seeds and can be dispersed great distances by the wind. Growers who have confirmed that their fields are infected with BDM should remove all infected leaves, including those that have fallen to the ground, and burn them. After infected leaves are removed, a fungicide should be applied to the new growth. Soil, tools, and equipment, including boxes, trucks, gloves, work clothes, benches, and anything else that could be infected, should be sanitized. Basil should also be grown so as to reduce leaf wetness and humidity, with enough space between the plants so that air can circulate freely among them and the use of drip irrigation. Cornell University's Extension Service has also put out a **useful fact sheet about BDM**.

NEW EFFORTS TO CONTROL THE COFFEE BERRY BORER

CTAHR, along with the HDOA and the USDA-ARS Pacific Basin Agricultural Research Center, continues to combat the coffee berry borer (CBB), the potentially devastating coffee pest first found in south Kona last September. TPSS is advertising for an Assistant Extension Agent, who will be located in Kona and deal with coffee and orchard crops, and hopes to fill the position by June. CTAHR coffee specialist Skip Bittenbender, with the help of Elsie Burbano (PEPS), organized several well-attended workshops for coffee farmers and processors on managing CBB. He spoke to the Kona Coffee Farmers' Association at their Coffee Expo on Jan. 28, where he distributed copies of a CTAHR-produced flyer (developed in collaboration with HDOA) describing how to prevent the spread of CBB. Copies of the flyer will also be available from the Kona Cooperative Extension office, from CTAHR's Office of Communication Services, and from the CTAHR CBB Web site, which will soon also have other information. Entomologists Russell Messing, Mark Wright, and Elsie

Burbano (all PEPS) are investigating the life cycle of CBB in Hawai‘i, alternate plant hosts that might help it spread, tools such as vacuums to help farmers clean up infested coffee cherries in their fields, and least-toxic compounds such as neem, which might prevent female CBB from laying eggs. Engineer Loren Gautz (MBBE), is working with USDA entomologists and CTAHR graduates Eric Jang and Peter Follette on using heat, radiation, and fumigation to treat CBB and on traps and lures to monitor its movement. Michael Kawate and Julie Coughlin (both PEPS) are investigating possible pesticides, while Interim Associate Dean Ken Grace is a member of the executive committee of the statewide CBB Task Force.

Grants & Awards

GROWING ENERGY

CTAHR was recently awarded $6M by the U.S. Department of Energy to increase Hawai‘i’s energy security by developing high-yielding tropical feedstocks that are economically viable and sustainable. Establishing local production of transportation fuels will reduce our dependency on imported fossil fuels and generation of greenhouse gases. Faculty from the departments of MBBE, NREM, TPSS and COF are involved in the project, along with partners Hawaii Natural Energy Institute, Hamakua Springs Water, and Hawaii Commercial & Sugar. Researchers will start by testing a variety of biochemical and thermochemical approaches to conversion—that’s the actual making of energy—to maximize the yield of biofuels and other valuable co-products. They’ll also look at which bioenergy crops are best at lowering the carbon dioxide in the atmosphere by trapping it in the soil. Finally, the project will study the economic, environmental, and community impacts of implementing a renewable energy system in a rural community. This information is expected to aid other communities in making decisions on investing in renewable energy. For more information, you can contact the principal investigator, Andrew Hashimoto, at aghashim@hawaii.edu.

Spotlight on Our Community

GO(A)T HUNTING REGULATIONS?

Christopher Lepczyk (NREM, pictured) and his graduate student Deirdre Duffy were recently featured in the journal ***Environment Hawai‘i***, arguing for better control of the feral animal population in State forests and Natural Area Reserve Systems (NARS). Deirdre’s research on the importation of birds and ungulates—hoofed mammals like goats and sheep—into Hawai‘i as game animals shows that the majority were brought in after World War II, when hunting became more popular on the Mainland. Chris says that mouflon, pronghorn antelope, black-tailed deer, and mouflon-sheep hybrids were introduced because people liked to hunt them in the States, but they turned out to be a disaster for Hawai‘i’s far different forests and native species. He points out that new species stopped being introduced in the 1970s, but much of the damage was already done. Since what he argues are misguided conservation laws sharply limit hunting periods and methods, mouflon and goats range freely and eat up the native vegetation, such as mamane, that native birds need for food or habitat. As a result, the ungulate population is growing and bird populations are dropping fast. On the slopes of Mauna Kea, the endangered palila and nene are especially impacted. The native plant species the ungulates eat are also being eradicated and replaced with invasive non-native vegetation. Chris argues that Hawai‘i

needs to start keeping track of the number of animals that hunters take and to adjust limits upward to better control the populations. Hunting license fees should also be used to hire wildlife biologists, as is done on the Mainland, to “manage wildlife populations and restore habitat.” Dealing with the various stakeholders and overhauling the outdated system of rules will be “very challenging,” he says, but necessary.

NAME THAT BUG

On Jan. 22, UH’s Insect Museum, which is directed by Dan Rubinoff (PEPS) held its annual Insect Sort, where members of the public and the larger UH community are invited to join museum staff to sort through and catalogue the thousands of insects--the good, the bad, and the creepy--that the museum receives annually. This year over 27 members of the UH community, including professors, staff, and grad students from other colleges, were joined by many members of the public, including military, Master Gardeners from Pearl City, and a Hawaii Public Radio reporter. NPR aired a **story about the Sort** on Jan. 28 on 88.1FM, and another will air Feb. 1 at 6:30 a.m. As well as providing some great public outreach, over 5,000 insect specimens were sorted and added to the museum’s catalogue and database, bringing the total number of curated specimens available for study to over 230,000. At least 10 graduate and undergraduate students were trained in insect identification during the sort.