



STATE OF CALIFORNIA
DEPARTMENT OF FOOD AND
AGRICULTURE
1220 N Street, Room A-372
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PHYTOSANITARY ADVISORY

NO. 33-2007

DATE: November 19, 2007
TO: All County Agricultural Commissioners
FILE: Ohi'a Rust Regulations – Hawaii
SUBJECT: Hawaii Restrictions on Importation of All Myrtaceae Plants

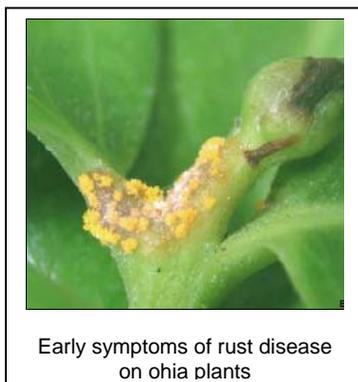
The Hawaii Department of Agriculture (HDA) has issued an interim rule (attached), effective August 28, 2007, restricting all shipments of plants and plant parts in the Myrtaceae family from California, Florida and South America to Hawaii due to the presence of ohi'a rust (*Puccinia psidii*) also called guava rust or eucalyptus rust. Plant material in the Myrtaceae family commonly imported into Hawaii includes cut flowers and foliage such as myrtle (wax flowers, tea-tree, feather flowers, etc.) and eucalyptus.

The Myrtaceae family is a host of ohi'a rust and a pathway for the spread of the disease in Hawaii. Ohi'a rust infects Hawaii's native ohi'a trees (*Metrosideros sp.*), which make up approximately 80 percent of Hawaii's remaining native forest. This rust also affects economically important plants such as eucalyptus. This quarantine is to prevent more virulent strains of the ohi'a rust from becoming established in Hawaii. For more information on ohi'a rust please refer to the attached HDA ohi'a rust pest advisory.

All plants and plant parts from the Myrtaceae family in California are prohibited entry to Hawaii except for:

1. Seeds which have been subject to treatment approved by HDA's Plant Quarantine Branch
2. Tissue cultured plants in a completely enclosed container accompanied by a certificate issued by a state official affirming that the plants are certified by a qualified plant pathologist to be free of the ohi'a rust pathogen
3. Plants and plant parts in the family Myrtaceae from areas not known to be infested with ohi'a rust when accompanied by an original certificate of origin

CDFA is working with HDA to determine methods of certification from California counties where this pest is not known to occur or is of limited distribution. Please call a pest exclusion biologist at (916) 654-0312 with questions or if you learn of shipments of Myrtaceae that are held or rejected in Hawaii.



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PLANT QUARANTINE INTERIM RULE 07-2

Restrictions on the Importation into Hawaii of Plants and Plant Parts in the Family Myrtaceae

Under authorization granted in Section 150A-9.5, Hawaii Revised Statutes (HRS), the Hawaii Department of Agriculture ("Department") hereby establishes this interim rule to impose a quarantine restricting the importation into Hawaii of hosts of the rust fungus disease, *Puccinia psidii*, now referred to in Hawaii and in this interim rule as "'ohi`a rust." Hosts known to spread 'ohi`a rust are all plants and plant parts in the family Myrtaceae from areas known to be infested with 'ohi`a rust. South America, and the states of Florida and California have been determined to be areas infested by 'ohi`a rust. This quarantine is established to prevent the introduction of additional and possibly more virulent strains of the plant pathogen, 'ohi`a rust, into Hawaii.

The introduction into Hawaii of plants and plant parts in the family Myrtaceae from South America and the states of Florida and California is prohibited except for: (1) seeds which have been subject to treatment approved by the Department's Plant Quarantine Branch, (2) tissue cultured plants in a completely enclosed container accompanied by a certificate issued by an official of the state or country of origin affirming that the plants are certified by a qualified plant pathologist to be free of the pathogen, *Puccinia psidii*, now known in Hawaii as 'ohi`a rust, and (3) plants and plant parts in the family Myrtaceae from areas not known to be infested with *Puccinia psidii* when accompanied by an official certificate of origin.

Pursuant to section 150A-14, HRS, violation of this interim rule is a misdemeanor subject to a fine not less than \$100 and not more than \$10,000 per violation. For a second offense committed within five years of a prior offense, the fine shall be not less than \$500 and not more than \$25,000.

This interim rule shall be effective for not more than one year from date of issuance.

Dated at Honolulu, Hawaii this 28th day of August 2007

SANDRA LEE KUNIMOTO
Chairperson, Board of Agriculture

Effective August 28, 2007



Ohia Rust

Puccinia psidii Winter

Eloise M. Killgore and Ronald A. Heu



Figure 1. Early symptoms of rust disease on ohia

Introduction. In April 2005, an ohia plant, *Metrosideros* sp., infected by a rust disease was submitted to the University of Hawaii (UH), College of Tropical Agriculture and Human Resources (CTAHR), Agricultural Diagnostic Service Center's (ADSC) Plant Disease Diagnostician Desmond Ogata by a Waimanalo (Oahu) grower who specializes in native plants. There are no records of a rust disease on ohia in Hawaii or elsewhere. In May 2005, rose apple, *Syzygium jambos*, heavily infected with a similar rust disease was observed on the Maunawili Trail by Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW) staff. In July 2005, two species of *Eugenia* – *E. koolauensis* and *E. reinwardtiana*, and guava *Psidium guajava* were observed in Makiki with a similar rust disease. Infected ohia plants have since been observed in Manoa, Makiki, and Kalihi. All the confirmed reports of this rust disease are from the island of Oahu.

Symptoms. Symptoms of the disease first begin as tiny bright yellow powdery eruptions in a circular pattern on the leaf or stem surface (Fig. 1). These infection loci or spots expand and become necrotic (Fig. 2), and spread over the entire leaf, stem, or shoot. Leaves and stems can be deformed by the disease (Fig. 3 and 4), and growing tips can die back if the infection is severe. These symptoms are more likely to be seen on tender, young growing points.



Figure 2. Rose apple with typical symptoms of yellow ring patterns on foliage followed

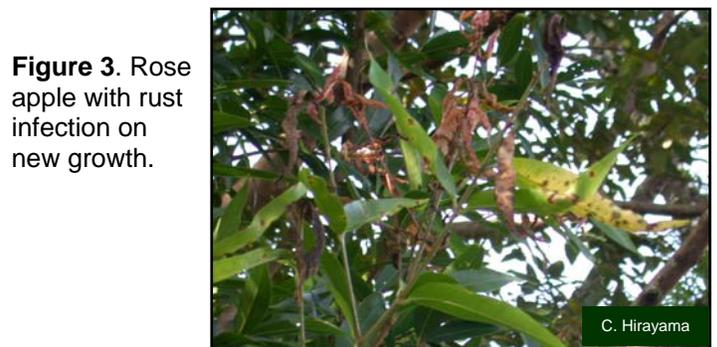


Figure 3. Rose apple with rust infection on new growth.



Figure 4. Advanced disease condition on ohia plant.

Although not yet seen in Hawaii, the disease can also cause similar symptoms on fruit.

Identification. Based on records of a rust disease that is known to occur on ohia-related plant species, this rust was tentatively identified as *Puccinia psidii* Winter. The identification of this rust pathogen was later confirmed (2006) by Dr. Shaobin Zhong, UH CTAHR PEPS, using DNA profiles for *P. psidii*. According to records from Brazil (1) and Florida (2), *P. psidii* has a very wide host range, which includes eucalyptus, paperbark tree, guava, rose apple, allspice, myrtle, species of *Eugenia* and others. It is commonly referred to as eucalyptus rust and guava rust in Florida, the Caribbean, and Central and South America.

Distribution. Since April 2005, surveys and request for disease sightings have shown that this rust is widespread in the State, occurring on various members of the Family Myrtaceae on all the Hawaiian islands (except Niihau).

Management. At the present time, there is no approved fungicide that can be used in controlling this disease. The Department recommends good sanitation practices, such as, removing and bagging and or destroying infected leaves or other plant parts as soon as symptoms appear. Also, keeping the foliage dry when irrigating will help in lowering disease levels.

Movement of infected plants, especially ohia, between islands is not recommended due the increase risk of spreading the disease. And because of the risk involved with introducing new strains of this rust as well as other harmful diseases and pests of ohia into the Islands, we recommend that everyone refrain from importing all ohia and ohia-related plants (see list above) into the State.

Acknowledgements. Robert Hauff, Forest Health Coordinator, DLNR-DOFAW; Desmond Ogata, UH-CTAHR-ADSC Plant Disease Clinic for photo; Clyde Hirayama HDOA Technician for photo; and all those who called the Department for sightings of the rust.

References

- Coutinho, T.A., Wingfield, M. J., Alfenas, A.C., and Crous, P.W. 1998. Eucalyptus rust: a disease with the potential for serious international implications. *Plant Disease* 82:819-825.
- Rayachhetry, M.B., Van, T.K., Center, T.D., and Elliott, M.L. 2001. Host range of *Puccinia psidii*, a potential biological control agent of *Melaleuca quinquinervia* in Florida. *Biological Control* 22:38-45.