Cooperative Extension Service
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College of Tropical Agriculture & Human Resources
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Insect Pests
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Taro Root Aphid

Taro root aphid, *Patchiella reaumuri*, is one of the most destructive insect pests of dryland (upland) taro. Taro root aphids feed on the taro roots, and this can greatly reduce plant vigor, yield, and quality. Crop losses of up to 75–100 percent have been known with 'Lehua', 'Chinese', and dasheen taro on the island of Hawaii.

Damage from taro root aphid feeding is often extensive during drought conditions, and it can be especially severe on young plants in new plantings. The damage can be extensive because the aphid feeding activity may go undetected under ground.

The yellow-gray aphid usually is covered with a mass of fine, white, cottony, waxy threads. Signs of infestation appear as white mold on the fibrous taro roots (Figure 1). When populations are high, colonies are found both on roots and around the basal sections of the leaf sheaths, just above the top of the corm (Figure 2).

The taro root aphid is highly host-specific. It apparently infests only taro (and, possibly, closely related plants of the family Araceae). This aphid has been present on upland taro on the island of Hawaii since 1971. It has been present on Oahu since 1995, when it was found in commercial plantings in the Kahuku and Mililani areas. An infestation was observed in a community garden plot on Lanai in 1994, but prompt destruction of the infested plants prevented further spread and establishment there.

The taro root aphid apparently does not attack taro grown under wetland conditions.

In Hawaii, this species does not produce winged sexual forms, and reproduction occurs without fertili-

Dug-up taro roots with taro root aphids.

Taro root aphid infestation on taro leaf petiole and sheath.

zation by males. Taro root aphids have been observed to be associated with numerous attending ants, which probably move the aphids around, enabling them to develop damaging populations.

Control

Spread of the taro root aphid occurs mainly by the planting of infested hulis (cormels, used as seedpieces). A hot-water dip treatment to disinfest taro hulis of root aphids has been developed by entomologists at the College of Tropical Agriculture and Human Resources. Dipping taro hulis for 6 minutes in water held at 120°F (49°C), followed by immersion in cool water, will disinfest them of root aphids without significant effects on the hulis.

A taro crop planted with infested hulis will never get off to a good start, and subsequent yield will not reach adequate levels, especially if periods of drought occur. It is very important, therefore, to plant clean hulis and to grow upland taro only in unaffected areas.

No effective insecticide is currently available for use against root aphids on taro.* Should an insecticide become available, it will likely be most useful as a control measure when applied during the early growth phase of the taro crop.

If a heavy infestation of taro root aphid occurs, the crop should immediately be removed and destroyed, with care to include all culls and unharvested cormels. The field should be given a thorough and deep cultivation to drive away ants and to promote root degradation. After cultivation, fallow the field or grow non-taro crops for at least one year.

Quarantine regulations prohibit shipment of taro hulis from the island of Hawaii to other islands in the state. To reduce the risk of introducing the taro root aphid to other locations in the state of Hawaii where taro is grown, these regulations should be revised to include Oahu. In the meantime, shipping taro planting materials (or taro corms with hulis attached) from Oahu is not recommended.

The College of Tropical Agriculture and Human Resources has done the research necessary for approval of pesticides for control of the taro root aphid. If approved by regulatory agencies, these pesticides may become available for use. Contact your local Cooperative Extension Service office for current information on the status of pesticides for use against the taro root aphid.

Prepared by Dwight M. Sato[1] and Arnold H. Hara[2] with the assistance of Ronald F.L. Mau[2], Dick M. Tsuda[2], and Randall T. Hamasaki[3], this publication revises and replaces Commodity Fact Sheet TA-4(A), *Taro root aphid*, by Sato, Hara, and Jack Beardsley[2], published in 1989. Photos courtesy of Julie Coughlin[4].

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*Certain insecticidal soaps labeled for use against aphids on root and tuber vegetables are currently available. Insecticidal soaps may control some aphids, but their efficacy on taro root aphid is uncertain because it is a very waxy aphid, which may protect it. Also, aphids on roots underground are difficult to contact with spray solutions. Furthermore, insecticidal soaps have been observed in some cases to burn taro leaves, particularly when applied during the heat of the day.

Unless the label says otherwise, insecticidal soaps labeled for use on root and tuber vegetables may be used as a dip for treatment of hulis before planting. Again, their efficacy against taro root aphids is uncertain. The dip should be at the spray concentration given on the label (generally about 1% active ingredient in the spray solution). Any remaining unused solution should not be dumped on the soil but rather should be sprayed over areas bordering the growing area, where pest reinfestation is likely.