Hibiscus faces a mite-y opponent

Voracious Mite Damages Hawaii's Hibiscus

by Arnold H. Hara, James Tavares and Marilyn Couture

Hibiscus *(Hibiscus rosa-sinensis L.)* is a popular plant used widely in Hawaii landscapes. In the past decade, infestations by an eriophyid mite, the hibiscus erineum mite, *Aceria hibisci* (Nalepa), have caused noticeable aesthetic damage to "Chinese Red" hibiscus. Unsightly galls or thickened lumps are formed on leaves and stems in response to the mites feeding.

While biological control agents such as predatory mites are present in Hawaii, they cannot overtake heavy infestations. Chemical control often requires repeated applications of miticides over two or three weeks, and many are registered for use only by licensed landscape or nursery professionals.

Cultural control measures include drastic pruning of severely affected branches and leaves and selection of less susceptible hibiscus cultivars.

A two-year study was undertaken to observe the level of hibiscus erineum mite infestation on several hibiscus cultivars to determine patterns of susceptibility.

Materials and Methods

Twenty-six hibiscus cultivars, selected for their prevalence in existing landscapes, were planted in September 1994 at the Low Elevation Experimental Farm, Kahului, Maui (elevation 52 feet, annual rainfall 15.0 inches). All were hedge types, and some were hybrids with large flowers. Three or four plants of each cultivar were planted randomly in each of the four rows.

Plants were spaced 4 feet apart. The rows of varietal hibiscus were bordered by four rows of "Chinese Red" hibiscus on one side and a windbreak of wiliwili trees approximately 8 feet away on the other side.

The hibiscus plants were fertilized with 10-30-10 at planting and on a regular basis thereafter. The plants were first pruned in September/October 1996 and following each of the four data collection dates (in April, 208 days after initial pruning, and approximately every 300 days thereafter in the months of January, December and October). The plants were irrigated on a regular basis, as needed, requiring less water during winter.

The presence of hibiscus erineum mite (HEM) was observed on each plant and level of infestation was recorded using a scale of "0" to "10": "0" indicated no infestation, "5" indicated 50 percent infestation, and "10" indicated that the plant was fully infested. The data were statistically analyzed, and the cultivars were ranked as having high, intermediate or low susceptibility to HEM.

Results

Hibiscus cultivars with average levels of infestation less than 3.5 were assumed to have a lower degree of susceptibility. Seven cultivars, including "Apricot," "Empire," "Pink Hibiscus," "Itsy Bitsy Peach Monch," "Zahm Chinese," and "Apple Blossom" appeared to be less susceptible to HEM infestation compared with "Chinese Red." Fourteen other cultivars were as highly susceptible to HEM infestations as "Chinese Red."

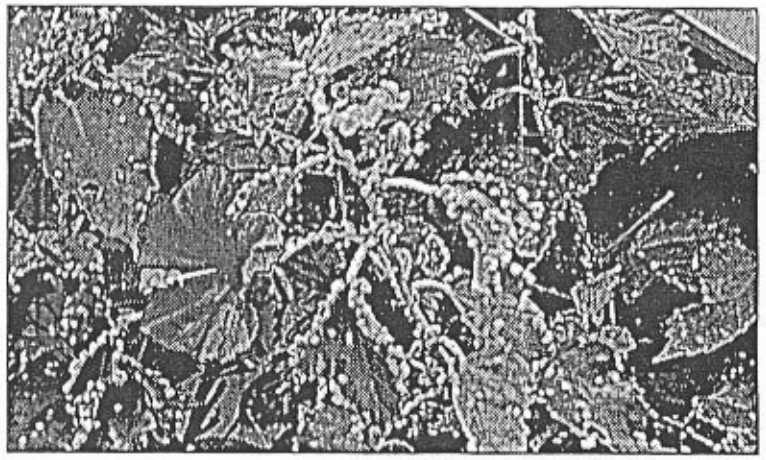

Photo courtesy Julie Ann Yogi-Chun and Arnold H. Hara

The hibiscus erineum mite can cause severe galling on the plant when it feeds.

Environmental factors, such as temperature, rainfall, altitude, plant nutrition and other growing conditions may also affect host plant susceptibility and HEM and other pest populations.

If HEM is a pest in your particular area, it is recommended that cultivars with lower susceptibility to HEM infestation be used in hedge plantings to reduce plant damage and use of miticides. Existing landscapes that consist of hibiscus varieties with high susceptibility, such as "Chinese Red," should be replaced with less susceptible cultivars.

For more information, request "Hibiscus erineum mite," Insect Pests IP-7 (April 2001, Cooperative Extension Service, College of Tropical Agriculture and Human Resources, University of Hawaii at Manoa) from your local extension office, or visit the Publications and Information Office Web page at http://www2.ctahr.hawaii.edu/oc/freepubs/index.asp for a free copy.

This article appears courtesy of UH-CTAHR's Plant and Environmental Protection Sciences Department.