



## Hibiscus Erineum Mite

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### Common name

Hibiscus erineum mite, hibiscus leaf-crumpling mite

### Scientific name

*Aceria hibisci* (Nalepa)

### Hosts

The hibiscus erineum mite seems to prefer the Chinese red hibiscus (*Hibiscus rosa-sinensis* L.), but it will also attack other hibiscus species and hybrids. Like most gall (plant-feeding) mites, the hibiscus erineum mite's host range is narrow and confined primarily to hibiscus species; however, it has also been recorded on okra, a plant in the same family.

### Distribution

In Hawaii, the mite was first discovered on hibiscus at Wheeler Air Force Base, Wahiawa, Oahu, in November 1989, and it is now found on all major islands. It has been collected in other Pacific areas, such as Tonga, Fiji, and parts of Australia, and it has also appeared in Brazil, but its full range of occurrence is unknown.

### Damage

Hibiscus erineum mite feeding on plants results in unsightly leaf, stem, and twig galls. The damage is most noticeable on the leaves and developing vegetative buds. The galls are localized growth reactions of the host plant to the mite feeding. They are rounded, puckered bumps that form irregular domes on the leaf surface. The galls vary in size and are frequently connected and crowded together, giving a lumpy appearance to the leaf surface. Because active plant growth is necessary for mite establishment, young leaves and buds are most vulnerable to mite infestation. Older, hardened growth will not develop galls.

**Bumpy growths (galls) and distorted leaves are the result of feeding by the hibiscus erineum mite.**



### Biology

In warm and tropical areas, mites usually develop from an egg through two nymph stages to the adult stage. The nymphs resemble the adults but are smaller. The hibiscus erineum mite develops inside the “pouch” of the gall. Based on the extensive gall formation that can occur on hibiscus in a relatively short period of time, the life cycle of this mite seems to complete itself in less than three weeks.

The adult hibiscus erineum mite is very small—invisible to the unaided eye. The mite is soft-bodied and wormlike, with two body regions: the *gnathosoma* (mouthparts), and the *idiosoma* (remainder of the body). Hibiscus erineum mites are unique among mites because they have only two pairs of legs, compared with the four pairs of other mite species.

\*Revised by Arnold Hara from Instant Information no.18, 1996; information on cultivars provided by James Tavares and Marilyn Couture.

## Behavior

Hibiscus erineum mites rely on wind, insects, and birds to carry them. The adult female is probably the most mobile in terms of dispersal. Flying insects, especially those that like the same plants as the mites, are believed to be the most common means of aiding the movement of hibiscus erineum mites.

## Management

### *Biological control*

Predatory mites are well known biological control agents of the galling, plant-feeding mites. Predatory mites enter the galls and presumably are preying on the hibiscus erineum mite. When predatory mites are present, galling damage to hibiscus is reduced. Predatory mites can be seen by the unaided eye and are recognized by their fast-moving action. If a number of fast-moving mites are observed on hibiscus with galls, then applying a miticide is not recommended because it will kill the predatory mites. Prune to remove severely affected branches and leaves, and discard them promptly by burning, burial, or dumping them enclosed in a plastic bag.

### *Cultural control*

To prevent the spread of hibiscus erineum mite infestations, avoid taking cuttings from known infested areas, even from apparently healthy plants. If damage to Chinese hibiscus cannot be tolerated, consider replacing the plant with another hibiscus type less preferred by the mite, or another type of plant.

Preliminary trials conducted over two years at CTAHR's Low Elevation Experimental Farm in

Kahului, Maui, indicated that the cultivars 'Apricot', 'Empire', 'Pink Hibiscus', 'Itsy Bitsy Peach "Monch"', "Zahm" Chinese', and 'Apple Blossom' are less susceptible to hibiscus erineum mite infestation than 'Chinese Red', 'Herman Shierman', 'Orange Hibiscus', 'Nii Yellow', and 'Kardinal'. Most of these cultivars are suitable to grow as hedges.

### *Chemical control*

If biological or cultural methods do not control the hibiscus erineum mite on the plant or in the overall landscape, then pesticides can be used. Prune all severely affected branches before applying miticides, and repeat the miticide applications at least two to three times at weekly intervals. Repeat applications are necessary because modern pesticides are made not to last in the environment.

Specific recommendation of a miticide is difficult because of pesticide label restrictions. There are some suitable pesticides registered for use only by licensed landscape or nursery professionals. Homeowners may consider miticides registered for general outdoor ornamentals or specifically for hibiscus in the landscape. For information on miticides currently registered for use by homeowners or commercial growers and landscape managers, contact your local Cooperative Extension Service office.

## Reference

Carson, Cynthia, and Neil Gough. 2000. Hibiscus erineum mite. H00054. Queensland Horticulture Institute, Department of Primary Industries, Queensland, Australia.

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Caution: Pesticide use is governed by state and federal regulations. Read the pesticide label to ensure that the intended use is included on it, and follow all label directions.