**Hibiscus rosa-sinensis**  
Chinese Hibiscus

- **Origin:** China  
- **Growth Rate:** Fast  
- **Salt tolerance:** Medium  
- **Drought Tolerance:** Low  
- **Nutritional Requirements:** High  
- **Human Hazard:** Mostly inert but a few people have reported skin irritation  
- **Flowering season:** Year-round  
- **Additional Notes:** Hundreds of cultivars exist.
Insect and Mite feedings represent the majority of problems for hibiscus plants.
What are Aphids?

- Soft-bodied, pear-shaped insects

- Colors include brown, black, yellow, pink or blue
- Two short cornicles at the rear of the body
- Found in clusters or colonies
- Commonly found on young developing tissue
- Feeding causes new leaf distortion
- Ability to transmit plant viral disease
Aphids accumulate on new leaves and on emerging flower buds. Often the first indication of an aphid, scale, mealybug, or whitefly problem is the presence of ants.
Distorted leaves on new foliage caused by feeding aphids
What to Do

• Natural enemies including ladybeetles, syrphid fly larvae, parasitic wasps

• One can possibly dislodge aphids with high pressure water sprays from the garden hose.

• Avoid over fertilization that stimulates excessive new growth.

• Use insecticidal soaps or horticultural oils

• Other insecticides available
What are Mealybugs?

- Soft-bodied insects covered with a fine, white, powdery or cottony wax-like material, sometimes extending from the side of the body as waxy filaments.
- They have piercing-sucking mouthparts.
- Damage appears as chlorotic spots on leaves.
- The life cycle takes about 30 days at 80°F.
Mealybug damaged hibiscus in foreground. All kinds of mealybugs infest hibiscus plants.
Solenopsis mealybugs
(*Phenacoccus solenopsis*)

An unhealthy hibiscus plant needs closer examination to determine its problems.

The following slide is the result of closer inspection.
Solenopsis mealybugs infestation

A large mealybug commonly found on hibiscus in Florida
Striped Mealybug (*Ferrisia virgata*)

Another sickly hibiscus has scant leaves, sooty mold, and tip dieback. The following two slides are upon closer inspection.
Striped Mealybug

Striped mealybugs, *Ferrisia virgata*, on the underside of leaf. This is the same leaf as on the previous slide.
Close up of striped mealybugs, *Ferrisia virgata*, and the copious amount of wax they produce.
Papaya Mealybug (*Paracoccus marginatus*)

Adult and egg sacks of papaya mealybug.
Source Pub. EENY302, UF IFAS

Papaya mealybugs and aphids on hibiscus flower bud.

- The papaya mealybug was first discovered in Manatee and Palm Beach Counties in 1998.
- Native to Mexico and/or Central America
- Typically as clusters of cotton-like masses
- Biological control identified as a key management strategy
Papaya Mealybug

Papaya mealybugs cause early leaf drop and can kill hibiscus plants.

A heavy infestation on the stem of the plant on the left.
What to Do

- Inspect plants before purchase or installation

- Increase air flow or decrease plant density

- Ladybird beetles, green lacewings, and tiny wasps often suppress populations. These insects are naturally present in the environment.

- Try to use horticultural oils rather than broad spectrum insecticides which kill off valuable natural enemies.
What to Do

- Horticultural oils kills all stages of scales that are present at time of application. Contact with the pest and excellent coverage is necessary to control the pest.

- Repeated applications may be necessary

- Potential phytotoxicity under high temperatures can occur with the use of oils

- A systemic insecticide may give several months of control
What to Do

- Ladybird larvae
- Lacewing eggs

-Ladybird beetles, green lacewings, and tiny wasps often suppress populations
Pink Hibiscus Mealybug (PHM)  
(*Maconellicoccus hirsutus*)

Damage caused by PHM
Pink Hibiscus Mealybug

• First detected in Miami-Dade Counties in 2002
• PHM attacks more than 125 plant species
• Spread by wind, ants, stuck on clothing, on the hairs of animals, or the movement of infested plants
• A life cycle of 24 to 30 days
• Feeds by sucking sap from plant
PHM damage is caused by feeding on the plant sap and releasing toxic substances. Crinkled or twisted leaves and shoots are recognizable symptoms.
Pink Hibiscus Mealybug
Pink Hibiscus Mealybug

Maconellicoccus hirsutus damage to hedge
Pink hibiscus mealybugs adult females

Source: FDACS, Jeffrey W. Lotz

Pink hibiscus mealybug adult male

Source: USDA Agricultural Research Service
Pink Hibiscus Mealybug

The female mealybug produces more than 10 generations per year in colonies of 500 eggs or more.

Chemical control by contact insecticide is difficult because the waxy covering protects the mealybugs and their eggs.

*Maconellicoccus hirsutus* infestation
Pink Hibiscus Mealybug

Toxic saliva causes leaf curling and shortened internodes termed ‘Bunchy top.’

Should you prune?
Pink Hibiscus Mealybug

Do NOT cut or trim the plants you think have PHM! PHM spreads most easily by the wind and the movement of infested plants.
What to do: Homeowners

- DPI has released mealybug destroyers and 2 parasitic wasp species. The former is quite effective against PHM.
- Do not clip infested plants to show anyone.
- Avoid spraying foliage as that will kill the beneficial insects.
- Foliar applications of insecticidal soaps and oils are less harmful to natural enemies.
- Use a systemic root drench such as Imidacloprid (Bayer’s Advanced Tree and Shrub Insect Control) for best control.
- Branches may need to be pruned following the root drench treatment to induce new growth.
- [Click here](#) for more on the control of scales and mealybugs on ornamentals.
What to do: Professional and Growers

• DPI has released mealybug destroyers and 2 parasitic wasp species. The former is quite effective against PHM.

• Do not clip infested plants to show anyone.

• Avoid spraying foliage as that will kill the beneficial insects.

• Foliar applications of insecticidal soaps and oils are less harmful to natural enemies.
What to do: Professional and Growers

• Otherwise, apply foliar applications of bifenthrin (i.e. Talstar), acephate (i.e. Orthene), chlorpyrifos (i.e. DuraGuard ME), neonicotinoids (i.e. Flagship, Marathon, Safari, TriStar) and others

• Or a systemic root drench such as Imidacloprid (i.e. Merit or Bayer’s Advanced Tree and Shrub Insect Control) for longest control. A systemic root drench often negates the use of a foliar applied insecticide

• Branches may need to be pruned following the root drench treatment to induce new growth.

• Click here for more on the control of scale insects and mealybugs on ornamental plants.
What are Scales?

- They are divided into 2 groups; armored and soft scales
- They feed by sucking sap from plants
- They feed on leaves, stems and trunks
- Spread in crawler stage by man, birds, other animals and wind currents
- If not controlled can cause leaf drop, dead twigs and branches.
Lesser Snow Scales (*Pinnaspis strachani*)

This is an armored scale. The first stage after hatching is the only nymphal stage with legs, so the insects are called crawlers. Crawlers may stay under the maternal armor several hours until outside conditions, especially temperature and humidity, are good.
It requires an observant eye to detect grenade scales on hibiscus stem.
Lobate Lac Scales
(*Paratachardina pseudolobata*)

Lobate lac scales and grenade scales on hibiscus stem.
What to do

• If contact insecticide is used, timing to kill the crawler stage is critical since applications made too late may not control scales, because of their waxy covering, and may interfere with natural enemies, aggravating the problem.

• Horticultural oils control soft scales during most of their lives and control hard scales only shortly after egg hatch when their covering is relatively thin.

• Horticultural soap will control soft scales but not recommended for the control of armored scales.
What to do

For the control of both soft and armored scales:

• Neonicotinoides including those with active ingredients Acetamiprid, Dinotefuran and Imidacloprid (Merit, Bayer Advanced GardenTree and Shrub Insect Control)

• Acephate; Azadirachtin; Bifenthrin (talstar), Cyfulthrin (Bayer Advanced Garden Power Force Multi-Insect Killer); Dysulfoton (Bayer Advanced Garden 2-in-1 systemic Azalea, Camellia & Rhododendron Care); Malathion; Pyhomatoxin; Pyrethroid; Pyriproxyfen

• [Click here](#) for more on scales and mealybugs
What are Thrips?

- They are very small and slender
- They have rasping-sucking mouthparts to withdraw plant juices.
- Thrips populations peak during the spring and fall months
- They damage both foliage and flowers
- Life cycle (egg to adult) takes 2 to 4 weeks, with 3 generations per year
Haplothrips sp. (Haplohrips)

Damage caused by haplothrips
Haplothrips

Haplothrips sp. nymphs  Haplothrips sp. adult

Several species feed on a variety of plants.
Liothrips varicornis (Liothrips)

Liothrips damage includes chlorotic and dead leaves.
Liothrips


Severe damage includes pitted stems and leaf petioles that probably induce chlorotic leaves.
*Liothrips varicornis* larvae and adult
Liothrips larvae on hibiscus stem
What to do

- Several arthropods help keep thrips populations under control, including green lacewing larvae, ladybird beetles, parasitic wasps, other predaceous thrips, and predatory mites.

- Soaps are safe and effective in controlling thrips.

- Many insecticides are available for the control of thrips. [Table 1](#).

- Several systemic insecticides can be applied as soil drenches, so that the roots take up the toxicant and spread it to where the insects are feeding. They may achieve control within several weeks, but are effective for a longer time than most contact insecticides.
Myllocerus undatus (Sri Lanka Weevil)

- The life cycle of this weevil under laboratory conditions is less than 2 months.
- Adults lay their eggs in the soil.
- Larvae are small, creamy white, and legless. They are root feeders.
- Adults can cause severe feeding damage to the foliage. Damage can range from notching on the leaf margins to a much more extensive feeding along the leaf veins.
Myllocerus undatus
What to do

• Difficult to control

• Older, larger plants can tolerate the feeding damage

• Severe infestations can possibly be controlled by using the active ingredient Cyhalothrin contained in Triazicide. Sevin (Carbaryl), Bifenthrin (Talstar) and Acephate (Orthene) are also recommended

• Insecticides used for leaf feeding insects will work, but most do not last very long as more weevils return so repeat applications are necessary
What are Midges?

• Gnat-like flies
• Three huge groups; biting, non-biting, gall
Contarinia maculipennis
(Hibiscus Bud Midge)

- A small fly that lays its eggs in flower buds including hibiscus and Dendrobium orchids.

- When the egg hatch, tiny worm-like larvae emerge that damage young bud, causing it to fall to the ground.
Hibiscus Bud Midge

- Able to jump or spring several centimeters
- Once larvae are fully developed they drop to the soil where they eventually burrow into the soil and pupate

Larva that has just existed the infested bud to pupate in the soil
Hibiscus Bud Midge

cut into off-color buds and buds that have dropped prematurely to check for little off-white midge maggots.

Hibiscus bud midge maggots feed inside unopened flower buds causing deformed, discolored buds and blossoms, and in severe infestations, premature bud or blossom drop.
What to do

• Remove all dropped buds or buds on the plant that are beginning to molt.

• Because the larvae enter the soil to pupate, pesticide applications that kill insects in the soil could be useful.

• Several systemic insecticides such as Imidacloprid can be applied as soil drenches, so that the roots take up the toxicant and spread it to where the insects are feeding. They may achieve control within several weeks, but are effective for a longer time than most contact insecticides.
Other Causes of Bud Drop

- Thrips
- Caterpillars
- Nematodes
- Nutritional deficiencies
- Overfertilization
- Environmental factors such as poor drainage, excessive water, drought, salt spray
Key Diseases of Hibiscus

- Anthracnose (*Colletotrichum* spp.)
- Bacterial spots (*Pseudomonas, Xanthomonas* spp.)
- Blossom blight (*Choanephora* spp.)
- Leaf spots (*Pseudocercospora* sp.)
- Root and stem rots (*Phytophthora, Pythium* spp.; *Rhizoctonia solani*)
- Rust (*Kuehneola, Puccinia* spp.)
Key Nematode

• Root-knot nematodes (*Meloidogyne spp.*)
What’s that black discoloration where the leaf base meets the petiole? When severe it seems to cause premature leaf drop.
• If you know, let me know.
• Negative for disease and insects.
Slides from the collections of

- Stephen Brown, Lee County Extension
- Lyle Buss, Insect Identification Laboratory, UF
- Doug Caldwell, Collier County Extension
- And where indicated under such slides

Brown’s e-mail address: brownsh@ufl.edu

Brown’s Web Page
Other Power points on Insect Problems:

Croton Scales

Erythrina Gall Wasp

Slash Pine Scales