

CAS Control Procedure

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Cycad aulacaspis scale (CAS), sometimes referred to as Asian cycad scale or Thai scale, is not a difficult insect to control if caught early enough. Once a plant is completely covered with the scale, including the trunk and the roots, it is a lot of work to eradicate. It takes time and precise drenches. Conversely, light infestations on the leaves will require less work and fewer treatments. In fact, it is possible to completely eradicate the pest from your cycads with a bit of work.

The problem comes from people who do not care about their cycads and allow them to die of scale infestation, which, in the end, spreads the pest miles downwind as the crawlers hatch and float in the wind until they reach their next victim. In cases when a person is not interested in controlling the pest, it is better to kill the cycad outright than to let it die of the scale. One badly infested cycad can infest thousands of additional plants, so proper treatment is important. It is important to understand that not everyone can afford proper treatment and/or not everyone wants to use chemicals in their yard. Thus, you can't help everyone... so concentrate on those who want help. But, if you can remove an infested cycad upwind from your property, it will help increase your chances of long-term success.

Adherence to safe chemical application procedures—including the use of gloves, overcoat, boots, and mask—will not only make it safer to apply the treatments, but it will also help by not spreading the scale when you leave the area, as this scale comes off onto people's clothing and pruning shears. Cleaning up after treatment is as important as any part of the process.

Step 1: Assess the extent of the problem.

Find out where the scales are by checking all cycads for infestation. It will most likely start on leaf undersides near the leaf bases and near the center of the crown. It will also likely be around the sucker leaves and near cataphylls. You will notice white scales in and around the wet, shady, hardest-to-get-to areas of the plant near a wall or rock area. It is important to look closely in deep pockets of leaves. It does not infest *Encephalartos* as much or *Lepidozamia* or *Zamia*, but plants in these genera can be carriers, and *Encephalartos* cones can become hosts. *Cycas* is

the main target, along with *Stangeria*, but *Dioon* and *Bowenia* plants can also have pockets of infestation when things get out of control in a collection.

Some would like to see all the *Cycas* plants in their garden gone, but such plants can actually be quite useful in detecting the scale. Especially *C. revoluta*, which is usually the first to get this pest if the scale has its choice. It is the so-called "canary in the coal mine," and it will help you to monitor the problem. So if you are willing to treat cycads with this method, you should not feel restricted in the use of *Cycas* in your garden. Proper assessment is the key to solving this problem. Determine if you have a light infestation or if the pest is widespread in the garden or if a few plants are heavily infested, etc. Everyone's situation is different, so assessment is key.

Step 2: Understand your options.

If you have a heavy infestation, then you must kill as much scale as you can before you cut leaves because cutting leaves or washing the scale off while most of the insects are alive will spread the problem. The use of an insecticide such as Malathion or Orthene mixed with a fine horticultural oil at a rate of 2 parts Malathion to 4 parts oil in a garden sprayer or hose-end dial sprayer. I prefer the sprayer made by Gilmour, which works well for large plants and bigger jobs, and will kill the scale on contact.

For light infestations, one spray will be enough to control the problem for a while—although it is recommended to spray at least two more times at one-week intervals to break the reproduction cycle, which is every 21 days. For light infestations, you can now go straight to Step 3.

Sprays by themselves, are not enough for heavy infestations or for long-term control of the scale. There are just too many scales hiding to get them all. After the first spray, it is good to cut off the leaves of heavily infested plants. This will make the plants easier to spray and encourage them to produce new leaves. Burn the leaves or bag them carefully for disposal in a landfill. Also, cut away all sucker leaves to eliminate hiding places; the root system will then be easy to get to with the pressure spray of the Gilmour dial sprayer.

If the leaves have all been removed and the procedure is complete, it is time to fertilize the plants that are not

already flushing new leaves. Remember that it is not recommended to fertilize a cycad with newly emerging leaves; fertilize and water plants with no leaves to promote leaf production.

Important note: You must not use Malathion on plants with newly emerging leaves, as they will be damaged in the sun from a phototoxic effect. Also, oils can dissolve the blue waxy coating, making blue cycads green. For plants with new leaves, use only oil in the morning or evening; for blue plants, use an insecticide with a spreader-sticker instead of oil.

Step 3: Long-term care.

There are few options that are effective long term, but one has been found as a successful solution. It is a product called Distance, produced and sold by Valent. It is a growth regulator that makes it hard for scale to reproduce and is very effective on the crawlers (the stage of the scale's life cycle in which it spreads from place to place). Distance prevents the crawlers from molting into mature scale insects, so in effect, it stops the reproduction cycle of the scale but does not actually kill them. It works on all kinds of sucking insects, not just CAS. This product does not seem to kill the good insects and is less harmful to birds and animals than many other insecticides. It also has long-term residual effects because it can translocate in the leaves. It has been found not to harm new leaves and is even more effective when combined with a spreader-sticker and a penetrant.

If this is the only step you do, it is worth it! If there are infected plants in your area, spraying unaffected plants will help you to stop the scale from spreading. Read the labels and do not use around ponds or water unless you cover the pond or use it very carefully. This chemical is the most effective yet. It is not cheap, but it lasts a long time because it is concentrated.

This article is geared toward those who want the most effective control practice that this author has found. There are more organic ways to treat CAS, such as spraying a soap and vegetable oil mixture, but regular sprayings are required. Trial and error are, of course, the responsibility of the reader. Clean and healthy cycads, along with proper horticultural practices, are the key to any plant problem; CAS, though a big problem, is possible to overcome.