

Black Thread Scale, *Ischnaspis longirostris* (Signoret) (Insecta: Hemiptera: Diaspididae)¹

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Introduction

The black thread scale, *Ischnaspis longirostris* (Signoret), is native to Africa and was first reported from Florida in 1908. It is a very polyphagous species whose host range includes over 50 plant families and 130 genera. Black thread scale is considered one of the 43 most serious worldwide armored scale (Hemiptera: Diaspididae) pests (Miller and Davidson 2005).



Figure 1. Infestation of black thread scale, *Ischnaspis longirostris* (Signoret).

Credits: FDACS-Division of Plant Industry

Distribution

This species is most commonly found in tropical and subtropical areas throughout the world. It is reported as present in North, Central, and South America; Asia; Australia; the Caribbean; and Africa. (Dekle 1965, Miller and Davidson 2005, Miller et al. 2009).

Field Characteristics

Adult females have a yellow body with an elongated shiny black cover. The scale cover is typically eight to 10 times longer than wide, usually measuring 0.078 to 0.138 inches (2 to 3.5 mm) in length. The cast skin is pale yellow to light brown, and usually visible at the marginal edges of the scale cover. Eggs are orange and crawlers are yellow. It takes crawlers about three days to molt to the elongated second instar. Black thread scale reproduces by parthenogenesis (without mating), and no males have been observed (Dekle 1965, Howard et al. 2001, Miller and Davidson 2005).

Life Cycle

Each female produces 20–30 eggs. Eggs hatch soon after they are laid and crawlers find their feeding sites within 24 hours. The entire life cycle is completed in approximately 30 days (Miller and Davidson 2005, Tenbrink and Hara 1992).

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Figure 2. Adult female black thread scales, *Ischnaspis longirostris* (Signoret).

Credits: Lyle J. Buss, UF/IFAS

Hosts

Over 50 families of host plants are attacked, including the following:

Agavaceae—*Agave americana* (century plant)

Anacardiaceae—*Mangifera* spp. (mango)

Apocynaceae—*Nerium oleander* (oleander), *Plumeria acutifolia* (frangipani tree, temple tree)

Araceae—*Anthurium scandens*, *Dieffenbachia seguine*, *Philodendron* spp.

Arecaceae—numerous palm species: commonly found on *Chamaedorea elegans* (parlor palm), *Elaeis* spp. (oil palms) and *Monstera deliciosa* (ceriman, swiss cheese plant, fruit salad plant, Mexican breadfruit) and *Elaeis* spp. (oil palms)

Bromeliaceae—*Bromelia* sp.

Cyperaceae—*Cyperus* sp.

Fabaceae —*Acacia* spp.

Lauraceae—*Cinnamomum* spp., *Persea americana* (avocado)

Liliaceae—*Aloe* spp.

Magnoliaceae—*Magnolia* sp.

Malvaceae—*Gossypium* sp. (cotton), *Hibiscus* sp.

Moraceae—*Ficus* spp.

Myrtaceae—*Eucalyptus* sp., *Eugenia* sp.

Oleaceae—*Jasminum* spp., *Ligustrum japonicum* (Japanese privet)

Orchidaceae—*Cattleya* sp., *Oncidium* sp.

Rosaceae—*Prunus armeniaca* (apricot), *Rubus* sp.

Rubiaceae—*Coffea* spp. (coffee), *Ixora* sp., *Gardenia* sp.

Rutaceae—*Citrus* spp., *Litchi* spp.

Theaceae—*Camellia* spp.

Verbenaceae—*Duranta* sp., *Lantana* sp.

A complete host reference list is available at ScaleNet: A Database of Scale Insects of the World <https://scalenet.info/>

Plant Damage and Economic Importance

This insect feeds on plant fronds, petioles, and fruit. Feeding on fronds tends to occur parallel to leaf veins on the lower surface for light infestations (Miller and Davidson 2005).

Some reported hosts of economic concern include palms, greenhouse floriculture crops, coffee, cinnamon, mango, litchi, coconut, mango, avocado, and banana. Chlorosis resulting from heavy infestations can result in yield loss as well as aesthetic damage (Miller and Gimpel 2009).

Management

Management of scale insects begins with detection and identification of the pest. Scale insects can be very small or resemble disease organisms or even plant structures, making detection difficult. Regular monitoring will allow for detection of these pests before damage is obvious and will also allow improve control. All plant parts need to be searched, including the undersides of leaves and stems. Inspection of plants prior to introducing them into the landscape, nursery or collection is very important in reducing new infestations of scales.

Management can be difficult because of the waxy covering which provides protection from many insecticides. Pruning or washing infested plant parts can be helpful in reducing scale populations, particularly in cases of small infestations. A brisk spray of water can also be helpful in removing scales from plants and reducing the population.

Scale insects are commonly attacked by predators, parasites and diseases which can help manage scale populations, particularly for long term control. It is important to recognize the presence of beneficial insects and to take steps to conserve them in the environment so they are available to control the pest insects. Ladybird beetles, specifically *Chilocorus nigritus* (Fabricius) and *Chilocorus distigma* (Klug), are somewhat effective in controlling the black thread scale. Other reported natural enemies include the hymenopteran parasitoids *Aphytis chrysomphali* (Mercet) and *Coccophagus caridei* (Brethes) (Herting and Simmonds 1972).

It is often necessary to manage scale insects with insecticides so it is important to select appropriate insecticides, timing and application methods to reduce negative impact on the natural enemies while obtaining maximum control.

Contact insecticides commonly provide quick knockdown of the pest but require good coverage and generally repeat applications. The stage most susceptible to contact insecticides is the crawler stage.

Horticultural oil and insecticidal soaps also can provide good control, but must be treated like contact insecticides, which require thorough coverage and repeat applications.

Systemic insecticides can provide excellent options for scale control and can provide some flexibility in application timing and methods. These insecticides move through the plant and provide an excellent way to expose scale insects to the insecticide when they feed on the plant.

It is important not to overuse or misuse insecticides, which can lead to numerous problems, including insecticide resistance. To avoid insecticide resistance, it is critical to rotate among insecticide groups.

Florida Insect Management Guide for Scale Insects and Mealybugs on Ornamental Plants <http://ufdc.ufl.edu/l/IR00002883/00001>

Florida Citrus Pest Management Guide: Soft-Bodied Insects Attacking Foliage and Fruit <https://edis.ifas.ufl.edu/cg004>

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