

# **Pest Management in Pitahaya Production**

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# Keys to Success

- Vigilance in monitoring and scouting
- Catching an infestation before it's out of hand
- Preventative treatments when known serious pests are present or due to the time of year
- Using an effective treatment

# Basics

**Monitoring** is the regular inspection of plants and the use of other tools, such as sticky traps, in order to obtain information concerning the status of pest and natural enemy populations.

**Monitoring programs** involve gathering, recording, summarizing and evaluating data. The data is used to determine appropriate pest control actions and optimal timing of applications.

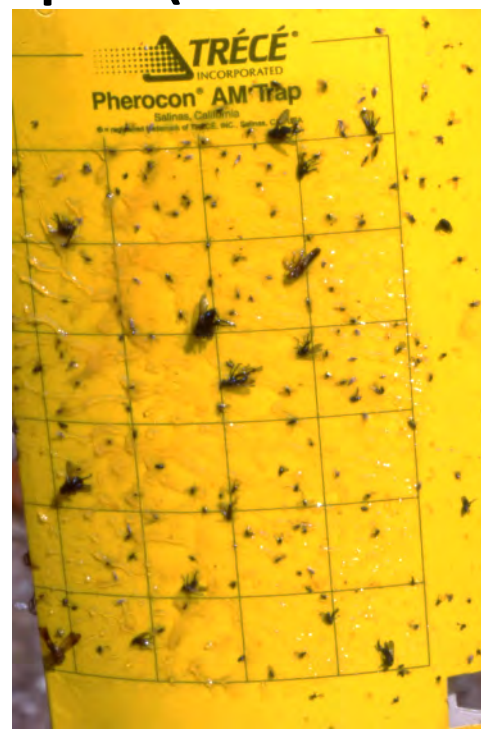
# Methods of Sampling

## Indirect sampling

- Yellow sticky traps
- Double sided sticky tape (scale insects)
- Pheromone traps
- Blacklight traps

## Direct sampling

- Plant samples



# Record Keeping

## Monitoring Data

- Include the number of plants inspected
- A measure of the damage or infestation
- Pest species and abundance
- Location
- Name of the person sampling
- Any other important information such as susceptible varieties

# Benefits of Monitoring

- Early warning system
- Locates specific sites of infestations
- Identifies the pest, numbers, stage of development
- Evaluate control measures
- Collecting and graphing monitoring data over time is useful in predicting future pest populations

# Keys Pests of Pitahaya

## Reported pests

mites, thrips, ants, scales and mealybugs,  
beetles, borers, slugs and fruit flies

The Hemiptera (Homoptera)

Insects with piercing and sucking  
mouthparts

Moths

Fruit Flies

# Ants

BORIC ACID (Gourmet)  
Liquid boric acid  
formulation with sweet  
bait for use only in  
approved bait stations  
that meet EPA ChemSAC  
criteria. For use against  
honeydew feeding ant  
species, including  
Argentine ant

***Build Your Army Against Ants.***  
**The KM Ant Pro. System**



(4+2 Kit Pictured)

**KM Ant Pro Ant Bait Kit (4 + 2 pack)**

# USDA Pest Risk Assessment

## Potential pests (Scientific literature)

- Tarsonemid Mites
- Scarab beetles (June beetles)
- Weevils (*Cactophagous* species)
- Fruit flies (4 *Bactrocera* spp.)
- Ants (4 species)
- Lepidoptera (moths) multiple species in 4 families including cactus moth
- Hemiptera (numerous)

# The Hemiptera

Aphids

Hard (armored) scales

Soft scales

Stink bugs

Mealybugs (14 species in many genera)

Leaf footed bugs

*Leptoglossus zonatus*, marks fruit and is suspected of transmitting fungal and bacterial diseases

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**UC** University of California  
Agriculture and Natural Resources  
**CE** Cooperative Extension, San Diego County

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# Scale Insects

## **Armored Scales** family Diaspididae

- The actual insect body is underneath the cover.
- Each nymphal stage (instar) secretes an enlargement to its cover
- Armored scales do not excrete honeydew.

## **Soft Scales** family Coccidae

- Smooth, cottony, or waxy covering
- Usually larger and more rounded and convex than armored scales Their surface is the actual body wall of the insect and cannot be removed
- Soft scales feed in the fluid-conducting phloem tissue of the plant and excrete abundant honeydew



# Scale Insects

## Control options

- Horticultural oils and soaps
- Best management is when crawlers are present
- Must catch the population early when numbers are low

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# Western leaf footed bug

**Common name: western leaf footed bug**

**scientific name: *Leptoglossus zonatus* (Dallas)**  
**(Insecta: Hemiptera: Coreidae)**

Emerging pest on a wide range of crops including corn, cotton, eggplant, peach, pecan, pomegranate, tomato and watermelon in the United States

*Leptoglossus zonatus* occurs in the southern and western United States, including Arizona, California, Florida, Louisiana and Texas



UGA5203057









# Western leaf footed bug

## Control options

- *Metarhizium anisopliae*, isolate NB, at a rate of  $1 \times 10^{10}$  conidia/tree has shown to produce approximately 92% mortality in adults
- *Beauveria bassiana* (Bals), isolate 119, at a dosage of  $2.6 \times 10^9$  conidia/tree, produced mortality of near 99% in adults
- Neem oil caused a peak mortality rate of up to 100 percent

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# Mealybugs

## Control options

- Petroleum oils and soaps breakdown the wax
- Use the insecticide rate of oils and soaps
- Neem products on early instars
- Pyrethrins
- Rosemary Oil (Ecotrol)

# Cactus Moth

***Cactoblastis cactorum***, commonly known as the **Cactus Moth**, **South American Cactus Moth**, or **Nopal Moth**

The arrival of *Cactoblastis cactorum* to the United States caused concern for the ornamental cactus industry in Arizona, California, Nevada, New Mexico and Texas





Photo by George Peavy

# Cactus Moth Pheromone



[Product Categories](#) [Pest Categories](#) [Services](#)

**Product Categories :: Lures :: IT900 ISCALure-Cactorum pheromone lure for cactus moth**

**IT900 ISCALure-Cactorum  
pheromone lure for cactus moth**

**\$2.65**

Price per unit	
10-249	250+
\$2.65	\$1.89



[larger image](#)

Add to Cart:

Min: 10 Units: 10

[add this to my cart](#)

Pheromone lure for cactus moth, *Cactoblastis cactorum*. Nature identical, species specific, high isomeric purity pheromone loaded in controlled release rubber septa dispenser lure.

[8]

# Pesticides

Oils and Soaps

Organic products (botanicals)

Pyrethrins

Neem products

Rosemary oil (Ecotrol)

Spinosad

Food grade products (garlic oil, etc.)

Bts for the leps

# Keys to Success

- Scouting
- Sanitation
- Exclusion or repulsion
- Knowing the common pests well
  - Confirm the identification
- Knowing the best method of controlling each pest
- Knowing the annual cycle of each pest