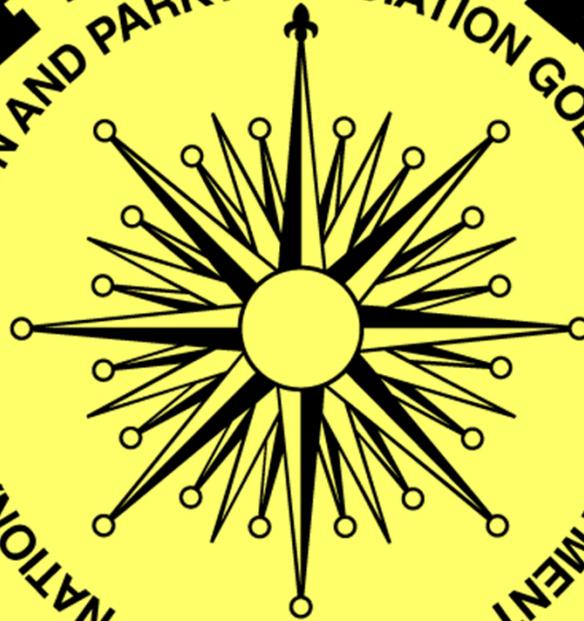


BEST PARKS IN USA
NATIONAL RECREATION AND PARK ASSOCIATION GOLD MEDAL DEPARTMENT



Grand Prairie

— T E X A S —

PARKS, ARTS & RECREATION

ORGANIC GARDENING 101

Presented By

The City of Grand Prairie

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Understand Insects

There are about 30,000 species of insects in Texas

Less than 100 are routine pests in vegetable gardens

Most insects are incidental or beneficial contributing to:

- pollination

- the balance of nature

- recycling of organic matter

A garden with an abundant supply of insects may actually be quite healthy

Identification of insects in the garden is important

Determine if beneficial or pest species

Recognize damage

Know the life cycle

Control measures should be considered when insects are a threat to the garden (economic threshold)

Your best approach is to have a healthy garden

Start with soil preparation

Proper nutrient levels

Clean the area often

Cultural Control Methods

This includes a variety of management practices

Crop Rotation

Cultivation

Weed Control

Water Management

Good Fertilizer Utilization

Plant Resistant Varieties

These practices will interrupt the life cycle of pests, remove plants that harbor pests and produce healthy plants that resist attack

Biological Control

The use of one organism to control another.

Three approaches have been successfully implemented

Importation – Foreign exploration for a parasite or predator that can be introduced to control a pest species

Conservation – Perpetuation or encouragement of natural enemies that are present

Augmentation – Release of additional predators and parasites to contribute to the natural populations

Mechanical Control

The use of physical means to reduce the number of insects and their damage.

Barriers

Covers

High Pressure Water Sprays

Hand Picking of Insects

Each method has positive and negative effects and outcome varies depending on time of year, size of the pest and size of or age of the plant material.

Chemical Control

Pesticides come in many forms and provide a wide array of tools for pest management.

They are regulated for safety by the EPA and TX Dept. of Agriculture.

These agencies do not consider how well the product works

The user is always responsible for the proper use of any insecticide.

Read and follow the label

It is illegal to use a product in a manner not specified on the label.

Less Toxic Approaches

Cedar Oil

Citric Acid

Citronella

Cloves

Garlic

Lemon Grass Oil

Mint

Peppermint

Rosemary

Thyme

White Pepper

Capsaicin

These products are
considered or sold as
repellants

Bio-Control Agents

Bacillus thuringensis

Beneficial Nematodes

Bacillus popilliae - East

Nosema locustae

Trichogramma wasp

Green lacewings

Praying Mantid

Lady beetles

Outcome depends on the ability to find a host, survive in your location, ability to use alternate hosts, reproductive rate, ability to adapt life cycle

Natural Insecticides

Pyrethrum

Nicotine

Sabadilla

Rotenone

Use of these products should be evaluated carefully some are toxic to fish, beneficial insects and humans

Other Pesticides

Insecticidal Soap

Diatomaceous Earth

Superior Horticultural Oil

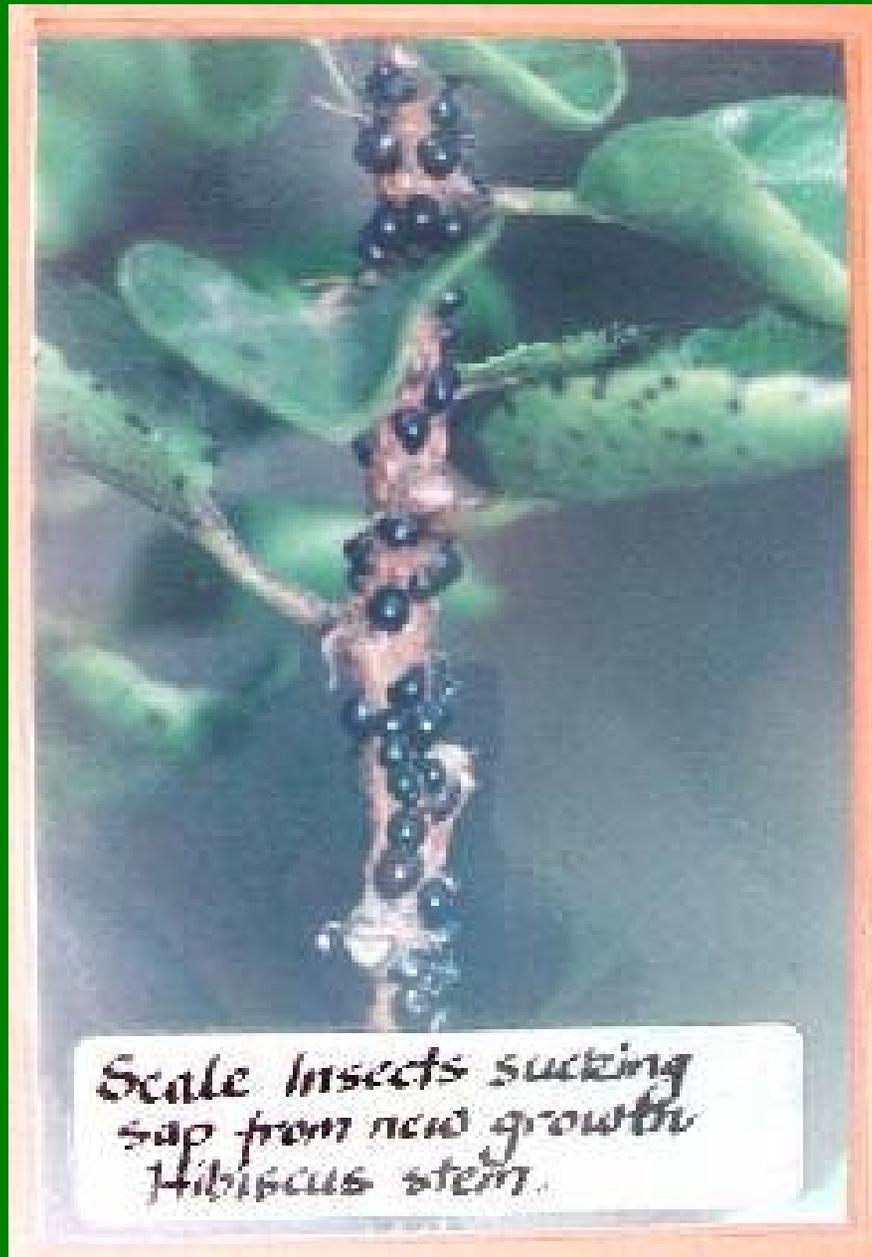
These products are available at your local nursery or feed store. Never purchase more than you need or will use in a years time.



Aphids



Mealy Bugs



Scale

Army Worms





Tent Caterpillar





Bag Worms

Squash Bugs



Tomato Horn Worm



Red Spiders



Crape Myrtle Scale





Crape Myrtle
Scale
Sooty Mold



Ant Lion Larva

Lady Bug



Adult Lady Bug

© 1999 Nature's Control



Praying Mantis
having lunch

Lace Wing

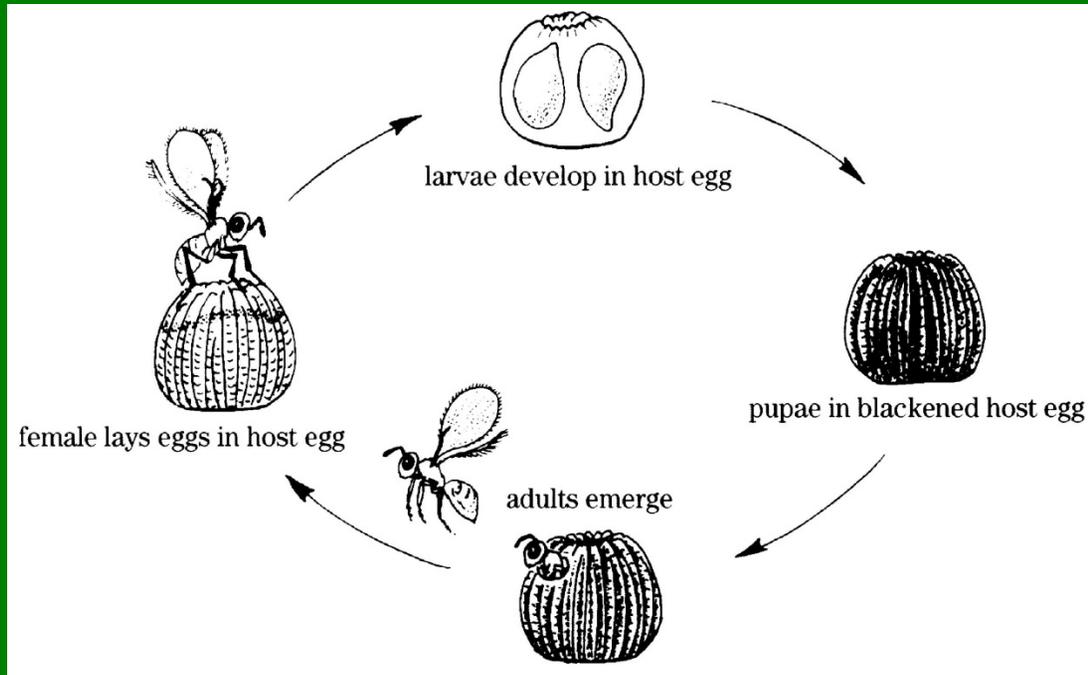


Larva



Adult

Life Cycle



Trichogramma Wasp

Adult Laying Egg

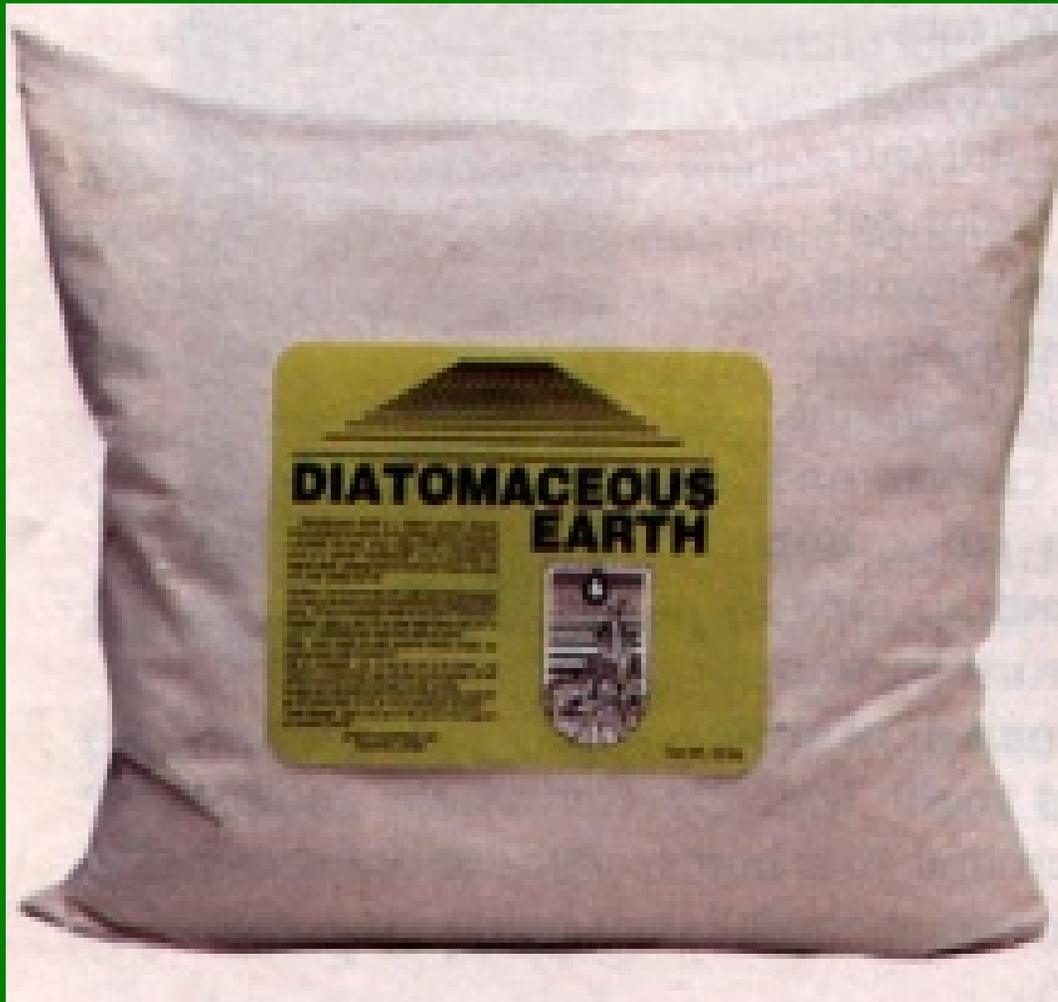


Three things to add to your arsenal of pest control products.

1. Superior Horticultural Oil

2. BT bacillus Thuringiensis

3. Insecticidal Soap



This can be used for hard or soft bodied insects but is most effective on immature stages and soft bodied insects. A must for every gardener.

You are the main connection between control and failure in the garden.

- Regular inspection is the key.
- Treat when you reach the economic threshold.
- Retreat in 7 to 14 days to ensure getting the 2nd generation.
- Keep the garden healthy.
- Clean the garden on a regular basis!
- Remove any weeds and undesirable plants.

Remember to have fun and involve the children to ensure future generations garden!