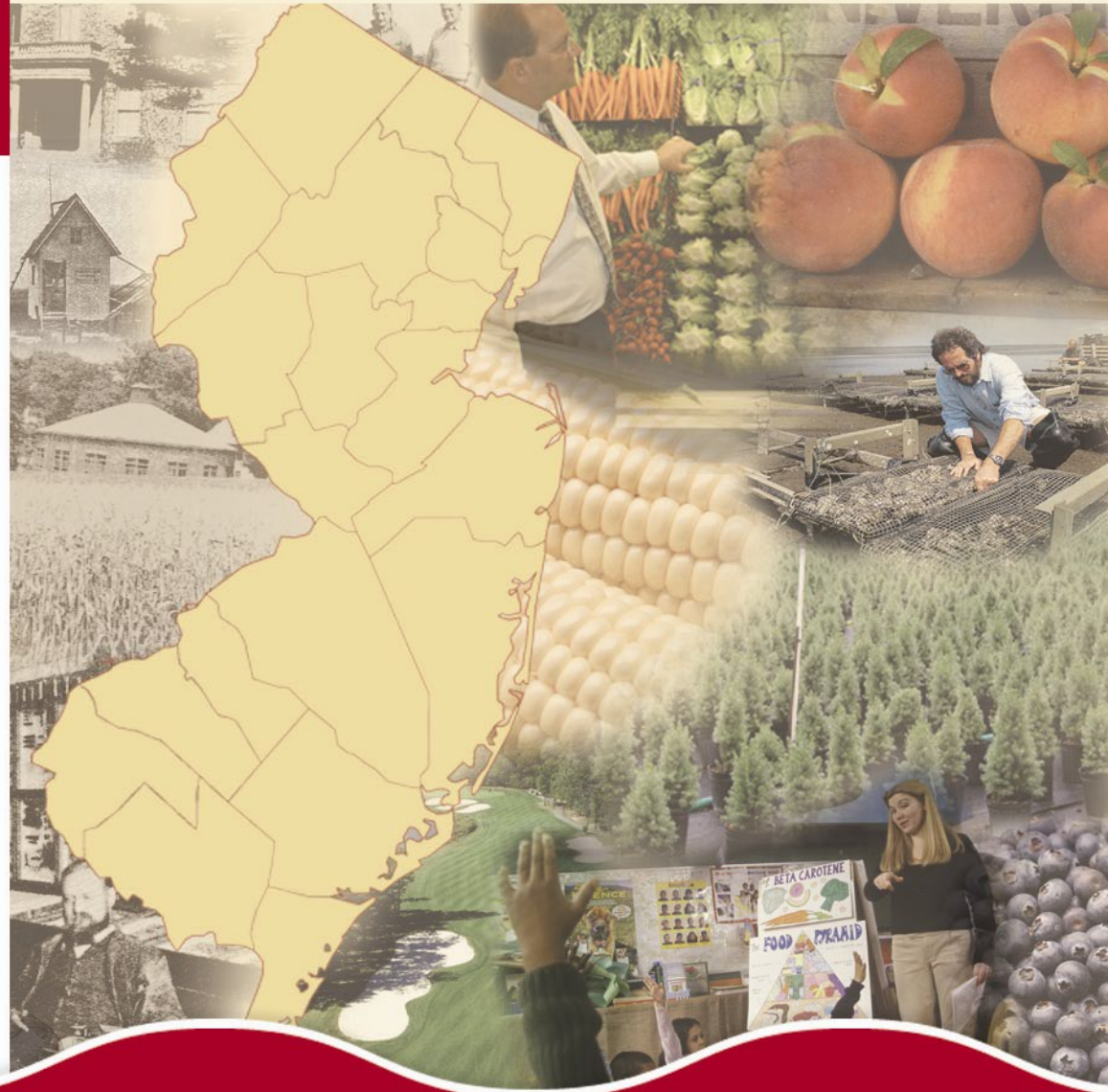




NJ AGRICULTURAL EXPERIMENT STATION
RUTGERS
COOPERATIVE RESEARCH & EXTENSION

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Pepper Weevil in New Jersey



THE STATE UNIVERSITY OF NEW JERSEY
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Background

- In 2004, one NJ farmer lost an estimated \$60,000 due to an infestation of pepper weevil, which attacked all varieties of peppers on the farm.
- A sporadic pest in NJ, the infestation was not recognized until significant damage had been done.
- In 2005 a general panic ensued when it appeared that pepper weevil had been found again.

2005 - What happened?

- Because of the 2004 infestation, local farmers were concerned about potential infestations
- Weevils of the same size, shape, coloration were caught immediately when pheromone traps were set
- Lack of accurate literature on identifying pepper weevil adults
- Similar weevils found at other farms – the tip off that something was wrong

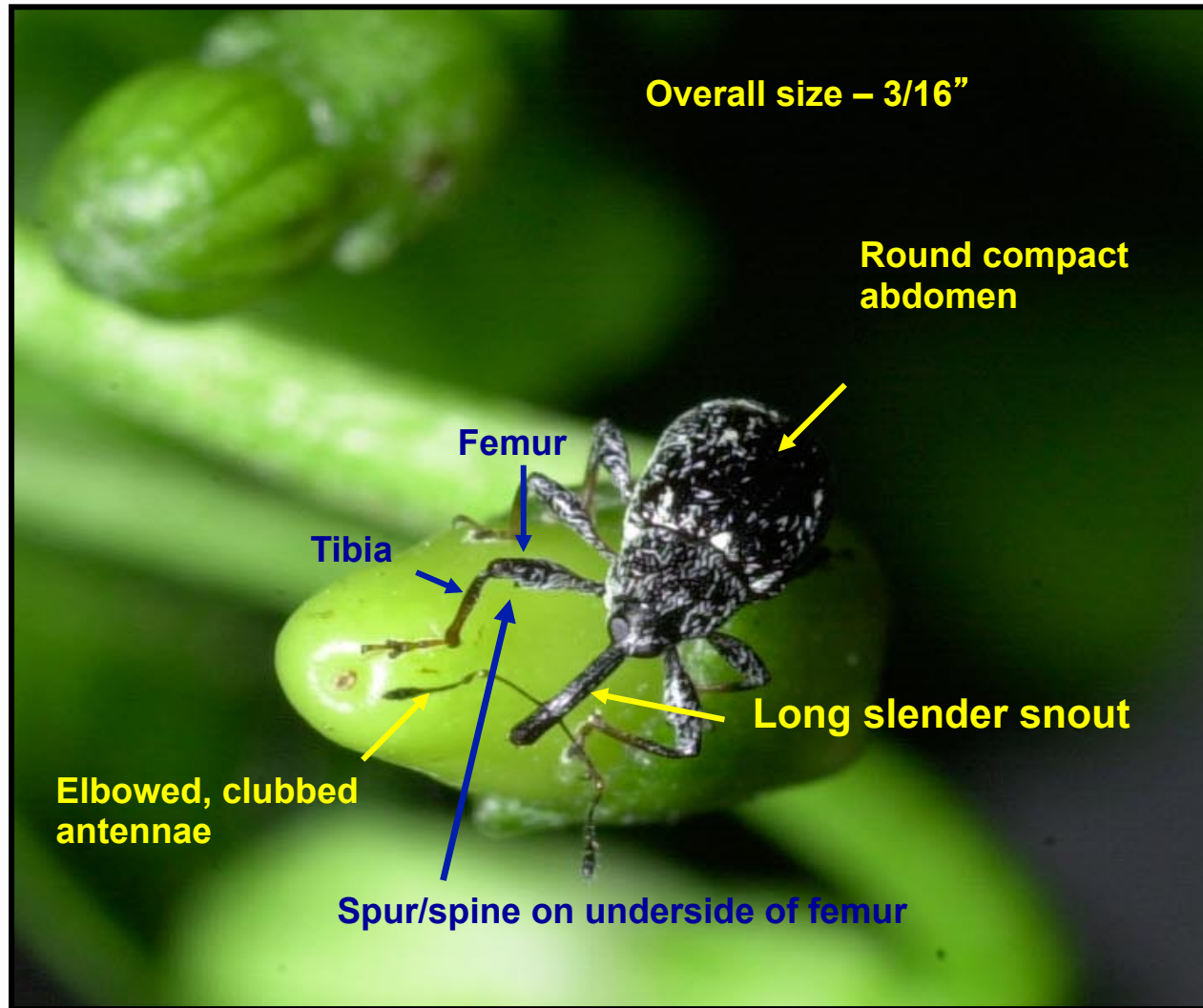
2005 - What happened?

- Lack of accompanying information on pepper weevil traps
- Disadvantages of the traps
 - Pheromone lures also attracted at least 3 other species of weevils, which were similar in size and color
 - Yellow sticky card attracted many other insects – especially whiteflies and thrips, beetles, flies
 - Sticky card material tore easily and slid down dowel supporting it

This is not the first time...

- Serious infestations have occurred in New Jersey in the past
 - 1957, 1967, 1985, 1988 and 1989 (Ghidiu and Rabin – ‘The Grower’ , 1991)
- There was a light infestation at Centerton Research Farm and a local farm in unsprayed pepper plots in 1999

Recognizing pepper weevil



Pepper Weevil Biology

Adult is about 3/16 inch long

Adults readily fly

Texas threshold is to spray if
1 beetle is found in 200
plants – 0 tolerance

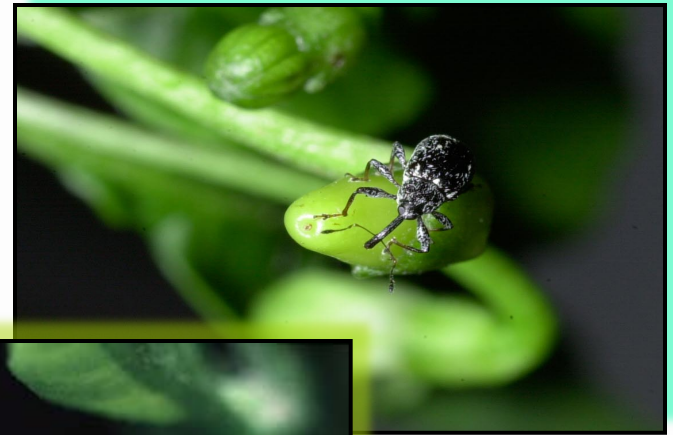
Normally an extreme
southern insect, northern
infestations are a result of
hitchhiking



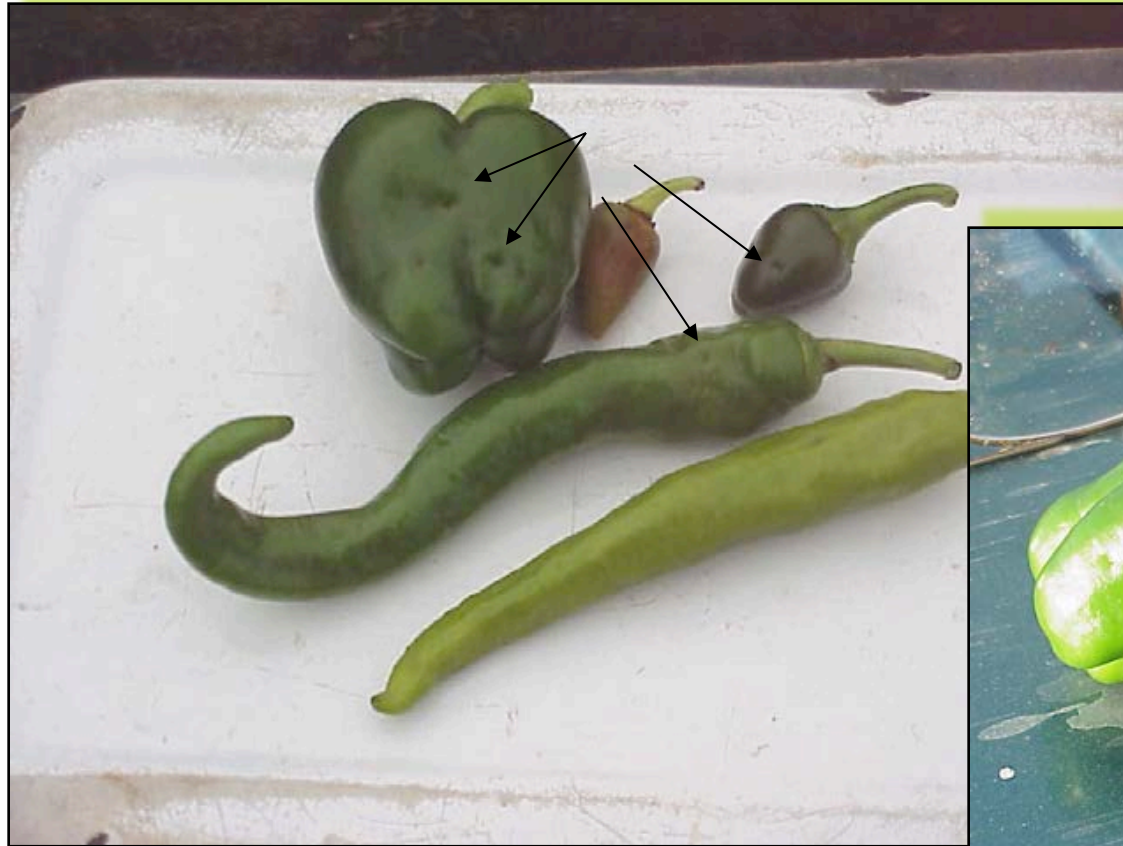
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Life Cycle

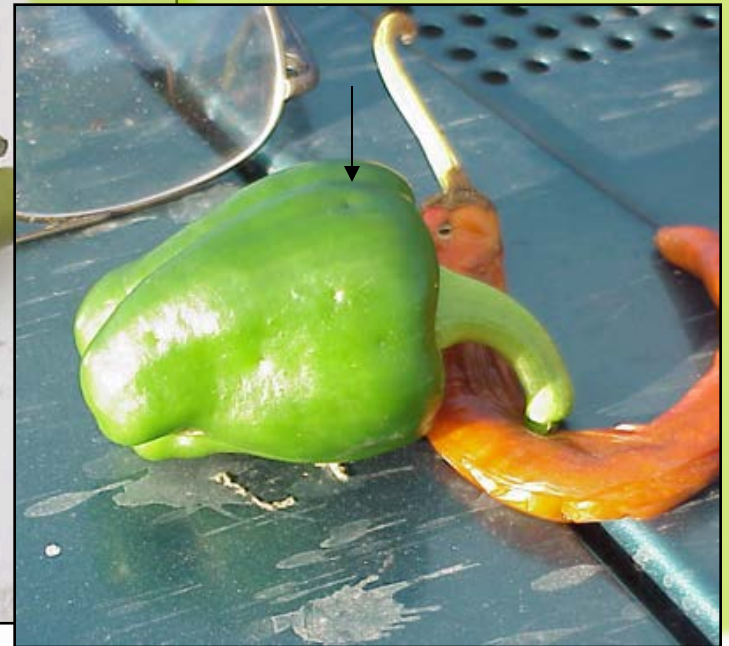
- Female beetle lays 200 – 300 eggs in flower buds and small fruit
- 2 ½ to 3 weeks to complete life cycle
- Overwinter only in southern parts of Florida, Texas and California



Damage – ovipositional scars



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Damage – larval feeding



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Larval and pupal stages



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Larval and pupal closeups



Photo credit: Extension Entomology, Department of Entomology, Texas A&M University

Adults

Adults remain in the fruit until either they chew a hole to escape or the pepper rots



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What to look for...

- Aborted fruit and flowers
- Less yield than expected



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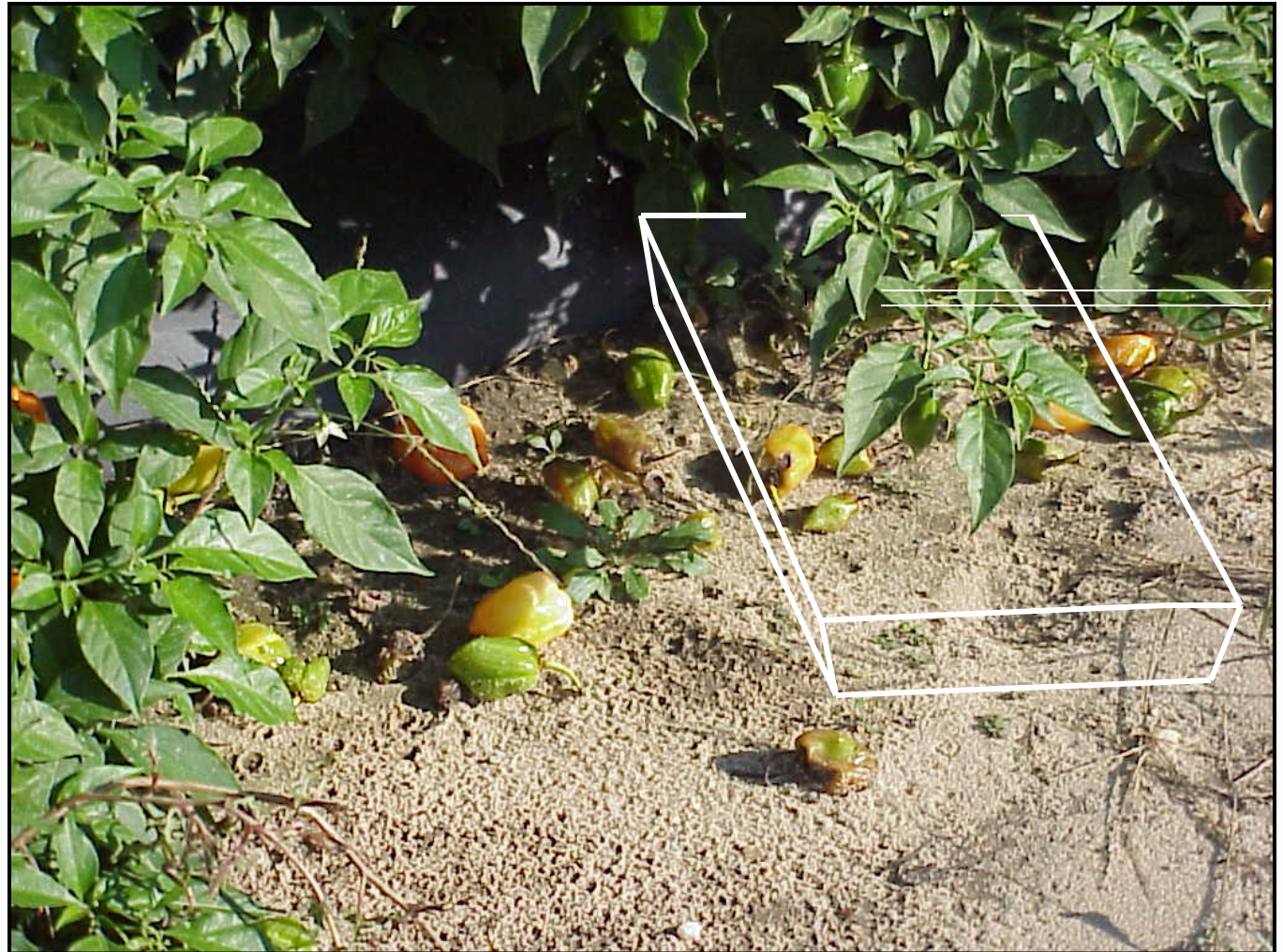




Beating for Adults

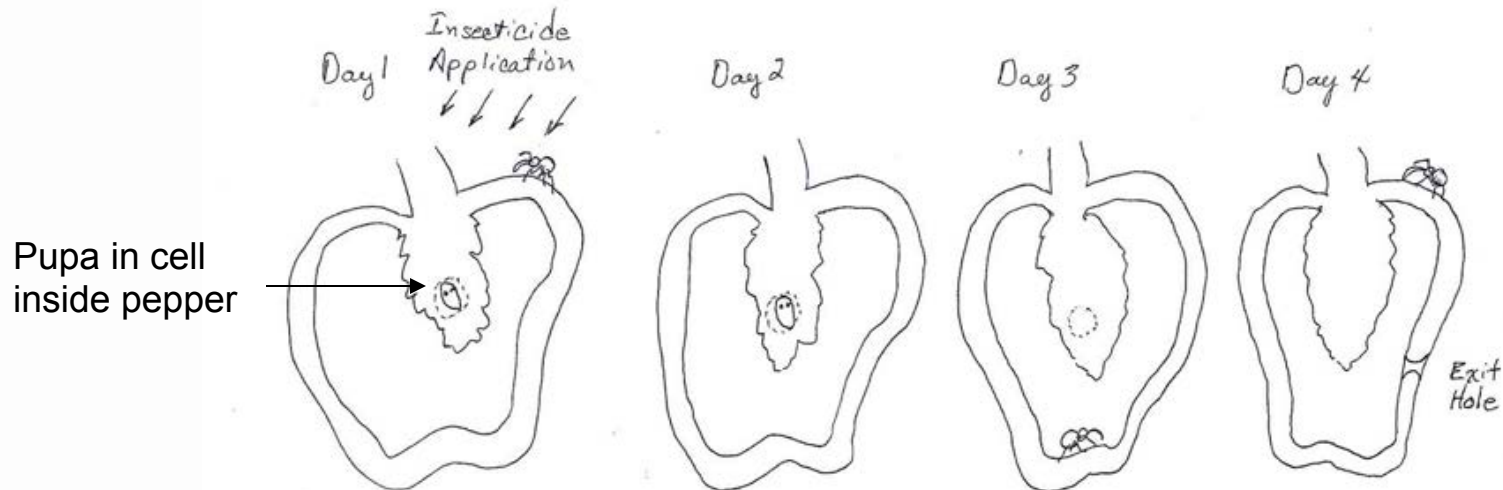
Adult weevils can be found by beating:

Hold a pan under a branch of the pepper plant and strike the branch with a screwdriver or handle. The adults will fall into the pan



Insecticidal Control

- Difficult to achieve control of a large infestation



An insecticide application may kill the exposed adults but more adults will emerge as the pupae mature making repeated insecticide applications necessary.

We recommend...

- Not to rely on pepper weevil pheromone traps until the lure is made more selective for pepper weevil. Instead...
- Be diligent in checking for excessive flower and fruit drop and periodically cut open dropped fruit looking for the larvae, pupae or adults of the weevil.