All Bugs Good and Bad Webinar Series

June 2, 2017

Moderators:
Allyson Shabel and
Marcus Garner
Alabama Extension

Aphids, Scale and Whiteflies

Speaker:
Mr. Erfan Vafaie
Extension Program Specialist
Texas A and M Agrilife Extension

HEMIPTERA
(True Bugs)

Aphids, Whiteflies, Scales & Mealybugs

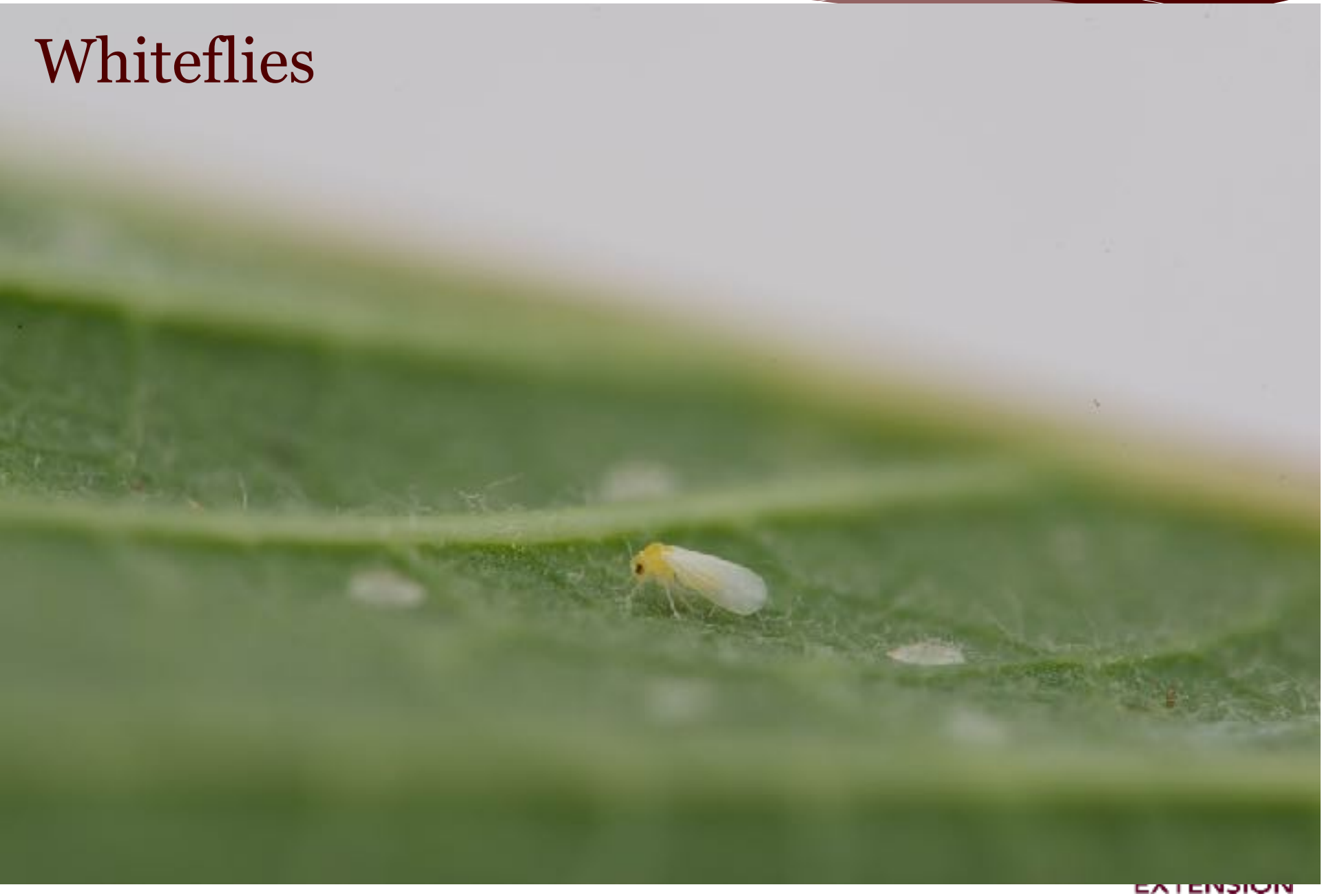
Suck

Can vector plant viruses

Sooty mold

Sooty mold

Whiteflies



Whiteflies

Bemisia

Q-type

- Identified in US for the first time in 2004
- Higher resistance to pyriproxyfen and imidacloprid than B-type

B-type

- More common
- Less pesticide resistance

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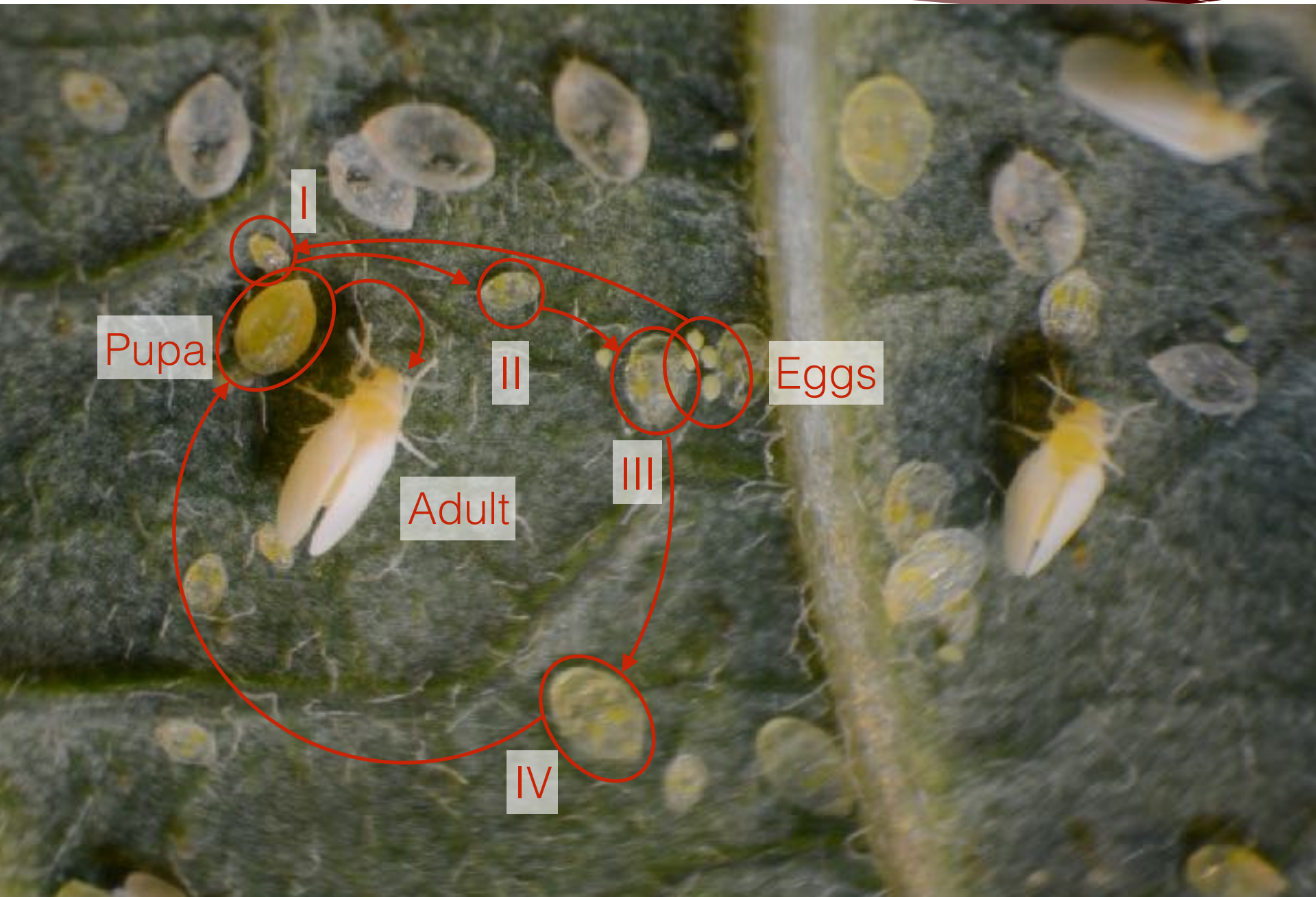
I
Pupa
II
Eggs
III
Adult
IV

Japanese bayberry whitefly

Pest and Disease Image Library, bugwood.org

Florida Division of Plant Industry, Florida Department of Agriculture and Consumer Services, bugwood.org


Wooly Whitefly
Charles Olsen, USDA APHIS PPQ, bugwood.org

Aphids

Aphids

Overwinter

Short daylength
Cooler temperature
Degrading habitat

Asexual wingless female

Illustration from Mauro Mandrioli

A&M ILIFE EXTENSION


Cornicles

Scale Insects

- Plant feeders in suborder Homoptera
- Important families:
  - Mealybugs (Pseudococcidae)
  - Cochineal scales (Dactylopiidae)
  - Margarodid scales (Margarodidae)
  - Kermes scales (Kermesidae)
  - Pit scales (Asterolecanidae)
  - Armored scales (Diaspididae)
  - Soft scales (Coccidae)
  - Bark or felt scales (Eriococcidae)

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Scale Insects | Mealybugs

Scale Insects | Mealybugs

Scale Insects | Giant Scales

Scale Insects | Armored Scale

Scale Insects | Armored Scale

Crapemyrtle bark scale (felt scale)

North Amer. First sighting:
2004, Northern Texas

Now found in:
TX, OK, LA, AR, NM, TN, GA, AL, MS, NC, SC, VA, and WA

Originally from:
Asia
[*Acanthococcus lagerstroemiae* (Hemiptera: Eriococcidae]

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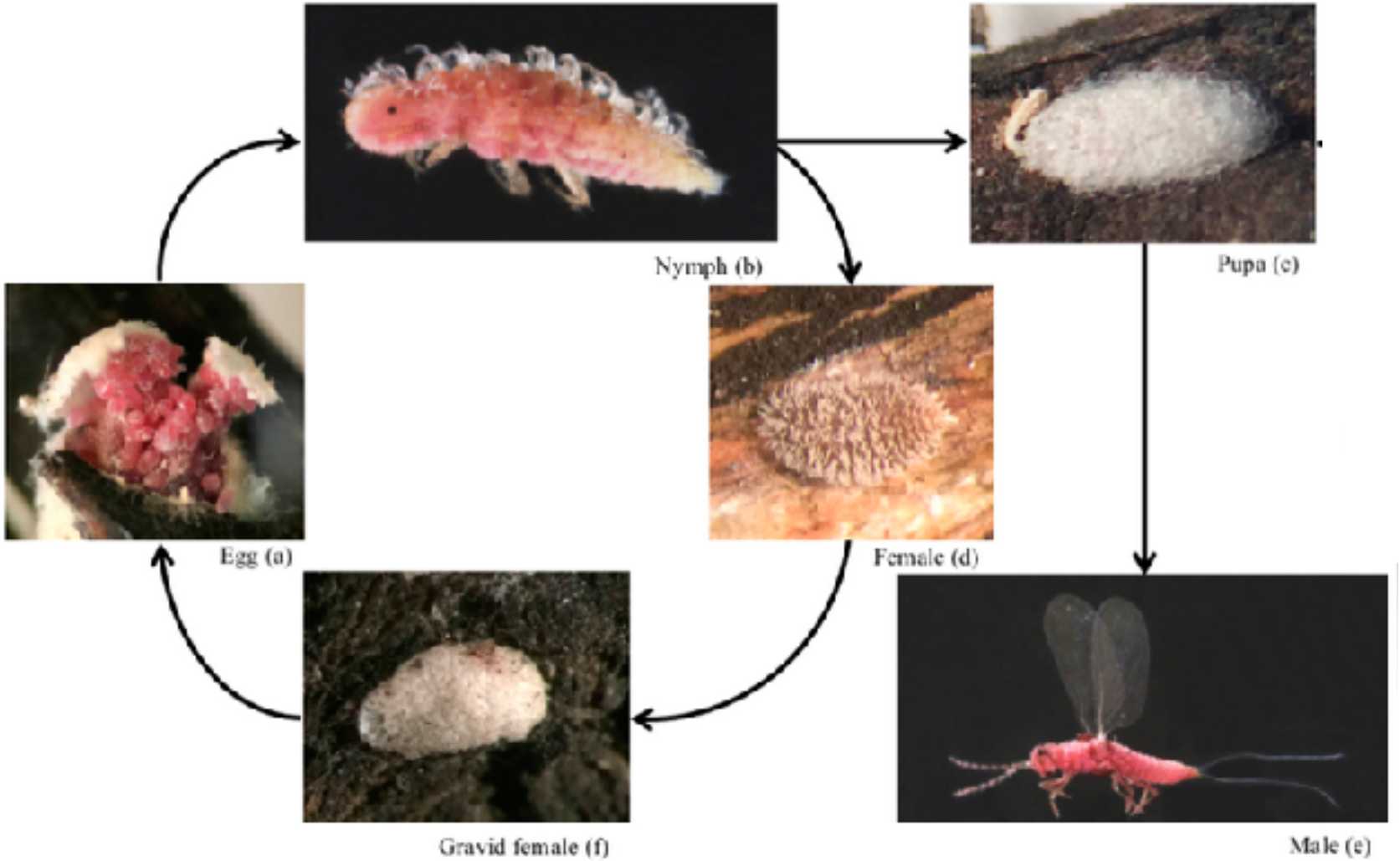

Zinan et al. 2016

TEXAS A&M AGRILIFE EXTENSION

Crapemyrtle bark scale

Potential alternate hosts:

- Pomegranate
- Axlewood
- Chinese Hackberry
- Persimmon
- Common Fig
- Soybean
- Border Privet
- Rubus sp. (Blackberries, raspberries, etc.)

(Kwon & Han 2003)

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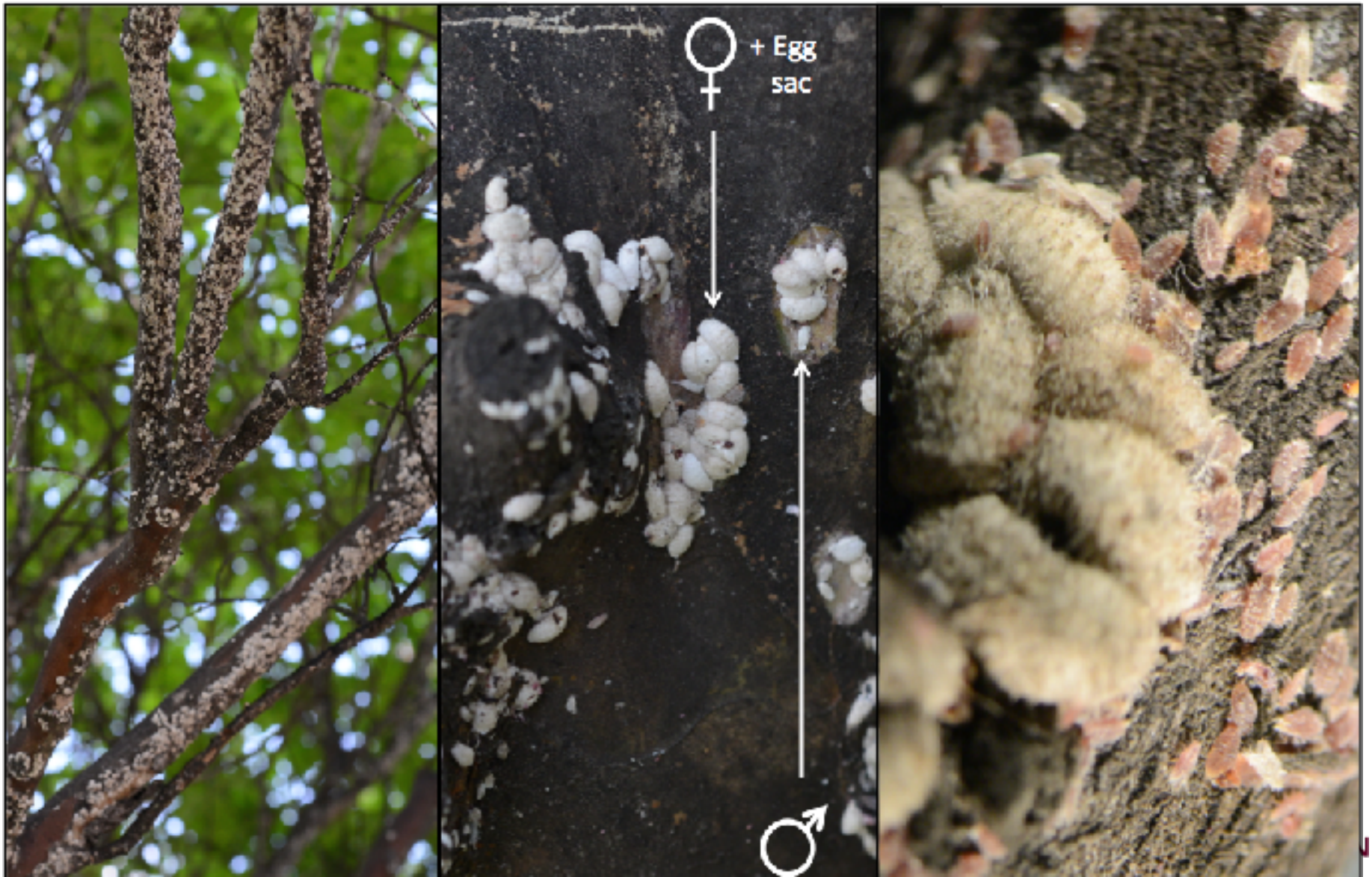
Crapemyrtle bark scale | Beautyberry

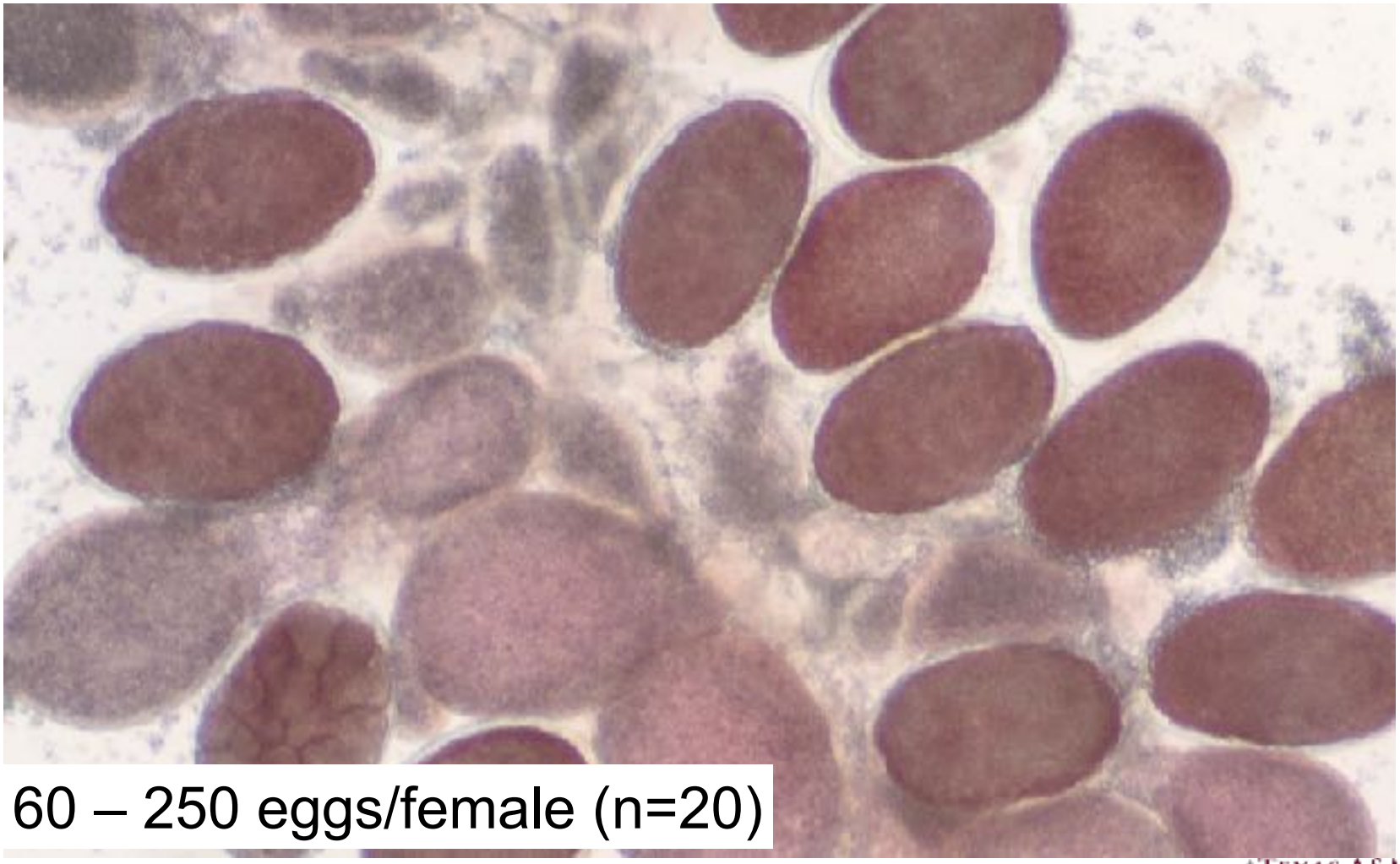
TEXAS A&M AGRILIFE EXTENSION

Crapemyrtle bark scale



Crapemyrtle bark scale

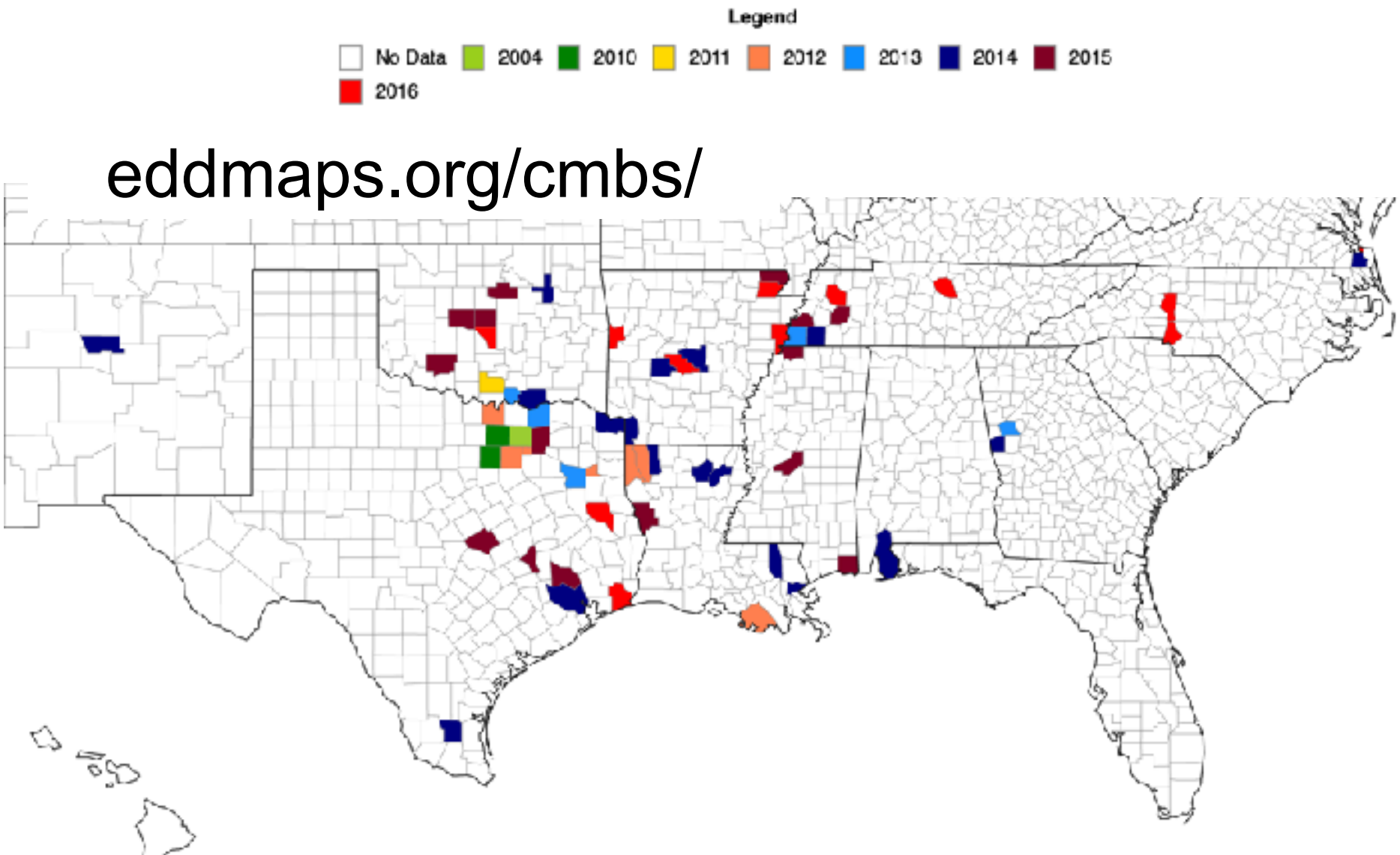
Crapemyrtle bark scale



60 – 250 eggs/female (n=20)

TEXAS A&M AGRILIFE EXTENSION

Crapemyrtle bark scale



eddmaps.org/cmbs/

Crapemyrtle bark scale

EDDMapS
Early Detection & Distribution Mapping System

eddmaps.org/cmbs/

Home | Report Sightings | Distribution | Identification | Control | Resources | Contact | sign out

Report an Invasive Species Occurrence

Red fields are required.

Species

Pest (?) :
Acanthococcus lagerstroemiae (crapemyrtle bark scale)

Host:
Lagerstroemia indica (crapemyrtle)

Observation Date(?):
11/30/2016

Location

State:
Select State

County:
Select County

Latitude (?):

Must be expressed in Decimal Degrees (XX.XXXX), and DATUM NAD83/WGS84.

Longitude (?):

Must be expressed in Decimal Degrees (XX.XXXX), and DATUM NAD83/WGS84.

Monitoring

Hand Inspection

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Monitoring

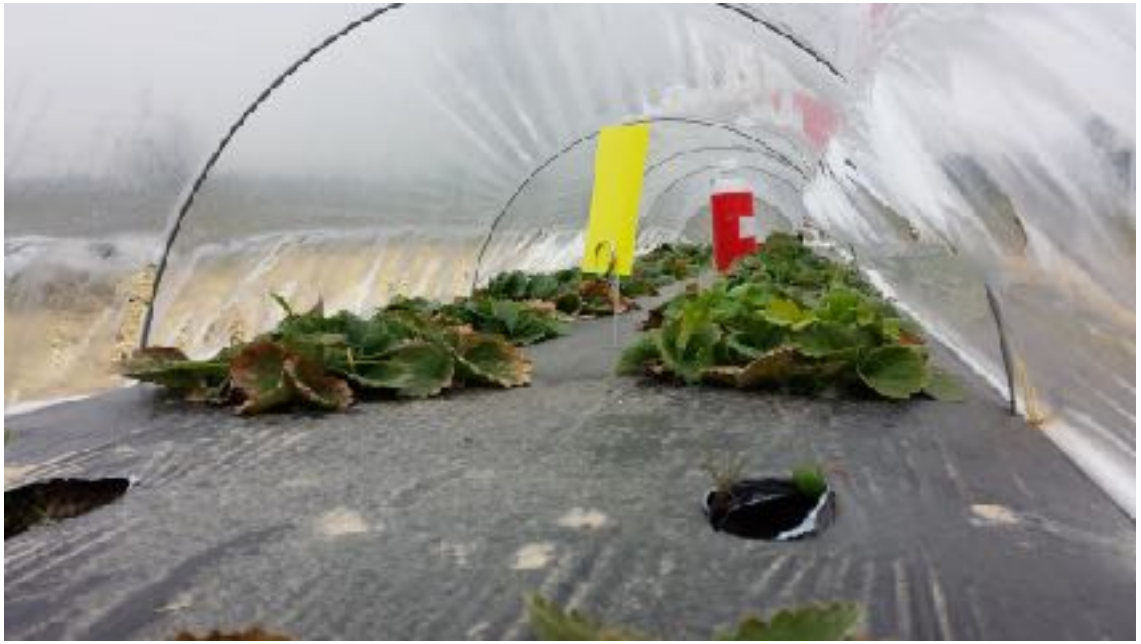
Sucking/Stippling damage

Monitoring

Sucking/Stippling damage

Monitoring

Adults Only



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Monitoring

Hand Lens

Monitoring

Water Sensitive Paper

Biological Control

- Lacewing larvae
- Ladybugs
- Parasitic wasps
- Syrphid fly larva
- Predatory mites
- Orius

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Insecticidal Control

Always read the label - The label is the law

Do not use greater dosage than recommended on the label

Rotate modes of action!
(irac-online.org/modes-of-action)

Do not spray preventatively*

Spot Spray

Use .edu resources

* some exceptions apply

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pubs.ext.vt.edu/AREC/AREC-66/AREC-66.html

Insecticidal Control

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VCE Publications / AREC / AREC-66

Southeastern U.S. 2016 Vegetable Crop Handbook

AREC-66NP (AREC-169NP)

Thomas P. Kuhar, Professor, Entomology, Virginia Tech; Ramon Arancibia, Assistant Professor, Eastern Shore Agricultural Research and Extension Center, Virginia; Steven L. Rideout, Assistant Professor, Eastern Shore Agricultural Research and Extension Center, Virginia; Mark S. Reiter, Assistant Professor, Eastern Shore Agricultural Research and Extension Center, Virginia

This publication is available in **PDF** format only.

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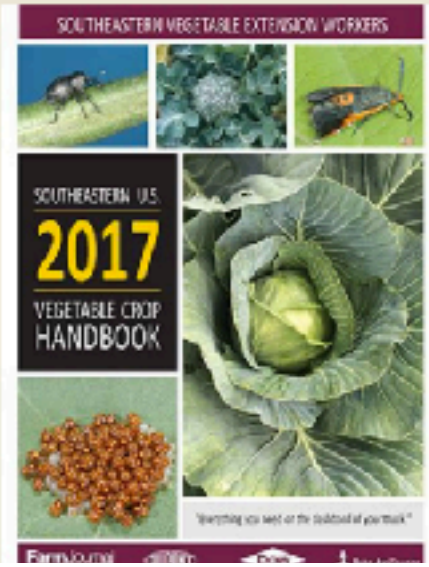
It is with a great deal of pleasure that the Southeastern Vegetable Extension Workers (SEVEW) Group is able to offer you the 17th edition of the Vegetable Crop Handbook for the Southeastern United States. This handbook represents a joint effort among Extension Specialist and Researchers from 12 land-grant universities who work in the area of vegetable production. These



- 286 page free publication

https://content.ces.ncsu.edu/southeastern-us-pest-control-guide-for-nursery-crops-and-landscape-plantings/complete-southeastern-us-pest-control-guide

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Insecticidal Control

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- Insecticidal soap (1)

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aphid soap

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Journal Article

APHID CONTROL WITH INSECTICIDAL SOAP, OILS AND NATURAL PRODUCTS ON WINTER CANOLA, 2000

G. D. Buntin, M. A. Brinkman

Published: 08 November 2014

...G. D. Buntin; M. A. Brinkman E-mail: gbuntin@gaes.griffin.peachnet.edu © 2001 Entomological Society of America 2001 CANOLA Green peach **aphid** Turnip **aphid** ...

Journal Article

APHID CONTROL WITH ALTERNATIVE INSECTICIDES, 2003

Eileen A. Buss, Paul Ruppert, Lois Wood

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AGRILIFE EXTENSION

Insecticidal Control

DAT = Days After Treatment

Table 1.

Treatment/formulation	Rate amt product/acre	Mean GPA / Plant								
		8-Mar 3 DAT1	12-Mar 7 DAT1	19-Mar 14 DAT1	23-Mar 3 DAT2	27-Mar 7 DAT2	3-Apr 14 DAT1	10-Apr 21 DAT2	17-Apr 28 DAT2	Avg
Closer 2SC	2 oz	1.4e	5.5ef	16.1de	3.1e	4.3e	30.4e	96.0d	354.3e	36.9de
NNI-1171	21 oz	35.3bc	50.3cd	62.1abc	63.4bcd	78.9c	109.1c	260.9c	761.3abc	177.9c
NNI-0101 20SC	3.2 oz	5.2d	7.9e	36.1cd	10.1e	21.6d	37.3de	102.9d	315.3de	67.1d
Torac 15EC	21 oz	26.6c	80.1bc	29.6cd	40.9cd	64.5c	94.8cd	363.0abc	396.8cde	137.1c
Torac 15EC+GWN 9996	21 oz + 6.8 oz	47.8bc	51.9cd	65.5abc	58.1cd	75.0c	167.5bc	285.4abc	463.1cde	151.7c
M-Pede	2%	47.6abc	116.3ab	95.3ab	184.5b	189.2bc	335.0b	971.2a	1096.3ab	379.8b
Aza-Direct + M-Pede	1 pt+2%	72.7ab	103.3bc	184.1a	119.8bc	257.3ab	272.7b	616.8a	606.5cde	279.1b
Assail 30SG+Brigade 2SC	5 oz	27.4c	21.8d	55.8bc	39.6d	27.4d	109.9c	301.1bc	567.3bcde	146.8c
Movento 2SC	5 oz	11.5d	3.2f	10.0e	6.6e	4.9e	22.3e	12.7e	44.1f	14.4e
Untreated check	---	112.8a	209.1ab	165.1a	344.1a	451.3a	707.6a	459.9ab	1552.3a	504.7a
	F value	17.28	19.5	8.11	22.21	34.8	15.59	21.69	17.75	67.94
	Pr > F	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001

Means in a column followed by the same letter are not significantly different ($P > 0.05$, F-protected LSD).

Palumbo, 2013

TEXAS A&M AGRILIFE EXTENSION

Insecticidal Control

Indoors vs Outdoors

Number of Applications

Rate of Insecticide

Method of Application

Species of aphid, whitefly or scale being tested

Plant host being tested