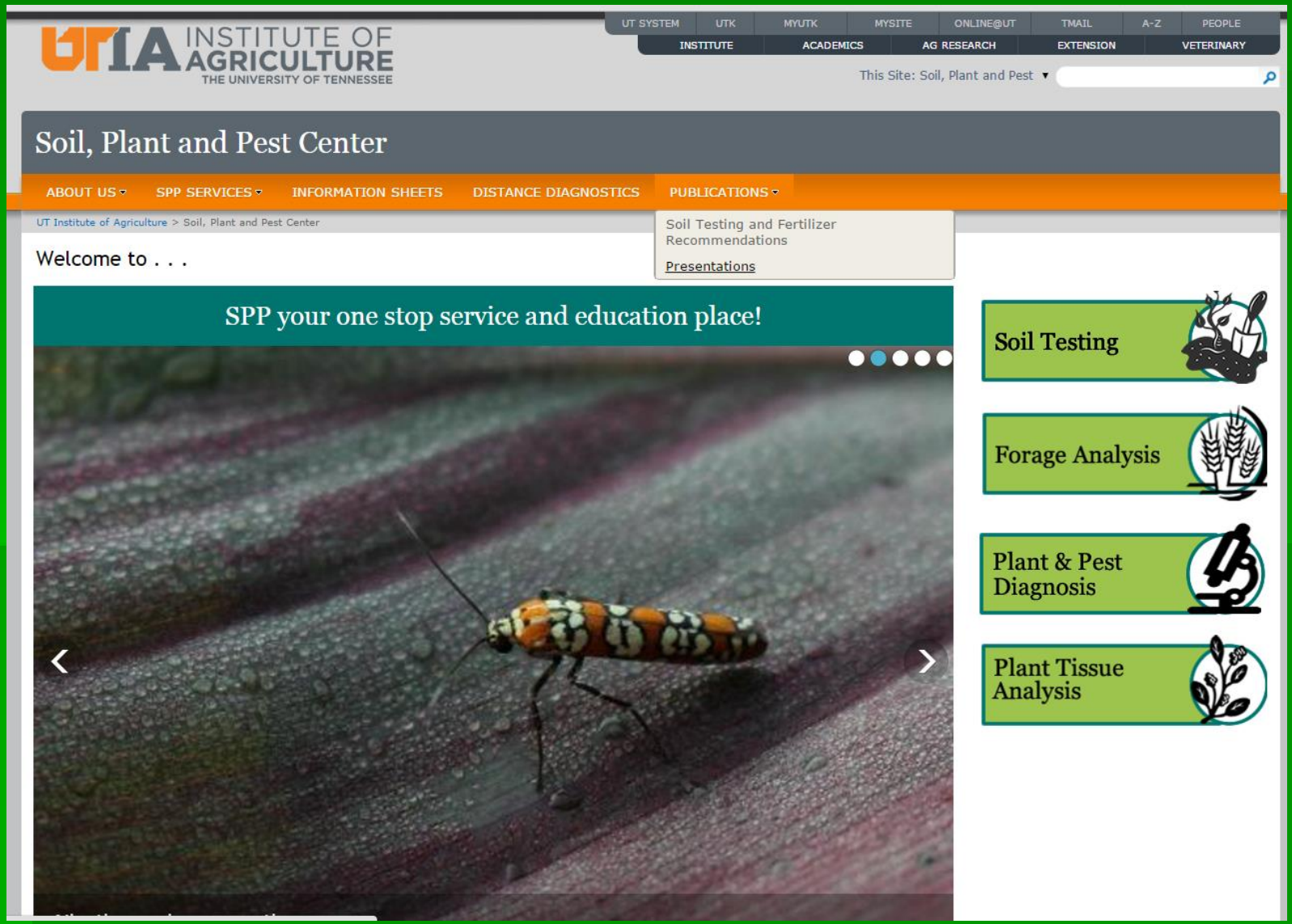
Insect Update

Frank A. Hale, Ph.D.
Professor
Entomology & Plant Pathology

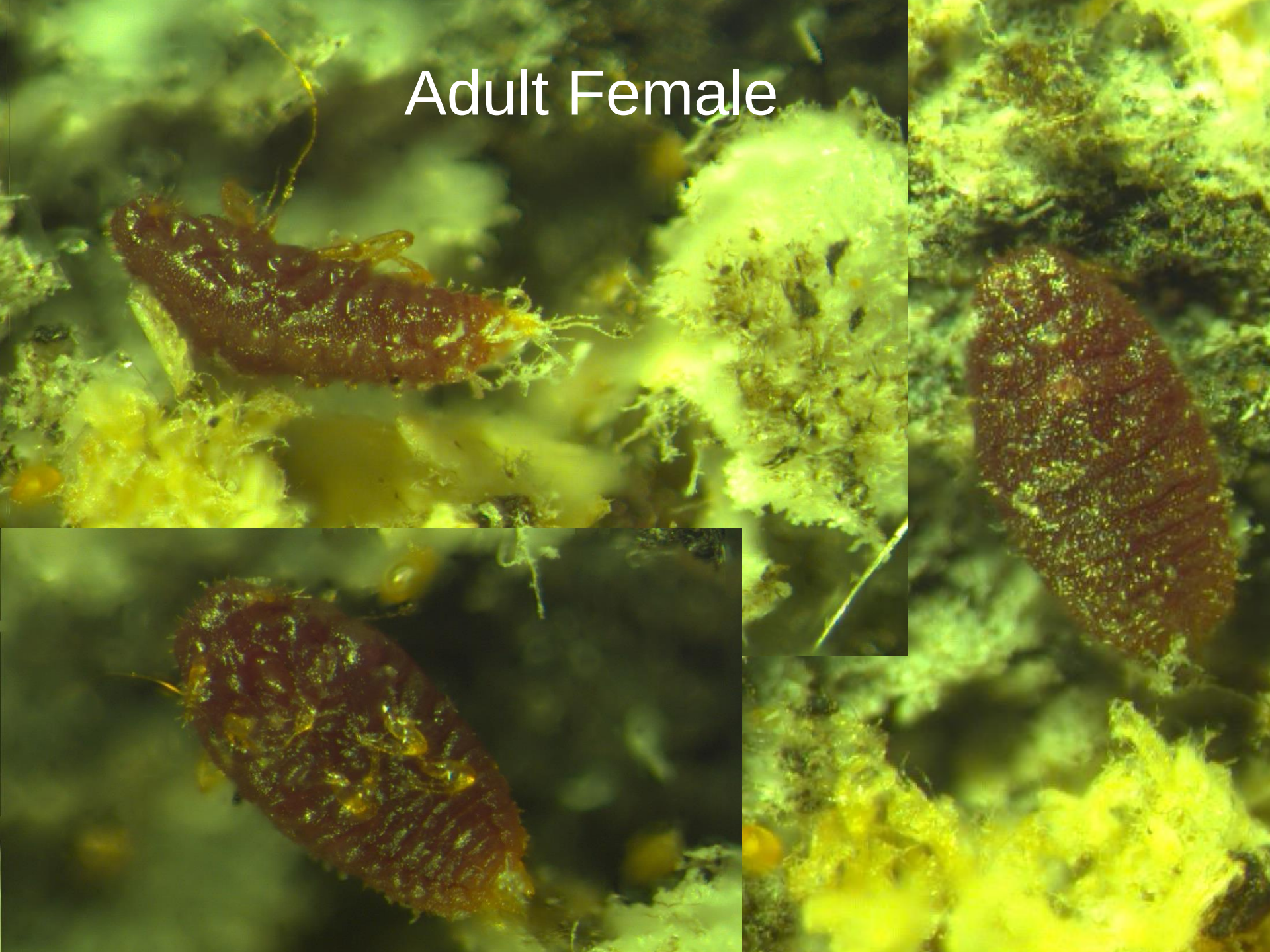
UTEXTENSION
INSTITUTE OF AGRICULTURE
THE UNIVERSITY OF TENNESSEE

Find PDFs of presentations and links to new publications at the Soil Plant and Pest Center web site under publications and presentations




Crape Myrtle Bark
Scale in February


CMBS overwintering nymphs exposed and possibly adults with cover of white waxy threads in February


Adult Female

Crape Myrtle Bark Scale

New fact sheets at: http://www.uaex.edu/Other_Areas/publications/pdf/fsa-7086.pdf
And http://www.agrilifebookstore.org/product-p/eht-049.htm

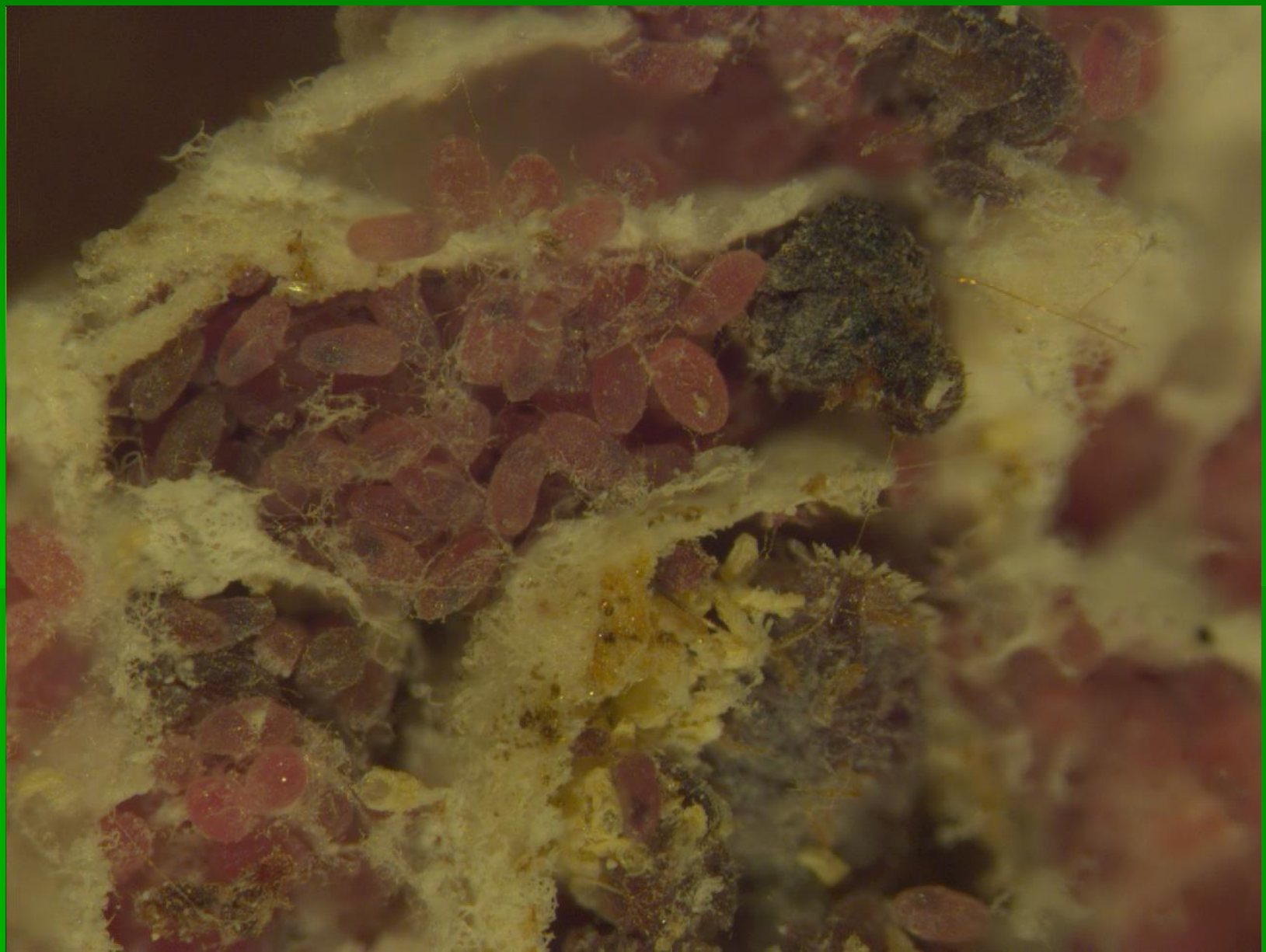
Image courtesy of M. Merchant, Texas A&M AgriLife Extension

Crape Myrtle Bark Scale (July 30, 2014, Germantown, TN)

Top or dorsal view

Underside or ventral view with eggs

Crape Myrtle Bark Scale Eggs



Crape Myrtle Bark Scale

Peeled back to show eggs

Crape Myrtle Bark Scale

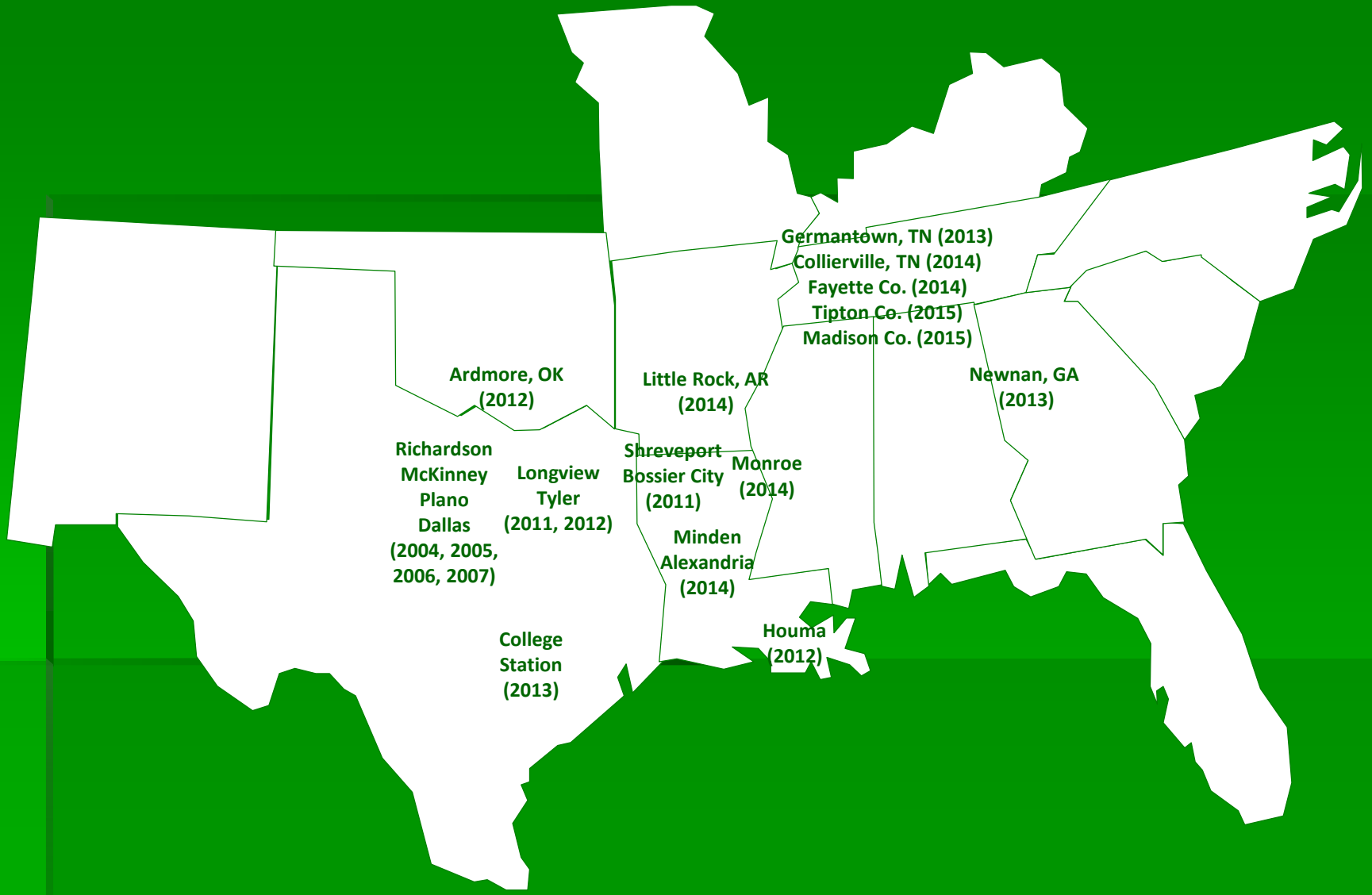
Stress Induced By the Scale

‘Natchez’ crape myrtle on left treated with dinotefuran on May 28, blooms better, appears more thrifty and lacks honeydew and black sooty mold compared to untreated one on right (Courtesy of J. Robbins, University of Arkansas)


Insecticide Used


Not Treated

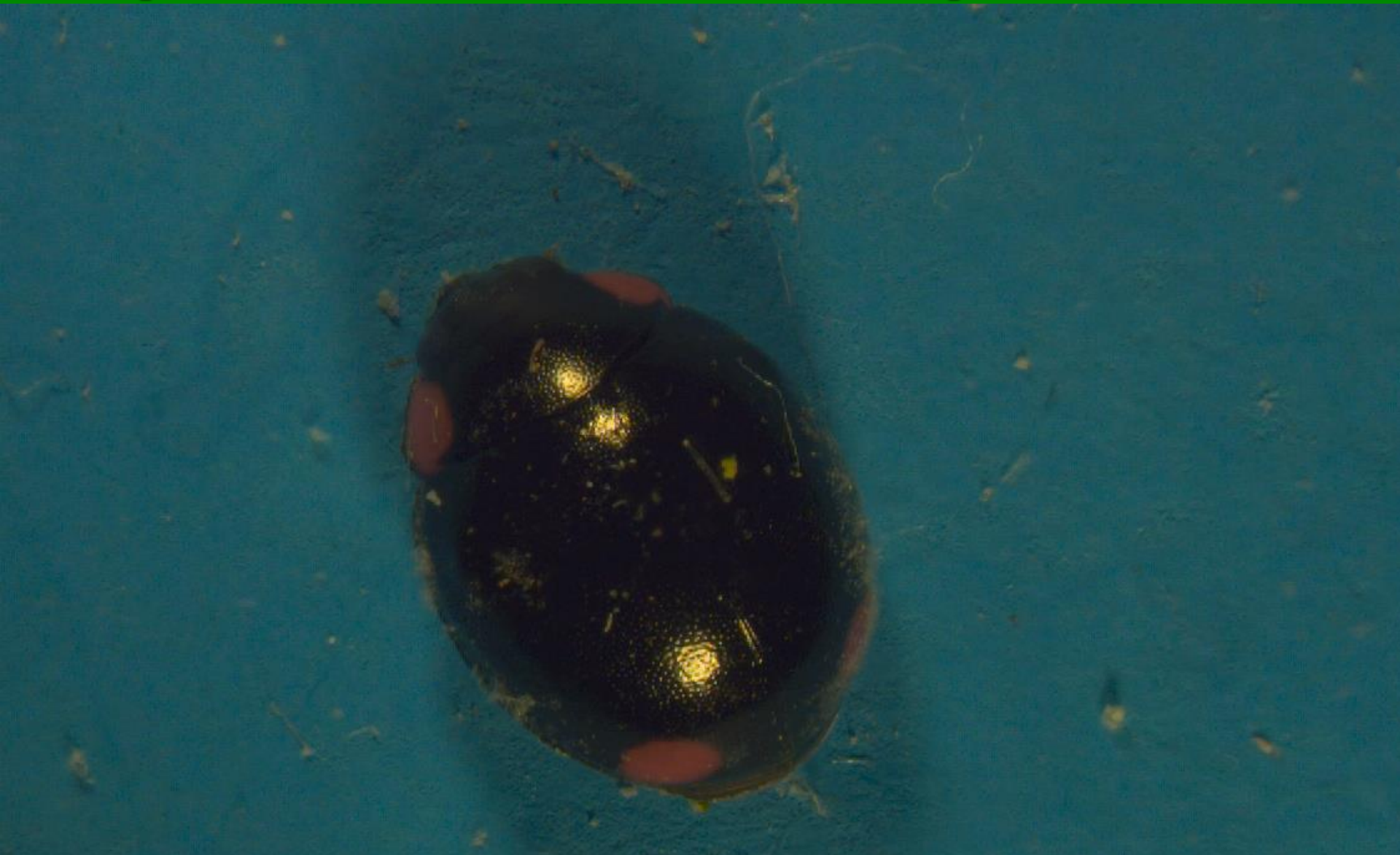
Crape Myrtle Bark Scale Populations - USA



An IPM Approach to Crape Myrtle Bark Scale Control With or Without Neonicotinoids

- As needed, use a JD9-C spray gun at 125 – 150 psi with insecticidal soap solution or pressure wash to physically remove scale
- Apply a dormant application of horticultural oil
- With reduced scale populations, predaceous lady beetles have a better chance of achieving an acceptable level of biological control

Hyperaspis bigeminata (A Scale Predator)

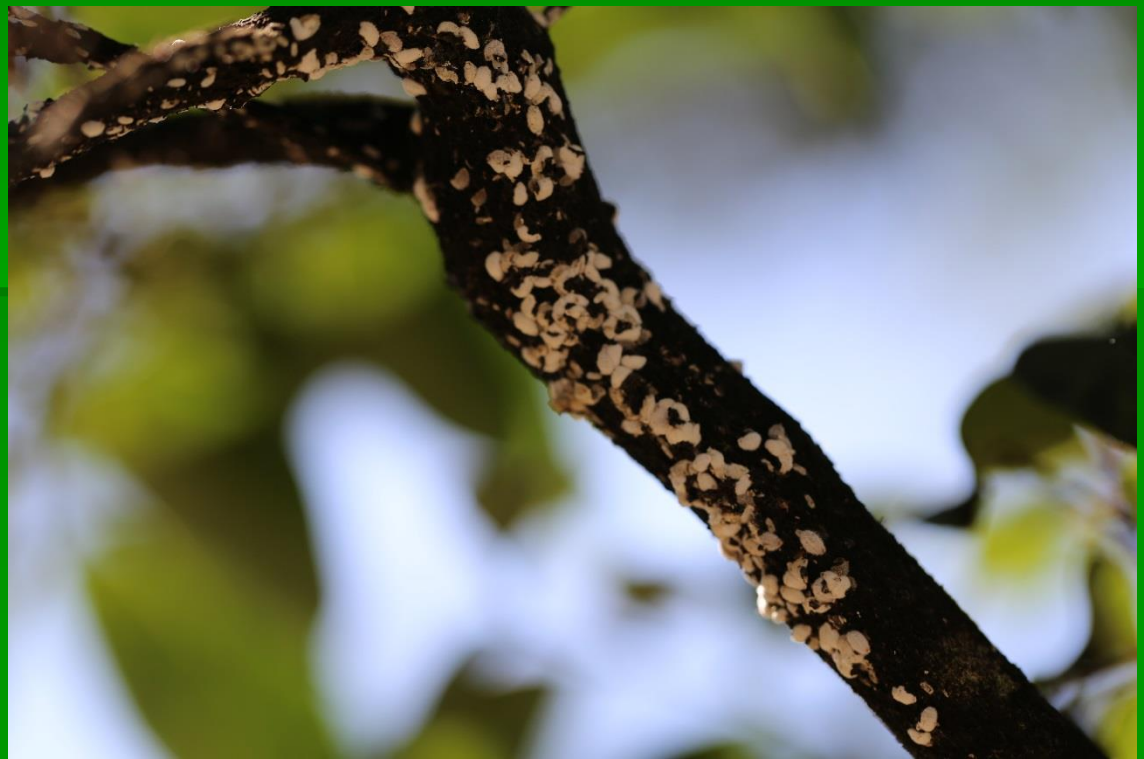


Crape Myrtle Bark Scale Control in the Landscape

- Drench with imidacloprid (Merit and other brands), thiamethoxam (Meridian 25 WG) or dinotefuran (Safari 20 SG) in the spring prior to scale crawler emergence

Crape Myrtle Bark Scale Control in the Landscape

- Target crawlers with sprays of acetamiprid (TriStar) when they emerge, probably around mid-May and again for second generation crawlers in early August



Crape Myrtle Bark Scale Control in the Landscape

- Insect growth regulators (IGRs) such as pyriproxyfen (Distance, Fulcrum) and buprofezin (Talus 70DF) target crawlers
- IGRs have not been evaluated on this pest but have been very effective on many species of immature scale

Scale Monitoring

- Sticky traps can be made to catch the emerging scale crawlers

- Use double sided Scotch tape, black electrical tape, or even white tape coated with a thin layer of petroleum jelly (Tape color depends on crawler color)

- Flag the branch and check at least once per week starting 10-14 days before expected emergence

Japanese Maple Scale

- Very small, white body
- Generalist – attacks numerous species!
  - cherry, dogwood, *Euonymus*, holly, hornbeam, *Itea*, lilac, linden, magnolia, maple, pyracantha, privet, *Prunus*, redbud, serviceberry, *Stewartia*, *Styrax*, yellowwood, & *Zelkova*

Image courtesy of A. Fulcher, UT

UT Extension
W277

Japanese Maple Scale:

An Important New Insect Pest in the Nursery and Landscape

Amy Fulcher, Assistant Professor, Plant Sciences
Frank Hale, Professor, Entomology and Plant Pathology
and Mark Halcomb, Area Specialist, UT Extension

Introductory Information

A relatively new pest has been identified in Tennessee and several other states that is proving to be a difficult pest to control. The insect is Japanese maple scale (*Lopholeucaspis japonica* Cockerell), and, unfortunately, it infests many more plant species than just Japanese maple. The insect's

Appearance

Japanese maple scale (JMS) is a small, oystershell-shaped, armored scale (Figure 1). The waxy coating over the body is white, but the female, eggs and crawlers (the immature stage) are lavender (Figures 2 and 3). Scales are most commonly found on bark but can be found on leaves, in particular, leaves of

6:37 PM
1/16/2012

- Two generations per year in KY, TN and MD
- East coast, south of us, and spreading
- While this pest has been in many states for years it has recently become an emerging nursery pest (KY in 2006, TN in 2010)
- New on-line fact sheet at: https://utextension.tennessee.edu/publications/Documents/W277.pdf

Adult Female (Dorsal)

Japanese Maple Scale Chemical Control

- All season horticultural oil targeting adults and eggs during dormant period
- In spring and summer target the crawlers with:
- pyriproxifen (Distance) – IGR
- buprofezin (Talus 70DF) – IGR
- horticultural oil (0.5-1 percent) can be tank-mixed with Distance or Talus for improved control)

A New Native Weevil Pest of an Introduced St. John's Wort, *Hypericum calycinum*

Plesiobaris albilata (LeConte)

3 mm (1/8 inch)

Emerald Ash Borer

- First U.S. find in Detroit, Michigan in 2002
- Thought to have been there 6 to 10 years before being discovered
- Subsequently, eradication was attempted but failed

Monitoring for Emerald Ash Borer Adults Using Purple Sticky Traps

Emerald ash borer adult image courtesy of The Ohio State University

Infestation expanding from East Tennessee into Middle Tennessee

D-Shaped Exit Holes

Ash Trees Killed by EAB in Michigan

Ash Trees Killed by EAB

First found in Michigan in 2002
(Image taken 9-11-2003)

Southwest Ohio
2013

Knox County TN
2010

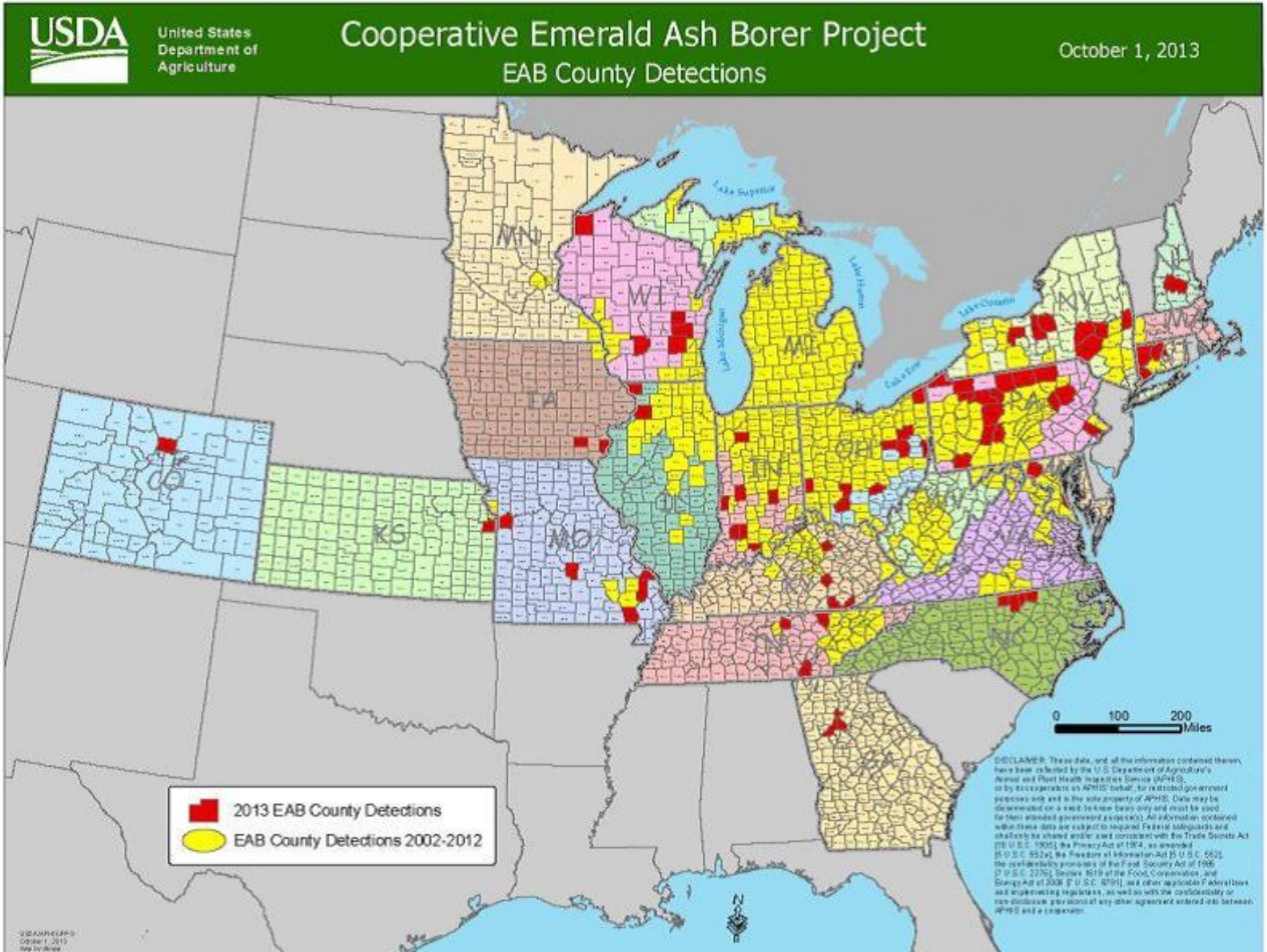
Emerald Ash Borer Larvae

Extensive Feeding Girdles Tree

Early Canopy Thinning in Loudon County

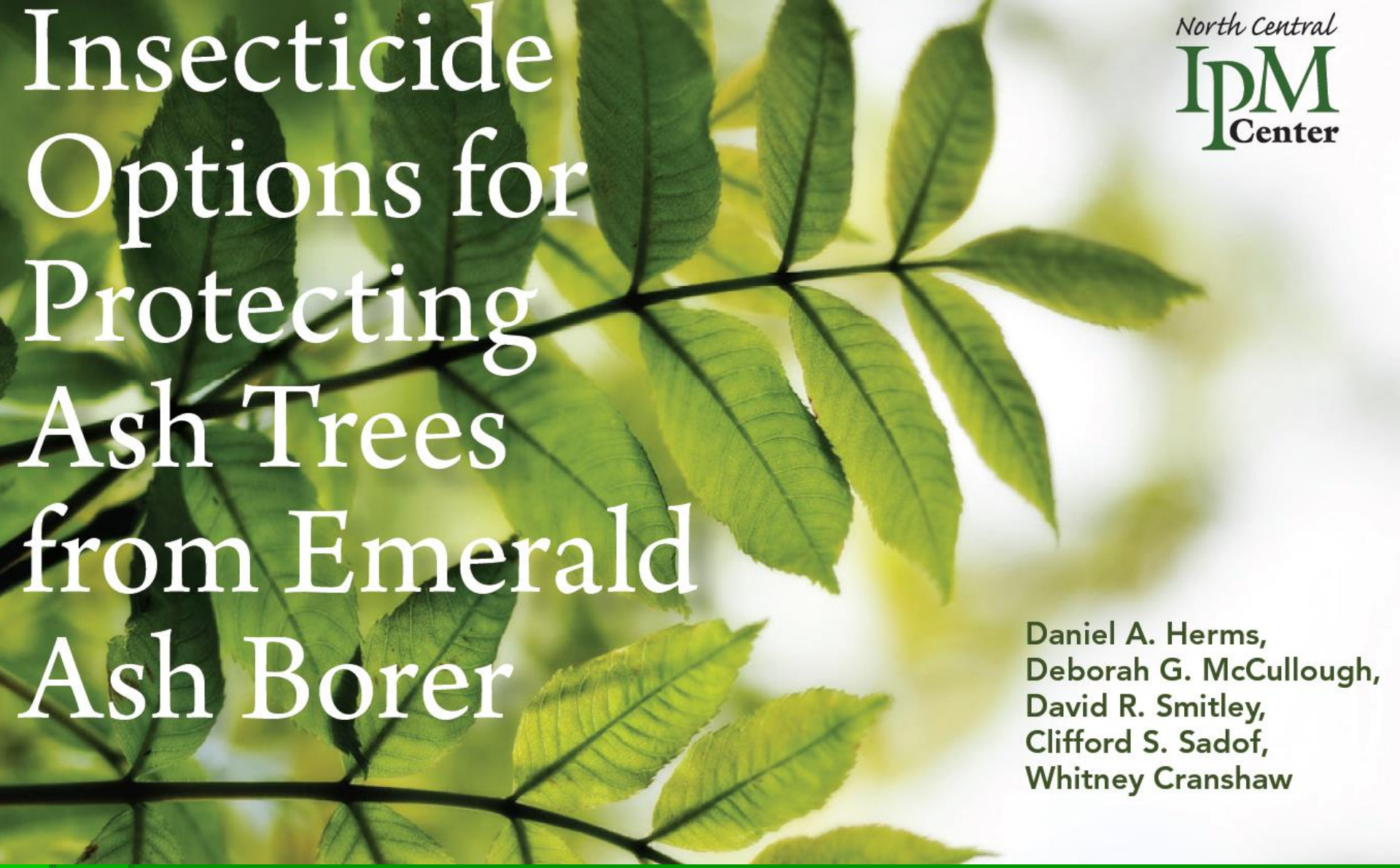
Image courtesy of Kristy Stultz, USDA APHIS

Blonding by Woodpeckers


USDA
United States Department of Agriculture
Cooperative Emerald Ash Borer Project
EAB County Detections
October 1, 2013
MN
WI
MI
IA
IL
IN
OH
PA
NY
ME
VT
NH
MA
CT
RI
NJ
MD
DE
WV
VA
NC
SC
GA
KY
TN
MS
AL
MO
KS
CO
0
100
200
Miles
2013 EAB County Detections
EAB County Detections 2002-2012
N

Emerald Ash Borer Biological Control

- Biological control agents (several species of parasitoid wasps from Asia) have been brought to the U.S. and are being evaluated
- Releases in Tennessee & other states may aid in the natural control of emerald ash borer
- Dr. Jerome Grant has overseen the releases in Tennessee



- http://www.emeraldashborer.info/files/multistate_EAB_Insecticide_Fact_Sheet.pdf

Asian Longhorn Beetle

- Native to China, Japan and Korea
- White markings on a black body
- First discovered on maple, horsechestnut and elm trees in Brooklyn, NY in October 1996
- Later found in Chicago's North Side in July 1998 and most recently in Clermont County Ohio (east of Cincinnati)

USDA United States Department of Agriculture
Animal and Plant Health Inspection Service

ASIAN LONGHORNED BEETLE.com

WHERE IS IT? | SPOT IT | REPORT IT | LEARN MORE | GET INVOLVED

SPOT IT

The adult ALB (Asian Longhorned Beetle) is a distinctive-looking insect with the following unique characteristics:

- 1 inch to 1 ½ inches in length
- Long antennae banded with black and white (longer than the insect's body)
- Shiny, jet black body with distinctive white spots
- Six legs
- May have blue feet

While the ALB may appear threatening, it is harmless to humans and pets.

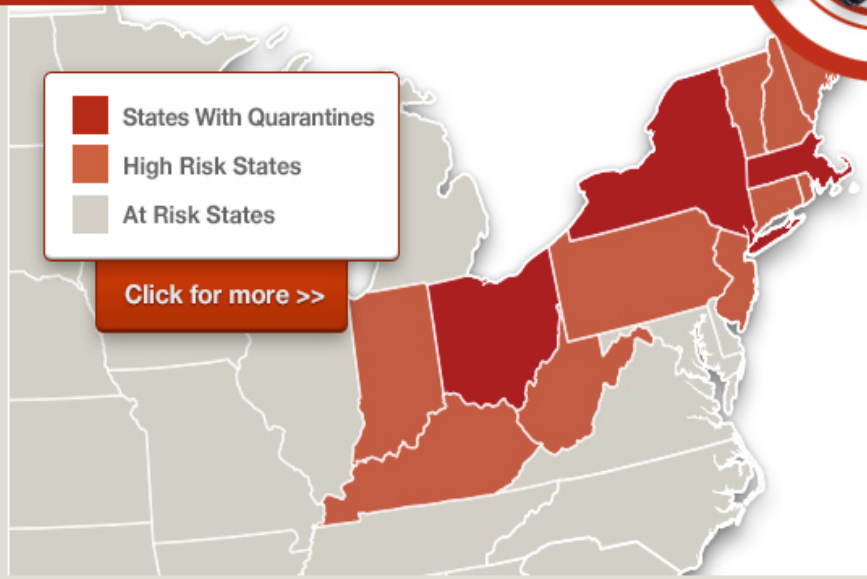
http://asianlonghornedbeetle.com/spot-it/

USDA United States Department of Agriculture
Animal and Plant Health Inspection Service

ASIAN LONGHORNED BEETLE.com

Like Suzanne Buglady Wainwright and 29,004 others like this.

QUICK LINKS
Report it Now!
States fighting the ALB:
MASSACHUSETTS
NEW YORK
OHIO
About the ALB
Know the Signs
Educator
Partner
Public Meetings
FAQ



http://beetlebusters.info/

KNOW THE BEETLE: KNOW THE SIGNS:

HELP US SAVE TREES

- Conduct annual tree check
- Report beetles or signs of damage
- Allow officials access to survey
- Purchase firewood where you will burn it
- Diversify the trees you plant

Sign-up for the ALB eNewsletter

How are we doing?

HAVE YOU SEEN THE BEETLE?

YES NO

LATEST NEWS

Bell tolls for ALB

Beetle trackers hunt for 'hitchhikers'

ALB Ohio Marshalling Yard Solicitation

Beetle Busters: A Rogue Insect and the People Who Track It, by Loree Griffin Burns, Now Published

APHIS Extends Tree Removal Hours for Tate Township, Ohio

August Is Tree Check Month. A Devastating Pest Could Change the Way You View the Great Outdoors

FACEBOOK

Follow Us

Trees are such a huge part of our communities, especially during the holiday season! Learn more about the trees we need to protect from ALB: http://bit.ly/YwbawT

2 weeks + 1 day ago

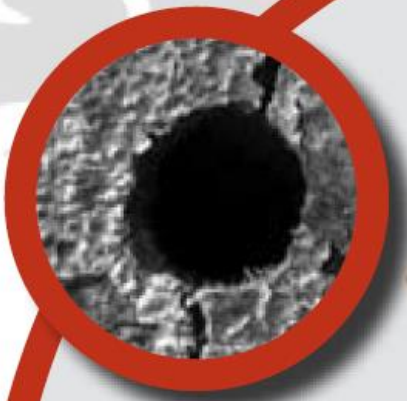
The USDA has issued a solicitation for quotes for the management and operation of the ALB marshalling yard in Tate Township, Ohio. Responses must be received by 3:00 p.m., January 13, 2015: http://1.usa.gov/1wLnQkg

Asian Longhorn Beetle

- Larvae chew into the tree doing extensive tunneling damage while adults exit the tree leaving it riddled with round holes and oozing sap

- While tree removal is used extensively for infested trees, imidacloprid soil or trunk injection is used on an area-wide basis to lower the populations of foraging adult beetles

WHAT ARE THE SIGNS?



Dime-sized exit holes

Shallow scars in bark

Sawdust-like material around tree

Dead branches

The beetle

Once t
beetle infe
no cure. The o
can do is look for an

http://beetlebusters.info/wp-content/uploads/2013/03/about_alb_infographic.pdf

KNOW THE SIGNS

In the summer, the adult beetles chew their way out, leaving dime-sized, 1/4 inch or greater, perfectly round exit holes.

http://asianlonghornedbeetle.com/spot-it/


Adult feeding


Larva
UGA1253027


Exit holes
UGA1253009


UGA4798040

Asian Longhorned Beetle Host Trees

More than 80,000 trees lost so far

- Ash
- Birch
- Golden rain tree
- Hackberry
- Poplar
- Willow
- Horse chestnut
- Maple
- Mountain ash
- Elm
- Katsura
- London plane tree

http://beetlebusters.info/wp-content/uploads/2013/03/about_alb_infographic.pdf

Spotted Lanternfly Found in Pennsylvania

Image courtesy of L. Barringer, Penn. Dept. of Agri.

An Invasive Pest from Asia

Has potential to greatly impact grape, fruit tree, and logging industries

Courtesy of H. Raguza, Pennsylvania Dept. of Agri.

Spotted Lanternfly Nymphs

This planthopper has attacked 25 plant species in Pennsylvania

Images courtesy of Park et al. 2009

Spotted Lanternfly Egg Masses

Pink hibiscus mealybug (Maconellicoccus hirsutus)

http://entnemdept.ufl.edu/creatures/orn/mealybug/mealybug.htm

Pink Hibiscus Mealybug Adult Female

Pink hibiscus mealybug

- Adult mealybugs are small (about 3 mm long) and pink in body color but covered with a waxy secretion. The waxy filaments are short and females are usually obscured by this white mealy wax.

- When adults are crushed their body fluids are also pink. Adult males are smaller than females, reddish brown and have one pair of wings. Males have two long waxy "tails."

http://entnemdept.ufl.edu/creatures/orn/mealybug/mealybug.htm

Eggs

http://entnemdept.ufl.edu/creatures/orn/mealybug/mealybug.htm

Pink Hibiscus Mealybug Nymphs

Pink Hibiscus Mealybug on Hibiscus

Arborvitae Leafminer Top Side Damage

Underside of Foliage with Exit Holes


Exit Hole

Arborvitae Leafminer

- Tiny caterpillars (1/8 inch long) found infesting arborvitae in Sullivan County in 2015 and Davidson County in January 2016
- One generation per year with larvae inside the mines most of the year
- Moth (3/8 inch wingspan) emergence unknown for Tennessee (possibly in mid-to late May)

Arborvitae Leafminer moths

Questions?

https://tiny.utk.edu/ag/insectandmite

https://tiny.utk.edu/ag/turfinsect

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