



RUTGERS
THE STATE UNIVERSITY
OF NEW JERSEY



2025 Ornamental IPM Program Webinar

Contemporary IPM Topics and Management

July 22, 2025

Bill Errickson & Steve Rettke (Monmouth)

Tim Waller (Cumberland)

Support: Erin Quinn

Cooperating Agencies: Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and Boards of County Commissioners, Rutgers Cooperative Extension, a unit of the Rutgers New Jersey Agricultural Experiment Station, is an equal opportunity program provider and employer.

TODAYS SPEAKERS

Bill Errickson (Ag. Agent - Monmouth County RCE)

Steve Rettke (IPM Program Associate – Monmouth County RCE)

Tim Waller (Ag. Agent – Cumberland County RCE)

Erin Quinn (IPM Program Support)

Disclaimer - Materials do not cover all possible control scenarios and are intended for licensed professionals. Tradenames do not imply endorsement and are used as examples. You must strictly follow the label for each compound prior to use. Rutgers is not responsible for misused materials or damages thereof. The label is the law. Labels will provide detailed information on use and restrictions. Additionally, application intervals, compatibility, surfactant use, PHI, PPE, important and other key information is described in detail. Always discuss treatments with your local agents. **Note: Neonicotinoids can only be legally applied in commercial agriculture settings by licensed applicators.** Guidelines and recommendations made in this presentation are specific to the state of New Jersey.

Agenda



1. Beneficial: Predacious Mites
2. Juniper Webworm
3. Azalea Whitefly
4. Bark cracks of tree trunks
5. 'Dog-day' Cicada
6. European Hornet
7. Orange-striped Oakworm
8. Tulip tree Aphid
9. Vascular disorders and diseases
10. Imaging resources
11. Guest lecture next week RU - PDL

Current GDD: 7/22/25
North NJ: 1710 GDDs
Central NJ: 1900 GDDs
Southern NJ: 2025 GDDs

Updates

Pear Psyllid (*Cacopsylla pyricola*) -
Active now (ornamental and fruit tree pears)



Life stages of psyllids, showing stages of the pear psyllid *Cacopsylla pyricola* (Foerster) as an example. (A), adult female; photograph of Brian Valentine and used with permission (https://www.britishbugs.org.uk/homoptera/Psilloidea/Psyla_pyricola.html, accessed on 29 November 2023); (B–D), Eggs, mid-instar nymph, and last-instar nymph; photographs provided by Elizabeth Beers, Washington State University, and used with permission.

Potato leafhopper (*Empoasca fabae*)
Continued activity & damage



Photo: Tim Waller - RCE

Updates

Cryptomeria Scale

(1750 – 2130 GDDs = 2nd gen crawlers)

Cryptomeria Scale
on Canaan Fir



Joe Boggs, OSU Extension©

Be mindful of predators!

Twice-Stabbed Lady Beetle
Feeding on Cryptomeria Scale



Joe Boggs, OSU Extension©

Armored scales (*Diaspididae*)

Management

- **Cultural Practices:**

- **Natural predators:** brown lacewings, green lacewings, lady beetles, & **Parasitoid wasps**
- **Prevent dusty conditions**
- Reduce plant stress
- Dispose of heavily infested plants

Materials

○ **Contact insecticides:**

- Carbamates [1A]: carbaryl
- Pyrethroids [3A]: -thrins
- Organophosphates [1B]: acephate (translaminar), malathion

○ **Considerations:**

- **Will harm non-target species**
- Timing is essential in controlling armored scales (target crawler stage before waxy covering forms)

○ **Systemic insecticides:**

- **Neonicotinoids** [4A]: dinotefuran, acetamiprid, thiamethoxam
- Tetrionic acids [23]: spirotetramat

Biorationals:

- Insecticidal soaps and **Horticultural oils**
 - Neem oil
- **Insect growth regulators:**
 - **Pyriproxyfen** [7A]
 - **Buprofezin** [16]

Updates

You might be seeing signs & symptoms of:
Tulip Tree Scale (*Toumeyella liriodendri*)



Still a little too early for optimal treatment window
2037-2629 GDDs = Crawler emergence
(long crawler period and vulnerable for longer period)



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Contemporary IPM Topics and Management

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<https://sites.rutgers.edu/nursery-ipm/>

Beneficial Insect: Predacious mites (*Phytoseiidae*)

- **Commonly found in and amongst spider mite populations**
- Lay eggs singly in spider mite populations on the bottom of surface leaves along the veins
- All stages are oval and shiny-white to tan in color
- **Adults can be distinguished from spider mites by their shiny, unspotted pear shape with hairs that are less noticeable than spider mites**
- **Move much faster than spider mites** on a beating tray
- Consume an average of 20 pest mites in a lifetime, with some species consuming more than 100 each
- Adult females lay about 60 eggs over several days, and even more if a greater number of prey mites are present
- Mated females overwinter in deep bark crevices
- **Prey pests: Mites (spider mites, broad mites, rust mites, cyclamen mites)**



Photo via UMD Extension

Current GDD: 7/22/25
North NJ: 1710 GDDs
Central NJ: 1900 GDDs
Southern NJ: 2025 GDDs

Beneficial Insect: Predacious mites (*Phytoseiidae*)

Photo credits: Colorado State
Extension



Photo: Monica Farfan,
Wikimedia Commons



Photo: Eric Palevsky



Photo: Whitney
Cranshaw, CSU



Photo: DG James

UGA5303071

Current GDD: 7/22/25
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Beneficial Insect: Predacious mites (*Phytoseiidae*)



Fostering Predacious Mite Populations

- If spider mite populations are low, consider not spraying and allow predacious mites to maintain pests below threshold levels
- Commercially available for release to control spider mites
- Will disperse once they have eaten all their prey
- May need to be re-deployed if pest populations return
- Establish naturalized areas to serve as a reservoir for predaceous mites

Pesticide Impacts / Considerations

- Avoid or reduce use of broad-spectrum insecticides
- Use the least toxic materials for mite control
- Horticultural oil can be applied pre-bloom to suppress pest mites early in the season with little impact on predacious mites still in their protected overwintering sites
- Spray only when necessary – be especially careful with miticides

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Juniper webworm (*Dichomeris marginella*)

GDD Window (base 50): 1645-1917

- Spins silk to fasten together the needles and twigs of juniper
- Overwinter as partially grown black-headed, brown striped worms inside webbed juniper needles
- Adults emerge from May to July and lay tiny, whitish-pink eggs before dying
- Eggs hatch in about 10 days, and tiny, light dark to reddish brown, ¼" long pupa emerge
- **Larvae initially mine within the foliage, but later completely consumes needles**
 - Needles will brown from initial puncture
 - Mined needle is used as protection for the worm
- **Tiny, white web is formed around the mined leaf, which grows to encompass dead needles as the worm grows**
- Caterpillars are ¾" long, whitish brown with reddish brown stripes
- Adults are small, skinny, brown moths, about ½" in length, with white wings
- Often go unnoticed, and only fly when they are disturbed
- As they age, older worms are grayish brown with three stripes down their backs
- **Symptoms first appear similar to spider mite damage since needles yellow, but webbed needles will brown and die**
- Community webs can form by the following spring
- Small shrubs can be completely webbed
- Aesthetic damage can be severe
- **Host plants:** Juniper (Irish juniper is especially susceptible)



Juniper webworm webbing on 'Shore' juniper.

Photo by J. R. Baker

Current GDD: 7/22/25

North NJ: 1710 GDDs

Central NJ: 1900 GDDs

Southern NJ: 2025 GDDs

Juniper webworm (*Dichomeris marginella*)



Photo: Steve
Rettke, RCE



Photos: JR Baker,
NCSU



Current GDD: 7/22/25
North NJ: 1710 GDDs
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Juniper webworm (*Dichomeris marginella*)



GDD Window (base 50): 1645-1917

Management

- Cultural Practices:

- **Natural parasitoids:** Braconid and Ichneumon wasps
- Prune out infested branches and webs
- Reduce plant stress
- Monitor for correct timing of insecticide applications

Materials

○ **Contact insecticides (must get past web):**

- Spinosyns [5]: spinosad
- Carbamates [1A]: carbaryl
- Pyrethroids [3]: -thrins

○ **Systemic insecticides:**

- Organophosphates [1B]: acephate
- Diamides [28]: chlorantraniliprole

○ **Considerations:**

- Will harm non-target species

Biorationals:

- Azadirachtin [UN]
- Bt [11]
- Spinosad
- Chlorantraniliprole

Current GDD: 7/22/25

North NJ: 1710 GDDs

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Southern NJ: 2025 GDDs

Azalea whitefly (*Pealius azaleae*)

GDD Window (base 50): Gen 1 (448 to 700), Gen 2 (1250 to 1500), Gen 3 (2032 to 2150)

- Tiny, 1/16" long, powdery white insects that look like very small moths
- Adults emerge in the spring and females lay their eggs in the lower surfaces of new leaves
- Eggs are initially creamy white and translucent but turn gray with time
- Crawlers are tiny and yellow, looking like pollen grains
- Crawlers suck sap from the plant using threadlike mouthparts
- Crawlers molt into yellowish-orange, scale-like nymphs
- Overwinter as nymphs on leaves
- **Crawlers and nymphs secrete honeydew, which can grow sooty mold**
- Infested plants become unattractive
- **Clouds of adults may fly up when a plant is disturbed**
- **Primarily feed on the underside of leaves, sucking sap, causing leaves to yellow and curl**
- Can cause premature leaf drop
- **Host plants:** all azalea cultivars, rhododendrons, especially those with hairy leaves



An azalea whitefly with a nymph (black arrow) and an egg (green arrow).

Photo by J. R. Baker, NC State University

Current GDD: 7/22/25

North NJ: 1700 GDDs

Central NJ: 1900 GDDs

Southern NJ: 2025 GDDs

Azalea whitefly (*Pealius azaleae*)

Photo credits Steve Rettke, Rutgers RCE unless otherwise noted



Photo: JR
Baker, NCSU



Photo: John A.
Weidhass



Photo: John A.
Weidhass

Photo: Clemson
University

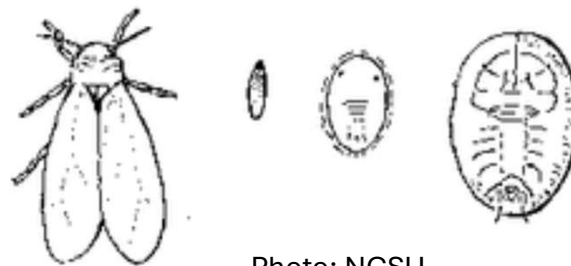


Photo: NCSU

Current GDD: 7/22/25
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Azalea whitefly (*Pealius azaleae*)



GDD Window (base 50): Gen 1 (448 to 700), Gen 2 (1250 to 1500), Gen 3 (2032 to 2150)

Management

- **Cultural Practices:**

- **Natural predators:** parasitic wasps (*Encarsia formosa*), lady beetles, lacewings, predatory mites
- Yellow sticky traps
- Reduce plant stress
- Improve air circulation between plants
- Syringing

Materials

○ **Contact insecticides:**

- Pyrethroids [3]: -thrins
- Carbaryl

○ **Systemic insecticides:**

- Neonicotinoids [4A]: imidacloprid
- Abamectin
- Acephate (translaminar)

○ **Considerations:**

- Will harm non-target species

- **Biorationals:**

- Buprofezin (IGR)
- Pyriproxyfen (IGR)
- Spiromesifen
 - Lipid & cell membrane inhibitor
- Pymetrozine
 - (select feeding blocker)
- Horticultural oils & soaps
 - One treatment in the fall and another after new growth emerges in the spring

Current GDD: 7/22/25

North NJ: 1710 GDDs

Central NJ: 1900 GDDs

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Middleman Topics



1. Bark Cracks of Tree Trunks
2. Annual "Dog-Day" Cicada
3. European Hornet
4. Orange-Striped Oakworm

Bark Cracks of Tree Trunks

Photo credits Steve Rettke,
Rutgers, unless otherwise noted



Rarely any need for immediate concern when managing trees with bark cracks, but open wounds can increase the potential exposure to wood decay fungi and infestations by wood boring insects

Drought cracks:

- **Susceptible trees:** maple, honey locust, crabapple, mountain ash, London-plane
- **Occur most commonly when trees are first planted and a year or so after transplant**
- Trunks will crack if trees become too dry
- **Typically represent a one-time event and will generally close or seal almost completely and never reopen again**
- Can occur on any side of tree



Bark Cracks of Tree Trunks

Photo credits Steve Rettke,
Rutgers, unless otherwise noted



Rarely any need for immediate concern when managing trees with bark cracks, but open wounds can increase the potential exposure to wood decay fungi and infestations by wood boring insects

Frost cracks:

- **Susceptible trees:** maples, sycamores, beech, lindens
- **More likely to continue to open and close over subsequent years**
- Usually less freezing and thawing is required to re-open the crack in the future
- Can occur on any side of tree
- **Development of a conspicuous callus ridge often occurs over time**



Bark Cracks of Tree Trunks

Photo credits Steve Rettke,
Rutgers unless otherwise noted



Rarely any need for immediate concern when managing trees with bark cracks, but open wounds can increase the potential exposure to wood decay fungi and infestations by wood boring insects

Sunscald wounds:

- **Susceptible species:** maple, honey locust, fruit trees (cherry), ash, oak, linden, willow
- **When sunscald occurs on the south or southwest side of tree trunks, they can create cracks**
- Generally, never close or seal over, and may often increase in size as the tree grows
- **Young, thin-barked deciduous trees are most susceptible**



Bark Cracks of Tree Trunks

Cracks
created from
Pruning
Wounds?



Photo Credit: SK Rettke, Rutgers Coop. Ext.

'Dog-day' cicada (*Neotibicen canicularis*)

GDDs = 1500 (approx.) adult emergence

- **Host plants:** A variety of woody plants, including common trees & shrubs
- Often overlooked because periodical cicadas are more publicized
- **Emerge early July and die by mid-September**
- Can be heard throughout NJ singing their “electric buzz-saw” screams
 - **Screams are not synchronized, and less loud than periodical cicadas**
 - Each male sings for 15 seconds
- Less dense populations than periodical cicadas
 - **2–3-year life cycles:** Emergence is not synchronized, and so some will emerge every year



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'Dog-day' cicada (*Neotibicen canicularis*)

GDDs = 1500 (approx.) adult emergence

- Mated females use their ovipositors to insert eggs through the bark of small terminal twigs on trees
- **Females create slits in the twigs to deposit their eggs**
 - Causes flagging – twigs and small branches turn brown and wither before dying back
- **Splits and punctures in the branches can appear as straight lines or rows of puncture marks**
 - Can cause broken branches
- **Nymphs feeding on roots can weaken or stunt plant growth**
- Look for shed exoskeletons on trees and other surfaces



Photo: SK Rettke,
Rutgers Coop. Ext.

Current GDD: 7/22/25

North NJ: 1710 GDDs

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Southern NJ: 2025 GDDs

Photo credits Steve Rettke, Rutgers RCE unless otherwise noted



'Dog-day' cicada (*Neotibicen canicularis*)



Adult
Emergence

Photo Credit: Britannica



Ovipositor



Singing to the ladies
on a pine tree



Pupal
Cast
Skin



More
Exoskeletons

1500 GDDs (approx.)
= adult emergence

Current GDD: 7/22/25

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**Eastern Cicada
Killer Wasp** →
(*Sphecius speciosus*)



**Predator of
Annual "Dog-
Day" Cicada**



Photo Credits:
SK Rettke,
Rutgers Coop. Ext.

'Dog-day' cicada (*Neotibicen canicularis*)

Management

• **Cultural Practices:**

- **Natural predators:** cicada killer wasps (*Sphecius speciosus*), birds, bats, spiders, mantises, rodents
- **Protect young trees and shrubs with netting or cheesecloth**
- **Delay planting new trees until cicada season is over**
- **Prune and remove damaged twigs within three weeks of egg laying**

**Cicada eggs
inserted into
tree stem**

Materials

• **Contact insecticides:**

- Carbamates [1A]: Carbaryl
- Pyrethroids [3]: -thrins
- Organophosphates [1B]: Chlorpyrifos

• **Considerations:**

- Will harm non-target species

- **Biorationals:**

- Horticultural oils
- Insecticidal soaps
- Water and vinegar solution? (1 cup vinegar to 4 cups water)



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European Hornet (*Vespa crabro*)

GDD Window (base 50): 1388-2271 (1st activity)

- **Host plants:** Birch, rhododendron, lilac, dogwood
- Amber, honey-colored wasps that are 2x the size of bald-faced hornets
- **Gouge bark sections to mix the woody tissue with their saliva to create paper nests and feed young larvae**
- Return each season to the same tree or shrub
- **Size of colony nests can range between 300-1000 workers**
- Nests can be found near girdled trees/shrubs within the cavities of hollow tree trunks (often more than 6 feet above the ground)
- **Colony can remain active until the late weeks of October and early November until all members begin to die-off**
 - Only the overwintering queens survive within protected nest areas



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European Hornet (*Vespa crabro*)

GDD Window (base 50): 1388-2271 (1st activity)

- Causes bark girdling and stripping
 - Feeding occurs as if they are eating corn on the cob
 - Branch death above these areas are inevitable since conducting tissues are severed
- Workers will often actively be foraging at night
- Can provide some beneficial pest controls for moths, caterpillars, yellow-jackets, etc.
- **Can be a threat to domestic honeybee hives**
- May sting if handled, but usually not aggressive towards people, but will become agitated and defensive if the nest colony is threatened

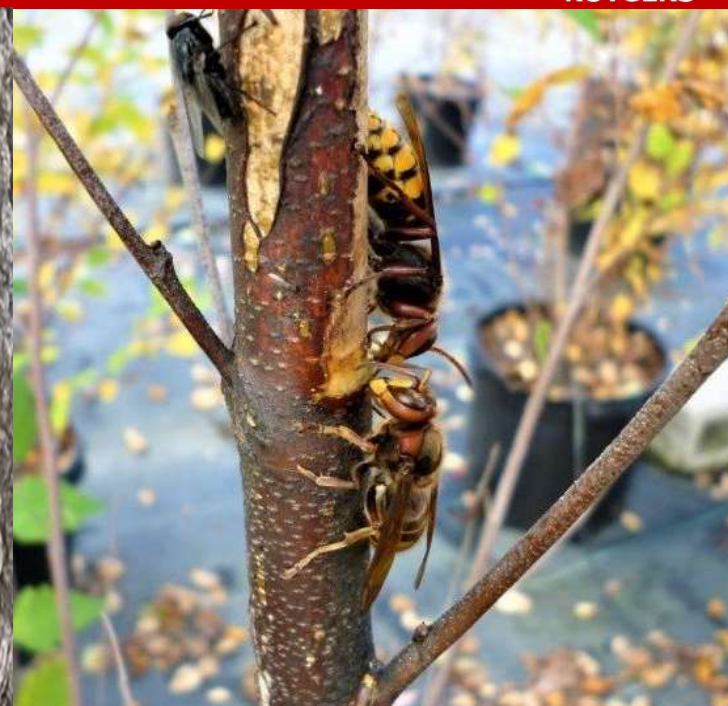


Photo Credit: SK Rettke,
Rutgers Coop. Ext.

Photo credits Steve Rettke, Rutgers RCE unless otherwise noted



European Hornet (*Vespa crabro*)



Current GDD: 7/22/25

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European Hornet (*Vespa crabro*)



GDD Window (base 50): 1388-2271 (1st activity)

Management

- **Cultural Practices:**

- Observing natural flight patterns away from host trees/shrubs may help to locate nest

Materials

- No registered landscape or nursery pesticide materials for controls
- Plugging or use of an insecticide at entrance areas in trees or wall voids will probably not be effective since a new entrance will typically be created
- When necessary, hire a professional exterminator for the safe removal of nests

Current GDD: 7/22/25

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Orange-Striped Oakworm (*Anisota senatoria*)

GDD Window (base 50): (1917 egg hatch)

- **Host plants: Mostly oaks**, but can be found on birch, hazelnut, hickory, maple, and other hardwood trees
- **Moths are brown with a white spot and a dark stripe down each wing**
 - Male moths are smaller with transparent forewings
- Eggs hatch about a week after being laid
- **Caterpillars are tiny, greenish-yellow with a pair of horns behind their heads, and eventually grow to become black worms with yellow stripes**
- Young worms feed together and alone when they grow older



Photo via Steve Rettke,
Rutgers Coop. Ext.

Current GDD: 7/22/25
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Southern NJ: 2025 GDDs

Orange-Striped Oakworm (*Anisota senatoria*)

GDD Window (base 50): (1917 egg hatch)



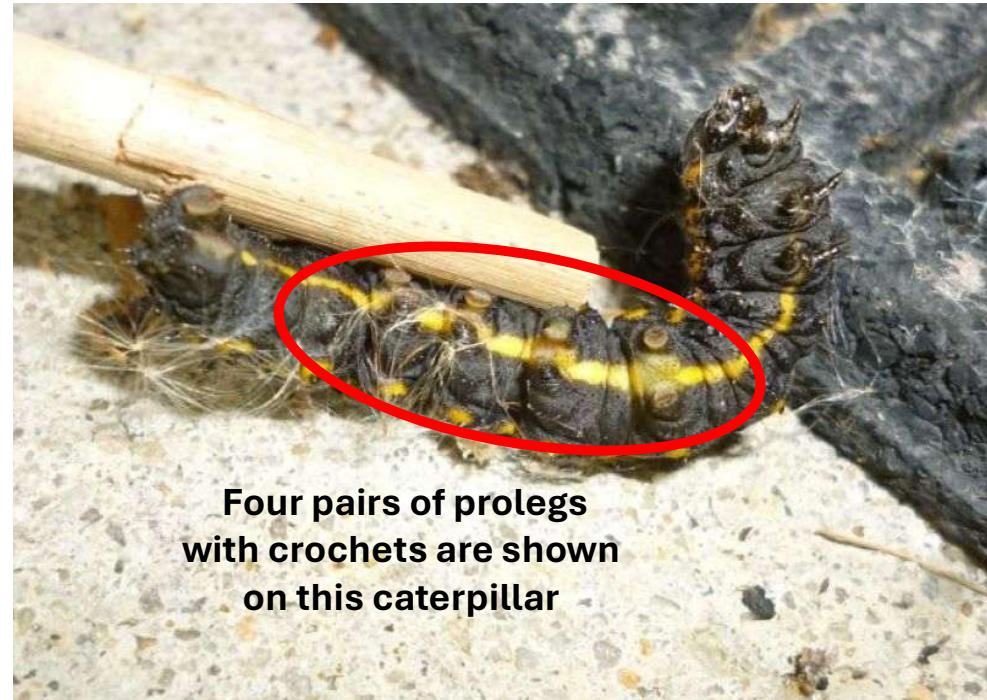
Orangestriped oakworm eggs almost ready to hatch and young eggs (insert).

Photo by Erich G. Vallery, USDA Forest Service - SRS-4552, Bugwood.org
Insert photo by J. R. Baker, NC State University

Orange-Striped Oakworm (*Anisota senatoria*)

GDD Window (base 50): (1917 egg hatch)

- One generation per year
- Late season defoliators are less harmful to large trees
- Worms produce frass pellets that can drop down from infested trees
- Mature worms can be found outside of the trees, on the sidewalk or near yards
- **Caterpillars dig into the soil to pupate about three inches down, where worms overwinter as pupae**
- Defoliation causes twig dieback and can be made worse due to sun scald or other stressors
- **Small trees can be defoliated by mid to late summer**



Four pairs of prolegs
with crochets are shown
on this caterpillar

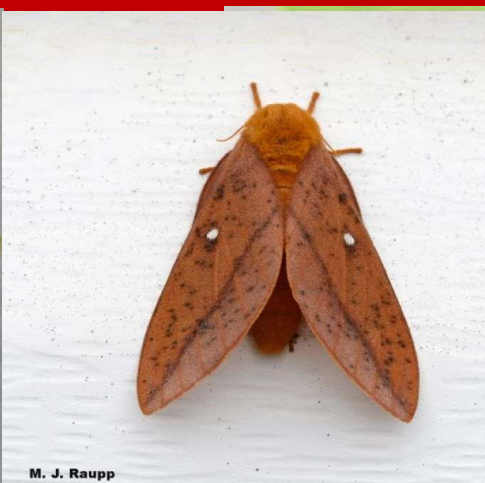
Photo Credit: Steve Rettke,
Rutgers Coop. Ext.

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Photo credits Steve Rettke, Rutgers RCE unless otherwise noted



Orange-Striped Oakworm (*Anisota senatoria*)



M. J. Raupp

Egg hatch = 1917 GDDs



Current GDD: 7/22/25

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Southern NJ: 2025 GDDs

Orange-Striped Oakworm (*Anisota senatoria*)



GDD Window (base 50): (1917 egg hatch)

Management

• **Cultural Practices:**

- **Natural predators:** birds, paper wasps, parasitoids
- **Shake branches of small trees to make the caterpillars fall to the ground and squish them**
- Install wasp nest boxes nearby to enhance predator populations

Materials

○ **Contact insecticides:**

- Pyrethroids
- Carbaryl

○ **Systemic insecticides:**

- Abamectin
- Emamectin benzoate

○ **Considerations:**

- Most trees are too large to fully treat with sprays

- **Biorationals:**

- *Bt* [11] *var. kurstaki*
- Spinosad
- Chlorantraniliprole
- Diflubenzuron (IGR)
- Horticultural oils/soaps
 - young larvae with good coverage

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Tulip tree aphid (*Illinoia liriodendri*)

GDD Window (base 50): 1151-1514, 1917-2033

- Wingless aphids are 1/8" long, spindle-shaped, and pale greenish-yellow or pinkish-red, with black antennae that are longer than the body
- Winged aphids have translucent wings, a green abdomen, and a reddish-brown thorax and head
- Females give birth to tiny, green aphids in the spring and summer months
- Feed on the underside of leaves
- Large populations lead to honeydew buildup
- Females lay overwintering eggs in cracks in the bark near buds
- Eggs hatch at bud break
- Causes distortion of buds and foliage
- Honeydew can grow sooty mold and attracts flies and wasps
- **Host plants:** tulip tree



Photo via Lyle Buss, UF/IFAS

Current GDD: 7/22/25
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Tulip tree aphid (*Illinoia liriodendri*)

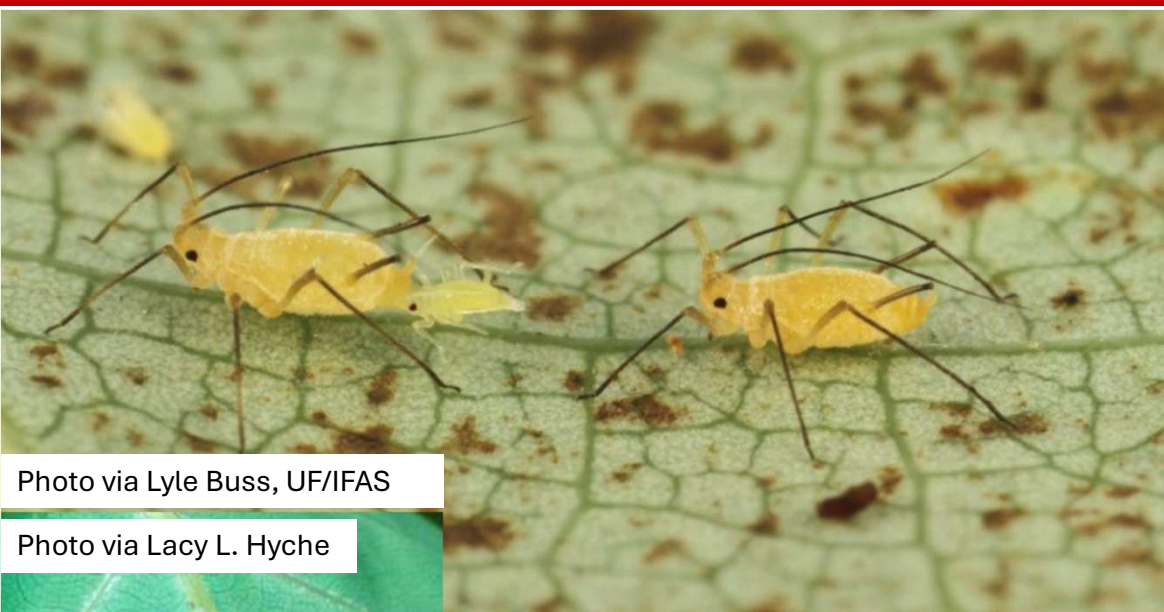


Photo via Lyle Buss, UF/IFAS

Photo via Lacy L. Hyche



Photo via SD Frank



Tuliptree aphids. Note the syrphid fly egg (arrow).

Photo by Robert L. Anderson, USDA Forest Service, Bugwood.org (arrow added)

Current GDD: 7/22/25

North NJ: 1710 GDDs

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Southern NJ: 2025 GDDs

Tulip tree aphid (*Illinoia liriodendri*)



GDD Window (base 50): 1151-1514, 1917-2033

Management

• **Cultural Practices:**

- **Natural predators:** lacewings, lady beetles, parasitic wasps, lady beetles, syrphid flies, *Cephalosporium lecanii* fungus
- Support beneficial insects
- Syringing
- Reduce plant stress

Materials

○ **Contact insecticides:**

- Pyrethroids
- Carbaryl

○ **Systemic Materials:**

- Neonicotinoids [4A]: imidacloprid
- Organophosphates [1B]: acephate (translaminar), diazinon
- Abamectin

○ **Considerations:**

- Water the tree before spraying, spray early in the morning or in the evening
- Will harm non-target species

- **Biorationals:**

- Insecticidal soaps
 - (suppression)
- Horticultural oils
- Acetamiprid (spray only)
 - Reduced risk neonicotinoid
- Pymetrozine
 - Reduced risk (disrupts feeding behavior)

Current GDD: 7/22/25

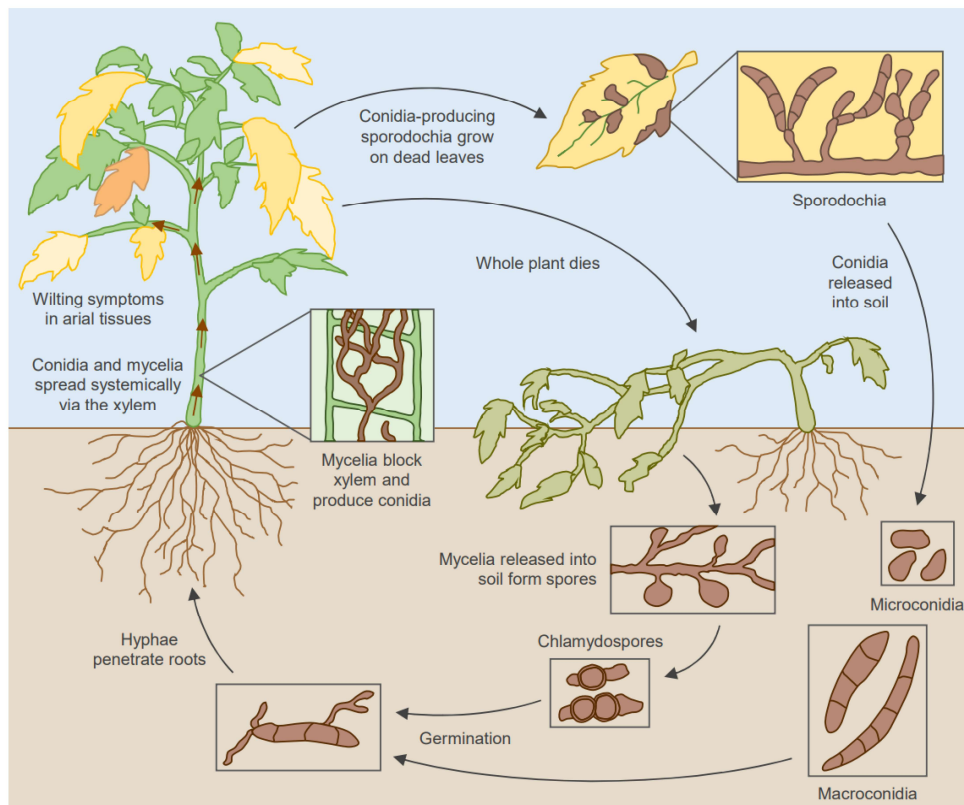
North NJ: 1710 GDDs

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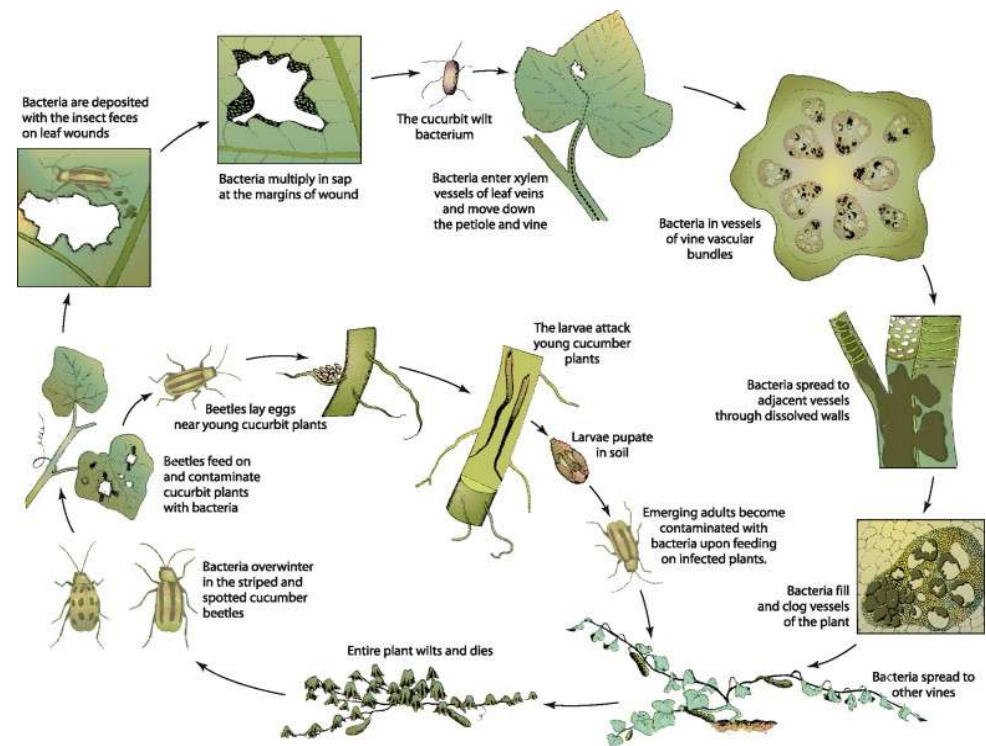
Vascular disorders and diseases

Fungal wilts / vascular diseases



<https://doi.org/10.3390/pathogens13100823>

Bacterial / Phytoplasma vectored diseases



<https://ars.els-cdn.com/content/image/3-s2.0-B978008047378950018X-f12-21-9780080473789.jpg>

Vascular disorders and diseases

Vascular Streak Dieback (VSD) *Ceratobasidium* sp.

Botryosphaeria and *Phomopsis* look-a-likes



Table 1. List of woody ornamental plants diagnosed with vascular streak dieback in six U.S. states as of March 2023.

Genus	Species	Common Name
Acer	griseum	paperbark maple
Acer	rubrum	red maple
Acer	x freemanii	Freeman's maple
Amelanchier	canadensis	serviceberry
Calycanthus	florida	sweetshrub
Catalpa	bignonioides	Southern catalpa
Catalpa	speciosa	Northern catalpa
Cercis	canadensis	redbud
Cornus	florida	Flowering dogwood
Cornus	kousa	Kousa dogwood
Crataegus	viridis	green hawthorn
Fothergilla	ssp.	witch alder
Hamamelis	virginiana	witch hazel
Lindera	benzoin	spicebush
Liriodendron	tulipifera	tulip poplar
Magnolia	tripetala	umbrella magnolia
Myrica	cerifera	wax myrtle
Nyssa	sylvatica	black gum

Huge list of susceptible plants
Has not been officially ID'ed in NJ

Vascular Streak Dieback: An Emerging Problem on Woody Ornamentals in the U.S.

<https://www.pubs.ext.vt.edu/SPES/spes-483/spes-483.html>

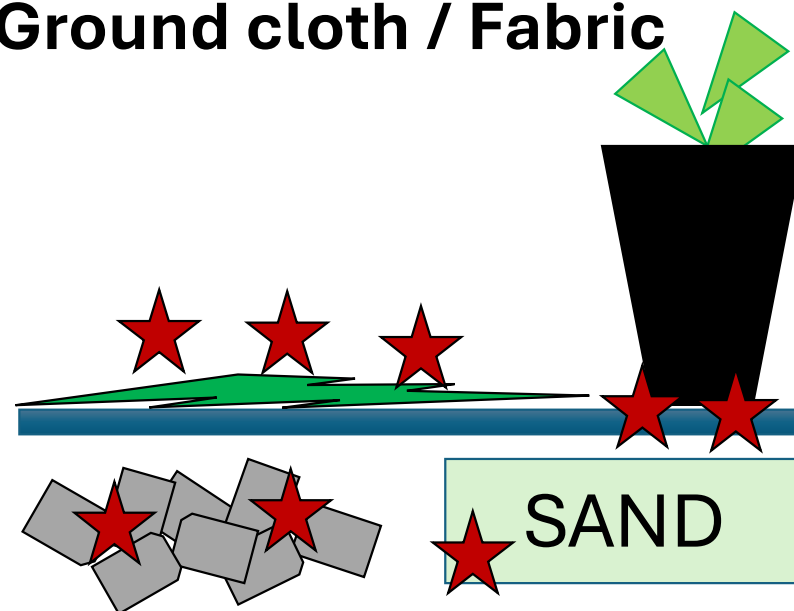
Sanitation



Containers should not be set directly on soil where *Phytophthora* can be splashed up onto plants, causing foliar blight and root rot.

<https://www.oregon.gov/oda/shared/documents/publications/nurserychristmastree/managingphytophthora.pdf>

Ground cloth / Fabric



★ = Pathogen

Sanitation – Pot in Pot considerations

What happens if we had a diseased plant in this socket pot?

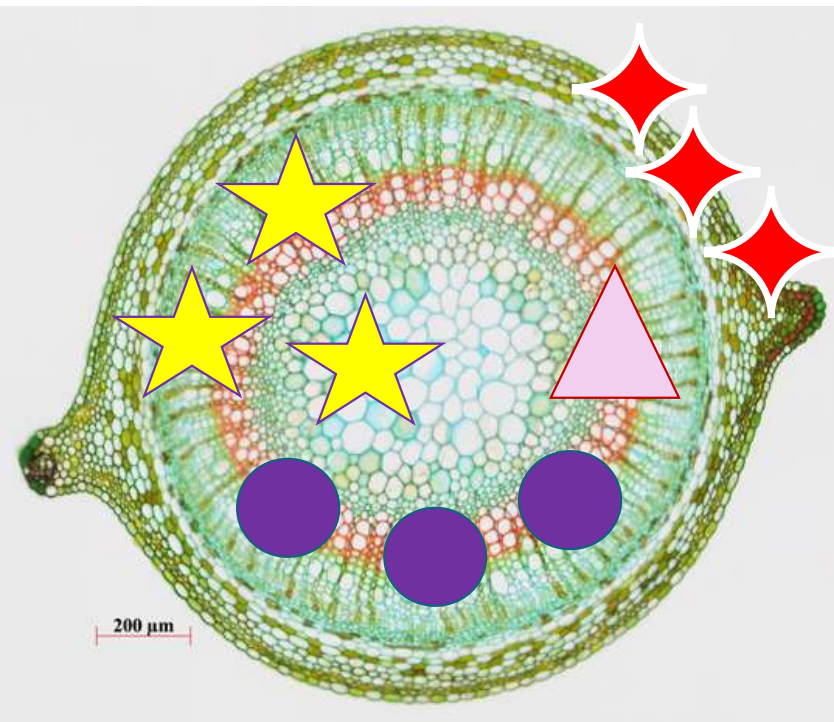
Especially vascular / root diseases like Verticillium, Fusarium, Rhizoctonia, Oomycetes, etc.

Cleaning and sanitizing prior to new plants or even changing out the socket pot would be an ideal situation.

Change out the spray stakes too



<https://butterflygardening.wordpress.com/2013/10/23/pot-in-pot-system-for-plants-and-trees/>



● Bacteria

★ Viruses

△ Canker or Oozing Fungi

◆ Sticky spore fungi

Vascular disorders and diseases

Bacterial Leaf Scorch (BLS)

Bacterium: *Xylella fastidiosa* (note causes many other diseases)

Common Hosts: **Oak (many)**, Ash (white), Box elder, Dogwood (flowering, oriental), Elm (American), Gingko, Hackberry, Mulberry (white), Maple (red, silver, sugar), Sweet gum, Sycamore, London plane



Look for a pronounced marginal discoloration with a dull red or yellow halo between scorched and green tissues



Premature color change

Transmitted (aka vectored) by
Xylem feeding insects

Blue green sharpshooter
(oak)

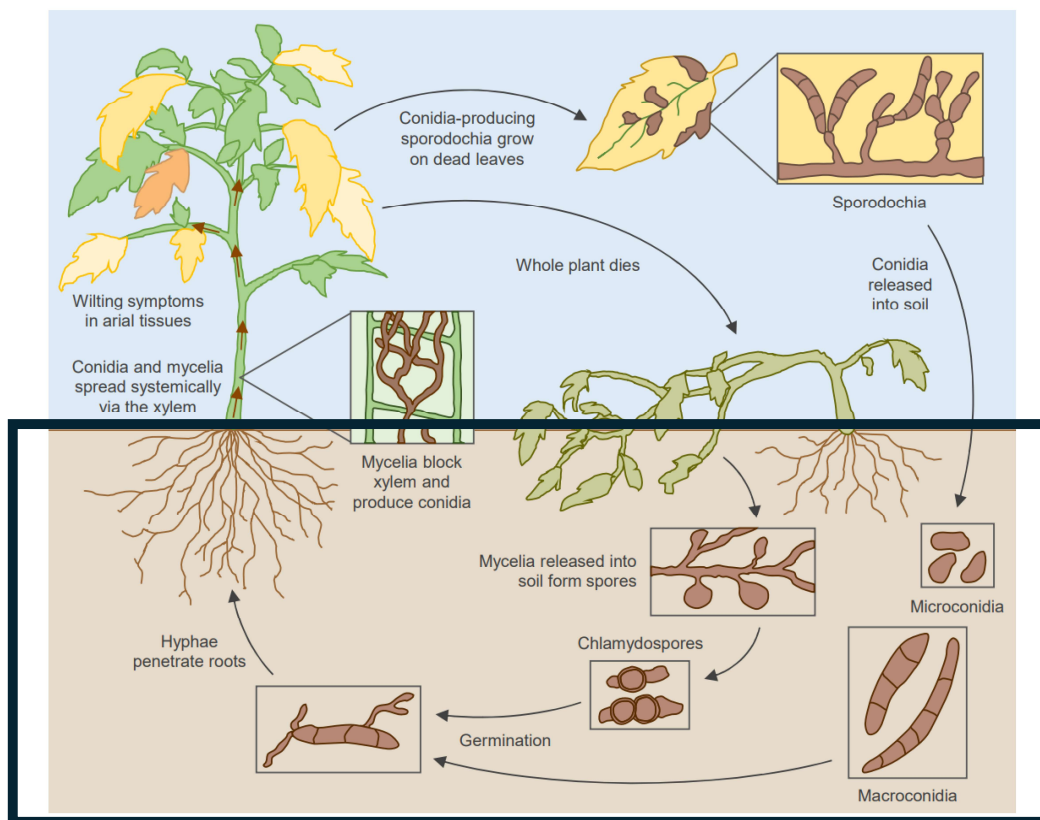


UC Statewide IPM Project
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**IPM TARGET =
INSECT VECTORS**

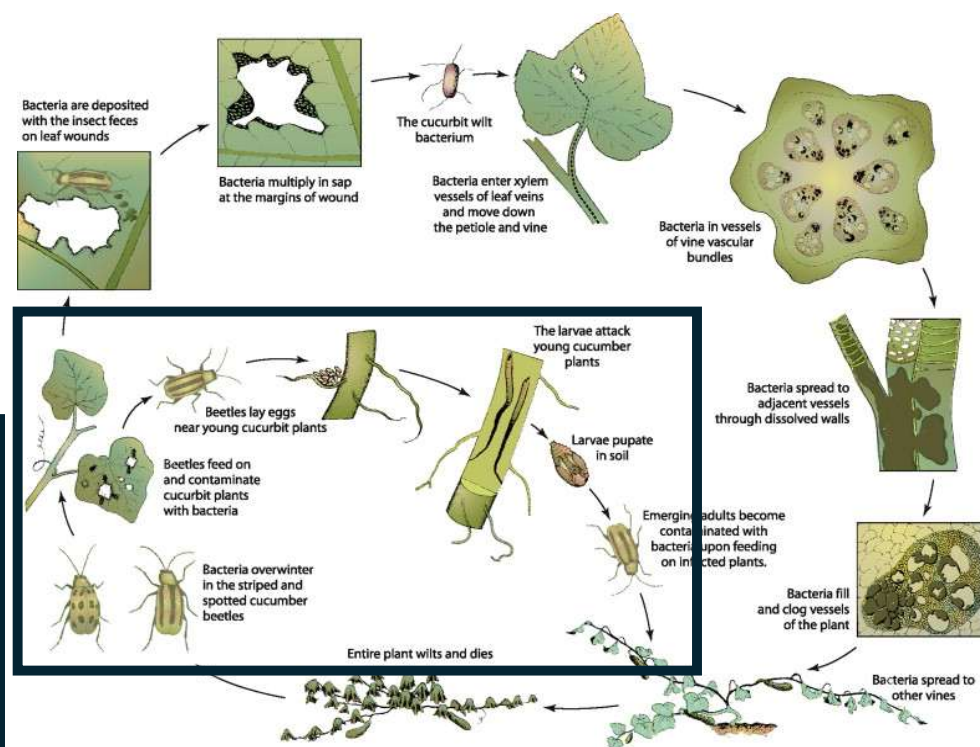
Can you manage the disease?

Fungal wilts / vascular diseases



<https://doi.org/10.3390/pathogens13100823>

Bacterial / Phytoplasma vectored diseases



<https://ars.els-cdn.com/content/image/3-s2.0-B978008047378950018X-f12-21-9780080473789.jpg>

Imaging resources

All photos: Tim Waller - RCE



Thank you for attending



Presentation will be available on our website.

Next session: August 12th, 2025

Tentative key topics for next time:

Guest speaker:

Richard Buckley

Director, Soil Testing and Plant Diagnostic Services

New Jersey Agricultural Experiment Station

Rutgers Cooperative Extension

PLEASE SHARE WHAT
YOU SEE WITH US!

**ALWAYS OPEN TO NEW
TOPICS AND IDEAS**

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Implementation of IPM in New Jersey
-Ornamental Crops 2025

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Enables us to learn more about specific issues

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nutritional /

Arthropod
pest

Disease



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New Jersey Agricultural
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Online version >



Beta-version 2023
Contact: twaller@njaes.rutgers.edu

Nursery & Landscape Pest Scouting
Scouting with growing degree-days



Rutgers Green Industry Working Group

Contact: Timothy Waller, Ph.D.

twaller@njaes.rutgers.edu

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