

Cultivating Cumberland

July - 2023

Vol. 28, Issue 7

Table of Contents

Deer Fencing Grants	1
Mid-Winter Maple Classic Conference	2
The Irrigator's Pocket Guide	2
Magnesium Deficiency in Tomato	3-4
2023/2024 New Jersey Commercial Tree Fruit Production Guide	4
Downy Mildew Confirmed on Cucumber in Southern New Jersey	5-6
List of Proposed Regulated Species & Exemptions	6
Nursery Pest and Disease Update	7-9
Managing Food Safety Risks in Hydroponics Operations	9
Landscape Pest Notes for Late June / Early July 2023	10-14
Calendar of Events & Regularly Scheduled Meetings	15-16

Attachments

- Nursery & Landscape Pest Scouting with GDD
- Pesticide Container Recycling
- GDD for July

NJDA ANNOUNCES DEER FENCING GRANTS FOR UNPRESERVED FARMS

Jeff Wolfe, New Jersey Department of Agriculture

New Jersey Department of Agriculture Secretary Douglas Fisher announced May 15th the Department is now accepting applications for cost-share grants for the installation of deer fencing on unpreserved farms. Unpreserved farm owners or operators in New Jersey may receive up to 50 percent matching funds (\$20,000 maximum, no more than \$200 per acre) if their application is approved. Grants will be awarded on a first-come, first-served basis until all funds for the fiscal year are expended.

"This is an excellent opportunity for eligible New Jersey farmers to seek funds that will give them a way to protect valuable crops that may be susceptible to deer damage, and we encourage farmers to apply," Secretary Fisher said. This program is possible because of legislation (P.L.2021, c.451), which provided funding in Governor Murphy's budget for deer fencing.

In 2019, New Jersey Farm Bureau commissioned a study to assess white-tailed deer populations in eight New Jersey counties. The report concluded that deer densities per square mile are on average 4-5 times greater than safe and sustainable numbers. That survey was conducted by wildlife habitat planning and management consultancy Steward Green using drone-based thermal imaging technology, trained wildlife biologists and infrared analysts to perform an in-the-field analysis to estimate deer populations in seven study areas encompassing more than 12,730 acres, or approximately 20 square miles. The areas surveyed were in Atlantic, Cumberland, Hunterdon, Mercer, Monmouth, Passaic, Somerset, and Warren counties. Steward Green's survey revealed that there are on average approximately 80-100 white-tailed deer per square mile in the areas covered by the study.

For more information about the NJDA deer fencing grant go to <https://www.nj.gov/agriculture/grants/>. There is deer fencing available for farms enrolled in the State Agriculture Development Committee farmland preservation program. More information can be found at <https://bit.ly/453c4Xa>.

Note: As of June 21, 2023 there has only been one applicant.

Mid-Winter Maple Classic Conference

The NYS Maple Producers' Association is pleased to announce that the popular Mid-Winter Maple Classic conference will return in January 2024. The Syracuse Oncenter Convention Center is the new location for the conference, which combines a vendor trade show and a forum of workshops for maple producers. The conference will open at 5pm Friday January 5 and again Saturday January 6 at 8am. This year's theme of "What's Flowing Down the Maple Pipeline?" will focus on the newest techniques and innovations, giving attendees tools to produce high quality maple syrup efficiently and sustainably.

Find more information at <https://nysmaple.com/mapleclassic/>

It will be held at the Oncenter Convention Center, 800 S State St, Syracuse, NY 13202

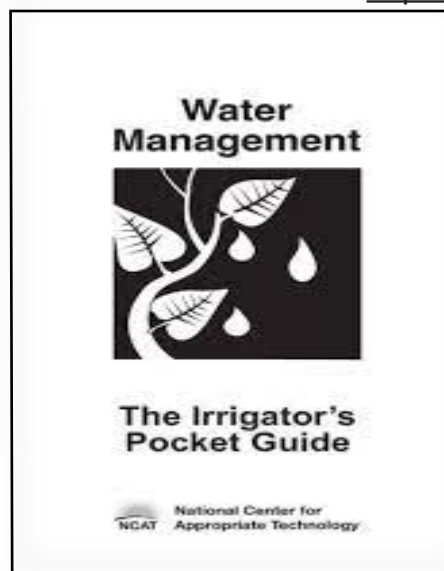
The Irrigator's Pocket Guide

Wesley Kline; June 13, 2023

A classic ATTRA publication has just been updated by author Mike Morris. The Irrigator's Pocket Guide is a take-to-the-field guide that demystifies the art of irrigation management, explains everything you need to know about soil moisture and crop water use, and shows you how to optimize crop yields while conserving water, soil, and energy.

The Equipment Maintenance half of the book features exceedingly clear and detailed maintenance and troubleshooting procedures for pumps, motors, engines, control panels, and distribution systems. The Water Management guide on the other side of the book provides a step-by-step guide to irrigation water management for sprinkler, surface, and microirrigation systems.

A limited number of print copies are available, in a convenient 4" x 6" format with durable waterproof covers, or the publication is available for download. Specially adapted versions of this publication are available for New Mexico, Colorado, Texas, and California, through ATTRA's topic area on Water. A limited number of print copies are available for free at our office, Rutgers Cooperative Extension, 291 Morton Ave., Millville, 08332. The pocket guide can be found online at: <https://attra.ncat.org/publication/irrigators-pocket-guide/>



Magnesium Deficiency in Tomato

Michelle Infante-Casella; June 8, 2023

plant-pest-advisory.rutgers.edu/magnesium-deficiency-in-tomato

How can growers prevent nutrient deficiencies in crops? Soil testing and tissue testing for fertility management of vegetable crops is key to having the correct levels of nutrients to have a high yielding, high quality crop to harvest and market. Soil testing is best done in fall so that pH levels can be adjusted with soil amendments like lime that correct pH levels for maximum return on fertilizer uptake. Why adjust pH to proper levels? Plant nutrients are hindered in availability when soil pH is either too high to too low. Besides pH, fertility levels are important to monitor and adjust pre-plant for the best start to new seedlings and transplants.

With tomato production it is widely known that calcium (Ca) levels in soil are important for prevention of blossom end rot. Therefore, tomato growers have focused on application of adequate and even high levels of calcium to prevent this fruit disorder. In addition, it is important to also pay attention to magnesium (Mg) levels. Ca and Mg are both important in tomato production and even though blossom end rot can cause tomato fruit to be unmarketable, Mg deficiency can reduce overall plant health and ultimately quality and yield. Magnesium in tomato plants plays an essential role in photosynthesis (the process of the plant to make energy to fuel growth), protein synthesis (necessary in cell formation), activation of plant enzymes (necessary for many cellular and growth functions), and chlorophyll synthesis (the green pigment in plants that is essential for optimum plant growth).

Magnesium deficiency can occur, especially in sandy soils, when soil is overwatered or after heavy rainfall events. However, when Ca and Mg levels are out of balance, deficiencies can still occur even when both are showing adequate levels in the soil. It is more important to look at the actual levels. If one is significantly higher than the other deficiency symptoms may occur. Since both Ca and Mg are +2 ions in soil when taken up by plant roots, the plant indiscriminately takes up these two nutrients. Therefore, if there is abundant Ca and lower Mg, Mg deficiencies may be seen. Conversely, when Mg levels are higher than Ca levels blossom end rot may be seen. It is best to have these two nutrients in soil at the same levels to keep a balance in uptake and ultimately promote both healthy fruit formation and foliage growth. Allowing Mg levels to remain deficient in the plant will result in lower yields and less energy for fruit production later in the plants lifecycle.

Magnesium deficiency is first seen on tomato plants as interveinal chlorosis – yellowing of leaf tissue between the veins of older leaves. Eventually the leaves become mostly yellow and purplish-red spots that become necrotic on the interveinal tissue may occur. See photos taken in the field on June 7, 2023.

Deficiency symptoms can be seen at any stage of growth, but are generally first seen when plants begin to flower, start fruit set, and fruit enlargement. When plants change from vegetative growth (production of leaves and stems) to reproductive growth (flowering and fruiting) leaves are stressed and energy and resources are reallocated into growth and development of new progeny (seed and fruit).

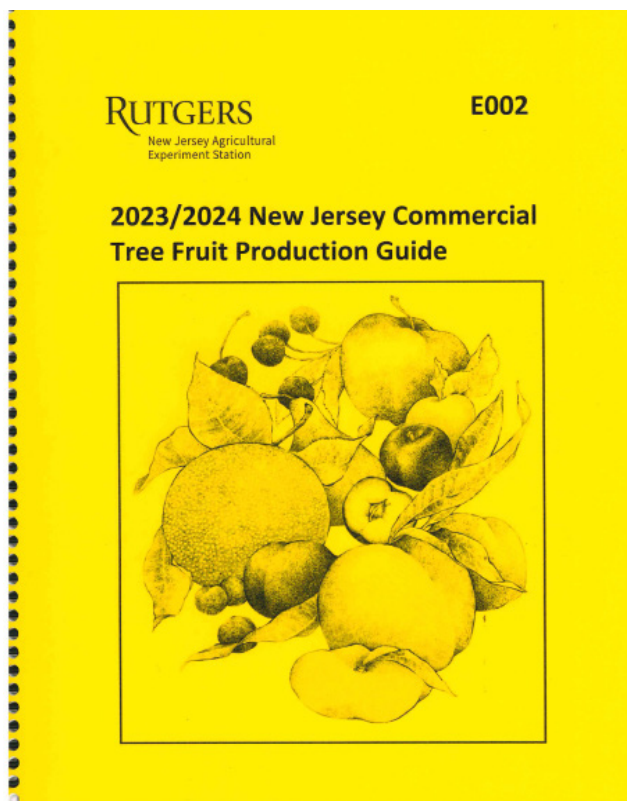
Fortunately, Mg deficiency is easily corrected when caught early in the tomato plant's growth by the application of Epsom salts. Rates differ depending on soil type, soil levels, and plant tissue levels. Mg rates can vary from 5-25 pounds per acre. Application can be done through drip irrigation systems or applied on the soil surface by spraying near the root zone. When applying through the drip tape, be sure to run the lines with cleanwater for at least 20 minutes after the salts have gone thorough to prevent salt build up in the emitters. Foliar applications of Mg can be sprayed on plants, but are not as efficient as soil application and root absorption. There are other products available to correct low levels of Mg, but most data available for the use of Epsom salts to raise Mg levels. Pre-plant, the use of high Mg liming products can balance Ca and Mg levels in soil if Mg levels are lower than Ca levels. Therefore, when lime is needed to raise pH it is very important to look at Ca and Mg levels on the soil test results before selecting which type of lime will work best for adjusting the levels of these two very important plant nutrients.

When managing fertility levels for successful crop production, it is important to know the levels of plant nutrients in soil and tissue tests. It is as important to understand the interactions between plant nutrients and how they affect plant growth. Seeing an "optimum" or "sufficient" level on a soil or tissue test report is not enough to fully determine what is needed for high yielding, high quality crops.

2023/2024 New Jersey Commercial Tree Fruit Production Guide

They are \$25 each. You can pick them up in our office; 291 Morton Ave., Millville.

This fruit production guide is intended for the commercial grower. The proper choice of the herbicide, pesticide, and plant growth regulators is the individual fruit grower's responsibility. This guide is intended to facilitate decision making. This guide is not a substitute for pesticide labeling.



Downy Mildew Confirmed on Cucumber in Southern New Jersey

Beth Gugino, Penn State Extension; 6/14/23

Downy mildew was confirmed on cucumber in Atlantic County, New Jersey, yesterday, June 13, 2023. This is the first report in the mid-Atlantic region this season, and about the same timeframe it was reported on cucumber last year in NJ.

It is important to regularly (almost daily) scout both cucumber and cantaloupe fields. There are two clades of the pathogen, with Clade 2 preferring cucumbers and cantaloupe and Clade 1 preferring jack-o-lantern pumpkin, butternut squash, etc., so both cucumber and cantaloupe are currently at the most risk.

Downy mildew on cucumber has angular lesions that are delineated by the leaf veins, while those on cantaloupe tend to be more irregular. Leaf lesions typically appear 3 to 12 days after infection and are initially light yellow in color before turning darker brown. On the underside of the leaves will be purplish-gray sporulation which confirms that the symptoms are caused by downy mildew. This can easily be confused with angular leaf spot, which is a bacterial disease so spores will not develop on the underside of the leaves. Place suspect leaves in a plastic bag on the counter overnight and then check for spores the next day. A 20x hand lens can also help when checking for sporulation. At the very least, a preventative fungicide program with protectants is recommended on cucumber and cantaloupe. Remember that cucurbit crops are susceptible at any growth stage, from young seedlings to mature plants, and that high tunnel cucumbers are equally susceptible as field-grown crops.

There are many fungicides that are effective for preventatively managing downy mildew when used when conditions favor disease development. To manage for fungicide resistance, it is important to rotate between Fungicide Resistance Action Committee Codes (FRAC codes). These codes/numbers represent different modes of action, so rotating among different FRAC codes as well as tank mixing with chlorothalonil or mancozeb (for single active ingredient products) will reduce the chance for resistance development and can help manage other diseases.

Timing applications when pollinators are least active will also help to minimize any non-target effects. Fungicides for CDM include but are not limited to Ranman (cyazofamid, FRAC code 21), Gavel/Zing! (zoxamide, 22), Tanos/Curzate (cymoxanil, 27), Previcur Flex (propamocarb, 28), Forum/Revus (dimethomorph, 40), Zampro (ametoctradin, 45), and Orondis (oxathiapiprolin, 49). For more specific information on recommended fungicides, see 2022/23 Mid-Atlantic Commercial Vegetable Recommendations. Remember that these fungicides will not be effective for managing powdery mildew and that those effective for powdery mildew will not be effective for downy mildew. Therefore, an accurate diagnosis is important!

Organic management of downy mildew continues to be a challenge and continues to rely on fixed copper-based fungicides. There are, however, a couple of resistant cultivars (DMR 401 and NY 264) that have been recently released by Cornell and demonstrate excellent field-level resistance in the absence of fungicides. If you are not already doing so, consider planting these in the future.

Fungicide options in a high tunnel are more limited and require the product to be labeled for use in the greenhouse. Some options include Previcur Flex (2-day PHI) as well as copper-based fungicides and several biologically based products. For a more complete list of options, see Table E-11 in the 2022/23 Mid-Atlantic Commercial Vegetable Recommendations.

List of Proposed Regulated Species & Exemptions

The initial list of regulated invasive plant species shall include: Norway maple (*Acer platanoides*); tree of heaven (*Ailanthus altissima*); mimosa or silk tree (*Albizia julibrissin*); porcelain berry (*Ampelopsis glandulosa* var. *brevipedunculata*); Japanese angelica tree (*Aralia elata*); Japanese barberry (*Berberis thunbergii*); Japanese clematis (*Clematis terniflora*); autumn olive (*Elaeagnus umbellata*); weeping lovegrass (*Eragrostis curvula*); winged burning bush (*Euonymus alatus*); English ivy (*Hedera helix*); Japanese hop (*Humulus japonicas*); sericea lespedeza (*Lespedeza cuneata*); European privet (*Ligustrum vulgare*); Amur honeysuckle (*Lonicera maackii*); Morrow's honeysuckle (*Lonicera morrowii*); purple loosestrife (*Lythrum salicaria*); Japanese crabapple (*Malus toringo*); Chinese silvergrass (*Miscanthus sinensis*); Eurasian water-milfoil (*Myriophyllum spicatum*); Oriental photinia (*Photinia villosa*); running bamboo species within the genus *Phyllostachys*; Callery or Bradford pear (*Pyrus calleryana*); common buckthorn (*Rhamnus cathartica*); jetbead (*Rhodotypos scandens*); multiflora rose (*Rosa multiflora*); European water chestnut (*Trapa natans*); Siebold's arrowwood (*Viburnum sieboldi*); Japanese wisteria (*Wisteria floribunda*); and Chinese wisteria (*Wisteria sinensis*).

In addition to future exemptions pursuant to section 3b of this Act, the following list of cultivars and varieties of the above regulated species shall be exempted from regulation but shall require accompanying plant labelling and explanatory materials approved by NJDA:

Common Name	Scientific Name	Cultivar Name	Trademark Name
Japenese Barberry	<i>Berberis thunbergii</i>	'Aurea'	
Japenese Barberry	<i>Berberis thunbergii</i>	'UCONNBTCP4N'	Crimson Cutie
Japenese Barberry	<i>Berberis thunbergii</i>	'UCONNBTB113'	Lemon Cutie
Japenese Barberry	<i>Berberis thunbergii</i>	'UCONNBTB048'	Lemon Glow
Japenese Barberry	<i>Berberis thunbergii</i>	'UCONNBTB039'	Mr.Green Genes
Chinese Silvergrass	<i>Miscanthus sinensis</i>	'NCMS1'	My Fair Maiden
Chinese Silvergrass	<i>Miscanthus sinensis</i>	'Tift M77'	Scout

For more information, please contact the New Jersey Nursery & Landscape Association at
njnla.director@gmail.com or 609-291-7070

Nursery Pest and Disease Update

Timothy Waller; 6/15/2023

(Excerpt from Rutgers Plant and Pest Advisory -LONT post)

DISEASES ON THE RADAR

Phytophthora, Pythium, Phytophthium root diseases

Compounds used to control Oomycetes (Phytophthora, Pythium, Phytophthium) are called Oomycides and are fundamentally different than those used for fungal and bacterial diseases. Therefore, proper identification is required, as a plant with a fungal root rot (black root rot or rhizoctonia) would require completely different materials. Contact the Rutgers Plant Diagnostic Lab for diagnostic services. Within available materials there are three main groups, which describe where they will work on the plant given the application technique. Cultural practices are always more important than materials, especially in this case. Management focuses around treating the roots, or providing materials that reach the roots.

Protectants – are non-mobile, meaning they stay exactly where applied, must be root / drench / watered-in, applied.

Xylem mobile systemics – move upwards, and the roots must be treated.

Translaminar systemics – move very short distances into tissues, again meaning the roots must be targeted.

Amphimobile/Fully systemics (P07 / phosphonate group)– can move upwards to needles (xylem) and down to the roots (phloem) meaning foliage or roots can be targeted.

Refer to each label for treatment intervals as they vary greatly, however it is valuable to get ahead of this pathogen as very few materials can “cure” plants. Additionally, more than one material should be in your tool kit as Mefenoxam-resistance has been identified in the Mid-Atlantic region.

NOTE: Do not apply group P07 and copper-based fungicides within 14d of one another, as phytotoxicity is likely to occur!

**Fenstop (Group 11) – NOW APPROVED FOR OUTDOOR NURSERIES!

Leaf spot / foliage disease management

About: Most leaf spots are caused by several different genera of fungi, including but not limited to Alternaria, Colletotrichum, Cercospora, Diplocarpon, Phoma, Phyllosticta, and Septoria. There are also bacteria that can cause leaf spot (Pseudomonas and Xanthomonas) and even foliar nematodes (Aphelenchoides). Some common ornamental species that are regularly affected by leaf spot / foliage pathogens include maple, hydrangea, cherry, crape myrtle, redbud, viburnum, oak, Virginia sweetspire, and rose, though there are many other plants that can also be infected.

Cultural management: While the symptoms may not appear until later in the season, the infection period starts in the spring. Reducing the leaf wetness period by limiting overhead irrigation and increasing airflow can help to prevent these diseases, as well as proper sanitation by removing any diseased leaves from the area.

Material considerations: Protective fungicides and/or bactericides can also be effective if applied early in the season before the symptoms develop. Materials include copper hydroxide, mancozeb, propiconazole, chlorothalonil, myclobutanil, azoxystrobin, or thiophanate-methyl.

Boxwood Blight (BWB) If BWB is important to your business – Use the USPEST Boxwood Blight Risk Model (https://uspest.org/risk/boxwood_app).

Recent VIRUS observations:

Lilac Ring Mottle Virus – *tentatively* identified in multiple varieties of *Syringa vulgaris* in southern NJ. This would be a first-report in our state. Please closely inspect your *Syringa* for any viral symptoms. This virus is reported to spread mechanically (pruning, propagating, equipment). Please see this informative webpage about Lilac Ring Mottle Virus (PNW Pest Management Handbook)

If you suspect this virus in your *Syringa* PLEASE CONTACT – twaller@njaes.rutgers.edu– we would like to compile data to help reporting this in NJ – which will help our growers manage this virus.

Tobacco Rattle Virus – is suspected to be present in multiple hosts, especially Peony. Please be aware this virus has a huge list of host plants and is highly transmissible by plant sap (through pruning, damage, handling, root feeding (nematodes), etc.). Please see this informative webpage about Tobacco Rattle Virus (TRV) (Iowa State)

NUTRIENT MANAGEMENT

Managing Soluble Salts by Monitoring EC (William Errickson – Monmouth RCE)

It is important to monitor fertilizer and salt concentrations in ornamental plants to ensure that the plants are receiving adequate nutrients, while not allowing salts to build up and cause damage. There are various methods to monitor salt concentrations by measuring electroconductivity (EC) and seeing if that reading is within the optimum range for a particular plant species. Two common procedures for measuring EC include the saturated media or paste extract (SME) and the pour through (PT) method. Many university and commercial labs will use the SME method, as it has shown to be reliable and there have been numerous research studies and fertility trials used to develop general interpretation guidelines based on this procedure. However, the process can be somewhat challenging to accurately execute outside of a laboratory setting. The PT method was developed as a simplified and practical way to reliably measure EC for container grown crops. Each method has its advantages in helping to maintain acceptable levels of soluble salts. Strategies to keep salt levels low include: (a) keep adequate moisture in the growing medium, (b) avoid applications of dry fertilizer or highly concentrated nutrient solutions to a dry growing medium, (c) avoid fertilizers that give a high salt stress for a given amount of nutrient (high salt index), and (d) be alert to changes in environmental conditions (like temperature and humidity) that affect plant transpiration, soil water evaporation, and nutrient release from slow or controlled-release fertilizers. For more information, see the fact sheet: *Monitoring and Managing Soluble Salts in Ornamental Plant Production* by Johnson and Cabrera

Plant Tissue Analysis

Plant tissue analysis can provide you with valuable information about the current nutrient levels of your plants. It will let you know if your fertilizer applications are optimized, and it can help to identify any nutrient deficiencies or toxicities that may be present. A plant tissue analysis is a good way to check in on the fertility levels of your plants mid-season, especially if something just doesn't seem right and you want to accurately diagnose the problem. When collecting your sample, it is important to collect leaves from multiple representative plants of the same species. This will help to improve the accuracy of the analysis. You will need approximately one pint of leaf material to send to the lab. The Agricultural Analytical Services Lab at Penn State University offers plant tissue analysis services that include 10 elements: nitrogen, phosphorus, potassium, calcium, magnesium, manganese, iron, copper, boron, and zinc. They also provide a report with fertility recommendations for the specific crop that was tested. The cost is approximately \$24 per sample (plus shipping) depending on which type of tissue analysis you are looking for. Click here for more information on the Ag. Analytical Services Lab at Penn State University

NATIVE PLANT SPOTLIGHT

American Holly (*Ilex opaca*) is a native tree species that is important in our coastal maritime forests. In the landscape, it can be used to create evergreen hedges with high deer resistance. It is moderately salt and drought tolerant, with blooms from May through June that attract bees and butterflies. American holly's red berries persist through the winter months to feed birds and other wildlife. American holly branches can also be cut and harvested for holiday wreaths and other decorations.

Email: twaller@njaes.rutgers.edu Phone: 856-451-2800 Ext. 1.



To register use this URL or
QR code!
<https://go.rutgers.edu/2cl6jek9>



For more information contact: [Jennifer Matthews](mailto:jmatthews@njaes.rutgers.edu)
jmatthews@njaes.rutgers.edu
609-675-4221

**on-farm food
safety team**

Managing Food Safety Risks In Hydroponic Operations

August 17, 2023 FREE with registration!

Incorporate food safety into your hydroponics setup and worker training!

12:00-1:00P.M., 45 min webinar, 15 min Q&A. Connect with computer, the mobile app, or by calling in!

You will get the link to sign on or call in a few days before the event. Hydroponic growers use a variety of methods to grow, harvest, and pack produce. This webinar will focus on general best practices in the hydroponic growing environment to reduce the risk of human pathogen growth and spread.

This webinar will focus on risk assessment and management through:

1. Appropriate worker training
2. Evaluation of growing and harvest processes
3. Identification of food contact surfaces
4. Development of a cleaning and sanitation process

Landscape Pest Notes for Late June / Early July 2023

Steven K. Rettke

See link for pictures: plant-pest-advisory.rutgers.edu/landscape-pest-notes-for-late-june-2023

Azalea Lace Bugs (802-1029 GDD = 3rd generation): The third generation of this pest will be in full swing for much of NJ by the end of the month. Look for the presence of nymphs (spiny, black), adults (larger, lacy wings), fecal spots (brown, shiny spots) on the underside of leaves, and stippling (feeding damage from nymphs and adults) on the leaves. Remember that the yellow stippling damage persists on the leaves until they are dropped. Look for the presence of actively feeding lace bug nymphs or adults before treating plants.

When found, use horticultural oil (only if a spray can contact the back of the leaves), or acephate (Orthene) if the shrub is too dense to allow effective use of oil. Imidacloprid (Merit) applied to soils now may require 1-2 weeks before they begin to control this second generation or the beginning of the third generation (longer if soils are dry). Chlorantraniliprole is a reduced-risk insecticide that can be effective against lace bugs. Remember that stressed azaleas in full sun are more prone to lace bugs. Also, & more importantly, predators will be fewer in full-sun locations.

Azalea Lace Bugs & Cultural Controls: 1) When populations are low and plants are small, simply crush the bugs by pressing leaf parts together between the thumb and forefinger. 2) Dislodge nymphs (no wings) with a strong jet spray of water (syringing). Many may not be capable of crawling back to suitable leaves to feed upon and will soon die. 3) Azaleas are rarely excessively damaged by lace bugs when watered sufficiently and planted in shady areas of the landscape. Lace bugs thrive in sunny locations where predators are less numerous. 4) There are several beneficial insects such as spiders, lacewings, assassin bugs, and the minute pirate bug that can effectively reduce lace bug populations. Encourage and conserve these predators by avoiding unnecessary cover sprays with broad-spectrum insecticides. Syringing with a jet stream of water may allow time for beneficials to build up and keep damage to a minimum until significant predators arrive.

Oak Spider Mites (802-1265 GDD = 1st generation): The infestation and damage levels by most of our “warm season” spider mites typically become active during June and continue throughout the summer months. When monitoring oaks, look for the characteristic bronze discoloration on the upper leaf surfaces of mostly red oak group species (can also occasionally be found feeding on birch, chestnut, beech, elm, and hickory). Eggs are generally deposited on upper leaf surfaces, along the mid-vein. Multiple generations occur with peak populations in mid to late summer. After egg hatch occurs in the late spring (e.g., June), controls should be applied before large populations build up by mid-summer. Over-wintering eggs can be controlled with dormant horticultural oil. Elongated silk webbing may protect overwintering egg masses during very heavy infestations. Areas of the trunk and branches can have the appearance of rusty fiberglass. This silk webbing may be difficult to penetrate with horticultural oils. Some of the reduced-risk miticides labeled for spider mites include spiromesifen, bifentazate, & acequinocyl.

Spider Mites on Winged Euonymus: During the hot summer months, two-spotted spider mites can cause significant damage to winged euonymus/burning bush (*Euonymus alatus*). Infestations build up during June on the lower, inner leaves, causing a pale- white discoloration. With high populations, foliage throughout the plant turns a reddish-brown coloration by July/August. Note that these same symptoms can be similar to plants experiencing physiological stress (e.g., drought stress). When monitoring these plants, always check for spider mite presence by using a beating tray and a magnifier (10x-15x). Make sure live mites are present before making treatments! Within residential or commercial landscapes, damage thresholds are not reached until more than 10% of plant foliage shows symptoms. When beating tray tests contain more than 15 spider mites, then treatments may be recommended.

Early detection of two-spotted mites on the burning bush is critical to prevent discoloration and premature defoliation. Plants known to have had a history of this pest should be monitored at least every two weeks throughout the summer months. Proper timing of chemical controls should give excellent results. The many-labeled contact miticides will usually work well when coverage is complete. Horticultural oil can be effective if used cautiously (be careful of drought-stressed plants and hot/humid weather). Target the spray treatments to the undersides of the leaves.

Two-Spotted Spider Mite (Resistance Management): With the eventual onset of hot and dry weather the build-up of two-spotted spider mites will soon become apparent on burning bush, rose, forsythia, and many perennial plants. This mite species probably produces the greatest amount of silk webbing compared to any of the other landscape mites. However, it would be a mistake to wait until webbing becomes obvious before any action is taken. Usually by late May to early June the overwintering adults begin to move upward from the underlying duff onto their host plant (Remember that a dormant oil spray will not effectively impact the concealed adults if applied during the late winter or early spring periods). This species performs best in hot and dry environments. When daily high temperatures routinely exceed 85°F. then spruce spider mites shut down their activity while the 2-spotted spider mites greatly accelerate their development.

During the summer months, two-spotted spider mites will typically undergo 10 to 15 generations per year (i.e., the spruce spider mite usually has between 7 to 10 generations per year). Miticide resistance management is particularly important because of the large number of generations that two-spotted spider mites experience. If the same class of miticide with a similar mode of action is used continuously over time at the same location, then resistance to that material will eventually occur. There will always be a small percentage of a given population of mites that have a natural genetic resistance to a specific miticide. For example, they may be able to metabolize the active ingredient or produce enzymes that can rapidly destroy the active ingredient. Or perhaps some individuals can develop exoskeletons that can effectively block/repel the penetration of the active ingredient.

When the same materials with similar modes of action are used repeatedly at a particular site, then the percentage of the mite population having this unique resistance ability will increase with each generation. As a result, it is especially important to routinely throw “genetic curveballs” when attempting to manage two-spotted spider mite infestations. As a general rule of thumb, a good resistance management practice is to rotate to a new class of miticide having a different mode of action after every 2 to 3 applications. Many insecticides/miticides now have resistance management requirements stated on the label. These requirements need to be understood and followed.

Pine Spittlebugs: The native spittlebug attacks nearly all of our common pines, as well as Norway, white and red spruces, balsam fir, larch, eastern hemlock, and Douglas fir. Several species of spittlebugs can be found feeding on various hosts, including deciduous plants. Nymphs are covered with frothy honeydew called spittle. Most species have only a single generation & overwinter as eggs on bark cracks. They are mostly black in color with a white abdomen and can be found under spittle on twigs in May and June. Inspect for adults feeding in the same locations in July and August without the spittle covering. Adults are about ¼ inch long and are mostly tan in color with whitish bands on the wings. Both adults and nymphs suck sap from the phloem vessels of twigs.

Damage is usually not serious with light infestations and chemical controls are not warranted. When most terminal shoots contain more than one spittle mass, then residual insecticides may be warranted. This is especially true when some species release toxins that cause leaf stunting & twig decline. On pines, feeding puncture wounds can provide an opening to invasion by plant diseases.

On small pines, spittlebug populations may be manually removed. Adults are more active than nymphs and may require an insect net to effectively keep them from twigs. If necessary, spray spittle masses with a residual insecticide in May. There are a handful of pyrethroids that are labeled for use against spittlebugs.

Mimosa Webworms (880 GDD = 1ST Generation Larvae Hatch): This tent/web-forming caterpillar becomes active in much of NJ during the 2nd half of June. They feed on mimosa and honey locust (especially the thornless varieties of honey locusts such as 'Moraine'). The young caterpillars initially web leaflets together and then expand the web to include several branches as they grow. Older larvae consume foliage. The webbed foliage is unsightly, giving trees an ugly grey/brown appearance. The adults have the habit of laying their eggs on the old webs, so the second generation (due in early August) magnifies the damage, and large populations may defoliate the tree.

Since there may be many webs in one tree, hand pulling/pruning is usually ineffective. Monitor for the first signs of webbing of the second generation (1800-2100 GDD; when *Hydrangea paniculata* is blooming) and apply B.t. on small larvae. Spinosad (Conserve) & chlorantraniliprole may also be used with reduced impact on beneficials and non-target organisms. Residual pesticides, such as Orthene, Scimitar/Battle, Tempo 2, Mavrik, or Talstar may be used to control older larvae (be sure to drench foliage thoroughly). The four pyrethroids listed above may cause a spider mite flare-up following application, so a miticide may become necessary.

Soft Scale Species Controls (June & July): Compared to armored scales, the soft scales are relatively easy to suppress with either contact sprays or systemic treatments. Some of the common landscape soft-scale species include Calico, Fletcher, Wax, Terrapin, Cottony Maple, Lecanium, Cottony Taxus, Pine Tortoise, Striped Pine, and Spruce Bud. Although large soft-scale adult females are more difficult to control, crawlers & immature nymphs are highly vulnerable to insecticide sprays when good coverage is achieved during June & July.

There are numerous windows of control when applying sprays or systemic treatments against soft scales. (1) The best window for control when using spray treatments is toward the crawler emergence period. With only two major exceptions (Magnolia & Tuliptree scales), all other soft scale species produce crawlers during the months of June or July. Although scale crawlers are only 2 to 3 times the size of spider mites, they are usually clearly visible without magnification. Most crawlers have yellowish or reddish coloration. (2) Sprays can also be successfully targeted against the settled 1st instar nymph stage feeding on foliage or bark during the growing season. Achieving adequate coverage of foliage is the major challenge with large deciduous shade trees since the settled nymphs feed on the undersides of leaves along major veins. (3) In addition, dormant oil treatments can be applied in the late fall or early spring to the over-wintering 2nd instar nymphs on deciduous hosts. These nymphs have black or brown coloration and are considerably larger than the crawlers and 1st instar nymphs. They can be observed in clusters on the bark of twigs, branches, or trunks. (4) Finally, since soft scales are vascular feeders (phloem or xylem), root-absorbed systemic insecticides such as imidacloprid (Merit) or dinotefuran (Safari) have provided better than 90% control rates. Root systemic treatments can be applied as a drench or by soil injection at any time during the year as long as the ground is not frozen. Fall or spring applications are most typical. Having adequate soil moisture is key to ensuring success when applying root systemic treatments. (Note: None of the neonicotinoids will be labeled for use within NJ residential landscapes after October 2023).

White Prunicola Scales (707-1151 GDD): The crawlers hatch and become active in June in many areas of the state. This is the first of three generations. It attacks flowering cherries, and plants in Prunus, as well as lilac and privet. The white prunicola scale is also commonly found feeding at the base of Ilex plants within containers in nurseries. All stages of this armored scale feed in plant cells on twigs & branches. Heavy infestations can cause leaf yellowing & premature defoliation followed by branch dieback.

This scale species is particularly difficult to control because the crawler generations can continue to emerge over prolonged periods throughout the season. The second and third generations occur during the mid and late-summer periods. Soaps and oils (1%), targeting the branches and trunks will control crawlers when seen. The crawlers have a distinctive salmon color. Plan a dormant oil application for late winter next year. The systemic dinotefuran is highly effective against armored scales. (Note: None of the neonicotinoids will be labeled for use within NJ residential landscapes after October 2023).

Red-headed Flea Beetles (550-750 GDD = 1st generation): The first emergence of the adult red-headed flea beetle (*Systema frontalis*) is typically observed in southern NJ during early June. This insect has been a major pest at numerous NJ nurseries during the past 15+ years. Primarily a concern with container crops in nurseries, it has an extensive host range. The foliage damage to plants from this 0.2-0.25-inch adult beetle can become extreme.

Commonly observed nursery hosts of the adult flea beetle include Ithea, Salvia, Buddleia, Veronica, Coreopsis, Weigela, Hydrangea, Sedum, & Rudbeckia to name only a few. This flea beetle species typically has a prominent reddish head with the thorax & abdomen being a distinctive shiny black. The enlarged femur at the hind legs enables the flea beetle to rapidly “hop” when disturbed. In New Jersey, there are usually 2 or possibly 3 generations during the season and therefore feeding damage can occur from mid-June through much of September. Overwintering in the egg stage, grubs hatch during the 2nd half of May. First-generation adult emergence occurs about a month later (550-750 GDD) with the additional 2 generations producing the potential continued feeding damage that can span several months.

Adult red-headed flea beetle feeding symptoms can be variable depending on crop leaf types. Feeding on thinner leaves tends to produce skeletonized symptoms or may even result in a shredded appearance. With thick, fleshy leaf types (e.g., Sedum), the feeding symptoms can mimic the light-colored linear patterns seen from leaf miners.

Although chemical controls against the feeding adult can be effective, nursery growers attempting to protect crops often require repeat treatment applications. The use of neonicotinoids such as imidacloprid (Marathon) & dinotefuran (Safari) can provide residual preventative controls, but experience has shown it may also be necessary to apply knockdown rescue treatments such as pyrethroids (i.e., cyfluthrin (Decathlon) & lambda-cyhalothrin (Scimitar)) or carbaryl (Sevin). Some immature larvae (5-10 mm) may be found in the container media feeding on roots, but typically cause insignificant damage. Controls targeting adults are most effective, but controlling larvae can also have some significant impact.

Mid-Season Leaf Drop: When the leaves of large shade trees drop during mid-season, it typically causes alarm to concerned homeowners/clients. With the ground littered with spent foliage, the conclusion often is that “their favorite shade tree is dying!” Linden, birch, and sycamore trees are often most susceptible to mid-season leaf drops. In a majority of cases, this is a normal physiological growth habit for these species. The trees commonly drop foliage in mid-season to reduce leaf surface area and subsequent water loss. This leaf-shedding ability is especially important during typical summer droughts or when water availability in soils is limited.

To add to the potential concern & confusion regarding the health of the tree, after water does eventually become available to the roots through rainfall or irrigation the tree has an increased leaf drop. The tree was preparing to excise some of the leaves when the extra weight of the water accelerated the process. The tree species mentioned above will often grow an exorbitant number of leaves during the spring months when moisture levels are plentiful. Therefore, neither tree health nor tree growth is usually affected unless the drought extends over a long period.

Reference: Managing Insects & Mites on Woody Plants: an IPM Approach (3rd Edition); John A. Davidson, Ph.D and Michael J. Raupp, Ph.D; Dept. of Entomology, Univ. of Maryland.

Calendar of Events

- Indicates a newly added event

July 4- 8

Cumberland County Fair; 3000 Carmel Rd., Millville, NJ 08332; Fun filled, family-friendly event that has been a summer staple for generations and attended by thousands from throughout the state. A demolition derby, amusement rides, all the tastes of a county fair, roaming entertainment, merchandise vendors and local 4-H exhibits, animals and activities. Interested in being a vendor and sponsor, go to cumberlandcofair.com

July 15-18

Cultivate '23; Greater Convention Center; Columbus, Ohio; Learn best practices and foster business connections so you and your business can perform better, grow faster than ever, and are prepared for the future. Visit www.cultivateevent.org for more information

July 24-28

PPA 2023 National Symposium; Shertaton Fallsview, 5875 Falls Ave, Niagara Falls, Ontario; The event features an array of exciting tours, educational sessions, and networking opportunities. Visit <https://perennialplant.org> for more information

• July 24-29

49th Annual NOFA Summer Conference; The conference begins online: Monday, July 24- Thursday July 27, with evening speakers and workshops. Friday July 28 and Saturday July 29, are both in person and online at Worcester State University, Worcester, MA. Email conference@nofamass.org for more information

July 24- August 18

Grape and Wine Science Certificate Program; NJ Institute for Food Nutrition & Health, Room 205, 61 Dudley Rd., New Brunswick, NJ 08901; This program will provide foundational knowledge in three major areas of grape and wine science – grape growing, wine making, and business operations – following the path of grapes from the field to the winery to the glass. The program will feature 4 weeks of classroom instruction, complemented by hands-on workshops; Find more information and register online at <https://cpe.rutgers.edu/food-science-safety/grape-and-wine-science-certificate>

July 25

Rutgers Turfgrass Research 2023 Field Day; Golf & Fine Turf, Hort Farm 2, North Brunswick, NJ; 8AM-8:30AM CORE session, 1 Core Credit; 10AM-2PM Spanish Basic Training, Earn 3 credits followed by Exam. Pre-registration required. 2PM- 5PM English Basic Training, Earn 3 credits followed by Exam. Pre-registration required. Register and find more information at www.njturfgrass.org

July 26

Rutgers Turfgrass Research 2023 Field Day; Lawn, Landscape, and Sports Fields, and SFMANJ Trade Show and Equipment Demos- Rotary Spreader Calibration, Back Back Sprayer Calibration, Ride-on Spreader Sprayer Demonstration on Turf; Find more info online at www.njturfgrass.org

August 8-10

Ag Progress Days; Russell E. Larson Agricultural Research Center, 2710 W. Pine Grove Road, Pennsylvania Furnace, PA 16865; Free admission and free parking; PA's largest outdoor agricultural exposition; Over 400 exhibitors; The show is hosted by Penn State's College of Agricultural Sciences and showcases educational programs, current research, and the latest innovations in agricultural equipment and technology; Visit agsci.psu.edu/apd for more information.

August 16

Summer Plant Symposium; Duke Farms, 1112 Dukes Pkwy W., Hillsborough Township, NJ; Hosted by the New Jersey Nursery and Landscape Association (NJNLA); Pesticide Credits will be available; Find more information at www.njnla.org

- **August 23-25**

Farwest Show; The biggest green industry trade show in the West Oregon Convention Center Portland, OR. There is a Wholesale Growers Tour and a Garden Center Retail Tour available on Aug.22. 777 NE MLK Jr. Blvd., Portland, OR. More information at farwestshow.com

September 25-27

Florida Fruit & Vegetable Association Annual Convention Ritz Carlton Hotel Naples, FL; Find more info at www.ffva.com/page/convention

- **September 26-29**

IPPS ER Annual Conference; Get ready for an extraordinary experience at the IPPS Eastern Region's Annual Conference! Brace yourself for four exhilarating days of reconnecting, recharging, and immersing yourself in the wisdom of industry legends. Sheraton Hamilton, Ontario, Canada. Visit <https://ena.org> for more information.

September 27

From the Ground Up: Produce Safety Planning for Beginning Growers; Rutgers Cooperative Extension of Mercer County, 1440 Parkside Ave., Ewing, NJ 08638; 10AM-2PM; \$30.00 each; Lunch provided; Gain basic understanding of Food Safety Culture and why it is important, five things growers can do right away on their farm to reduce risk, cleaning and sanitizing, and key points of FSMA: PSR the growers need to know; Find more info and register at <https://go.rutgers.edu/kcx1n6bj>

October 18

From the Ground Up: Online Food Safety Plan Writing Workshop; Online Food Safety Plan Writing Workshop; Work through the components of a food safety plan with our help from your home office! By the end of this class you will have a draft plan and a more robust food safety program for your farm; \$15.00 per person; Any questions contact Jenn Matthews at jmatthews@njaes.rutgers.edu; Register online at <https://go.rutgers.edu/kcx1n6bj>

October 18-28

IPPS International Tour 2023; Tour starts in Washington DC, ends in Durham NC; Join IPPS Southern Region of North America for exceptional food, drink, and friendship from our nation's capitol to the mountains of NC! Experience innovative nursery tours, unique cultural experiences, fabulous gardens, and Southern Region" hospitality. Space is limited, so sign up early! Visit <https://ipps.org> to register and find more information.

November 8-9

Northeast Greenhouse Conference and Expo; Doubletree by Hilton, Manchester, NH; Educational sessions focusing on advanced biocontrol, disease management, business and marketing, greenhouse vegetables, perennial production, and some sessions in Spanish will be offered. Come visit vendors at the trade show with three dedicated hours in each day of the program. Learn more at www.negreenhouse.org

November 27-December 1

Irrigation Show & Education Week Henry B. Gonzalez Convention Center San Antonio, Texas; Find more info at www.irrigation.org/

Regularly Scheduled Meetings

Pesticide Credit Exams

Virtual testing available.

Sign-up, exam schedule,
and find more information at
<https://pacer.rutgers.edu/>

Cumberland County Agriculture Development Board

Meetings are held on the 3rd
Tuesday of each month.
Meetings start at 7 p.m.

Virtual Meetings Information
can be found on the
Public Meeting Calendar on
co.cumberland.nj.us

For more information call the
Dept. of Planning, Tourism,
and Community Affairs
at 856-453-2175

Chair: Al Caggiano, Jr

Commissioner Liaisons:
Victoria Groetsche-Lods

Cumberland County Board of Agriculture

Meetings are held on the
3rd Thursday of September - May
at 7 p.m. in-person at RCE

Next meeting
September 21, 2023

Virtual Meeting Information
<https://rutgers.zoom.us/my/smangia>

Meeting ID: 529 557 9817

Passcode: Sal2020

or call in at 1 (646) 558 - 8656

President: Keith MacIndoe

Commissioner Liaisons:

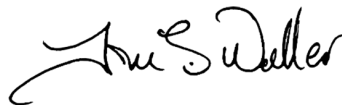
1. Victoria Groetsche-Lods
2. Joseph Sileo

Alt. John Capizola Jr.

Sincerely,



Wesley L. Kline, Ph.D.
Cooperative Extension Agent
Vegetable Production and Food Safety
WKline@njaes.rutgers.edu



Timothy J. Waller, Ph. D.
Cooperative Extension Agent
Nursery Production
TWaller@njaes.rutgers.edu



Salvatore Mangiafico, Ph. D.
Extension Department Head &
Environmental and Resource Mgt. Agent
Mangiafico@njaes.rutgers.edu

Pesticide User Responsibility: Use pesticides safely and follow instructions on labels. The user is responsible for the proper use of pesticides, residues on crops, storage and disposal, as well as damages caused by drift
Use of Trade Names: Trade names are used in this publication with the understanding that no discrimination is intended and no endorsement is implied. In some instances the compound may be sold under different trade names, which may vary as to label.

RUTGERS

New Jersey Agricultural
Experiment Station

Have you visited the Cumberland County website for the Present and /or past issues of "Cultivating Cumberland"?

It's a great resource for information and dates...

<https://Cumberland.njaes.rutgers.edu/>

Public Notification and Non-discrimination Statement

Rutgers Cooperative Extension is an equal opportunity program provider and employer. Contact your local Extension Office for information regarding special needs or accommodations. Contact the State Extension Director's Office if you have concerns related to discrimination, 848-932-3584.

Cooperative Extension of Cumberland County



Since 1915

NONPROFIT ORGANIZATION
U.S. POSTAGE PAID
VINELAND, NJ
PERMIT NO. 186

Cooperative Extension of Cumberland County
Extension Education Center
291 Morton Avenue
Millville, NJ 08332-9791

RUTGERS
New Jersey Agricultural
Experiment Station

RUTGERS

New Jersey Agricultural
Experiment Station

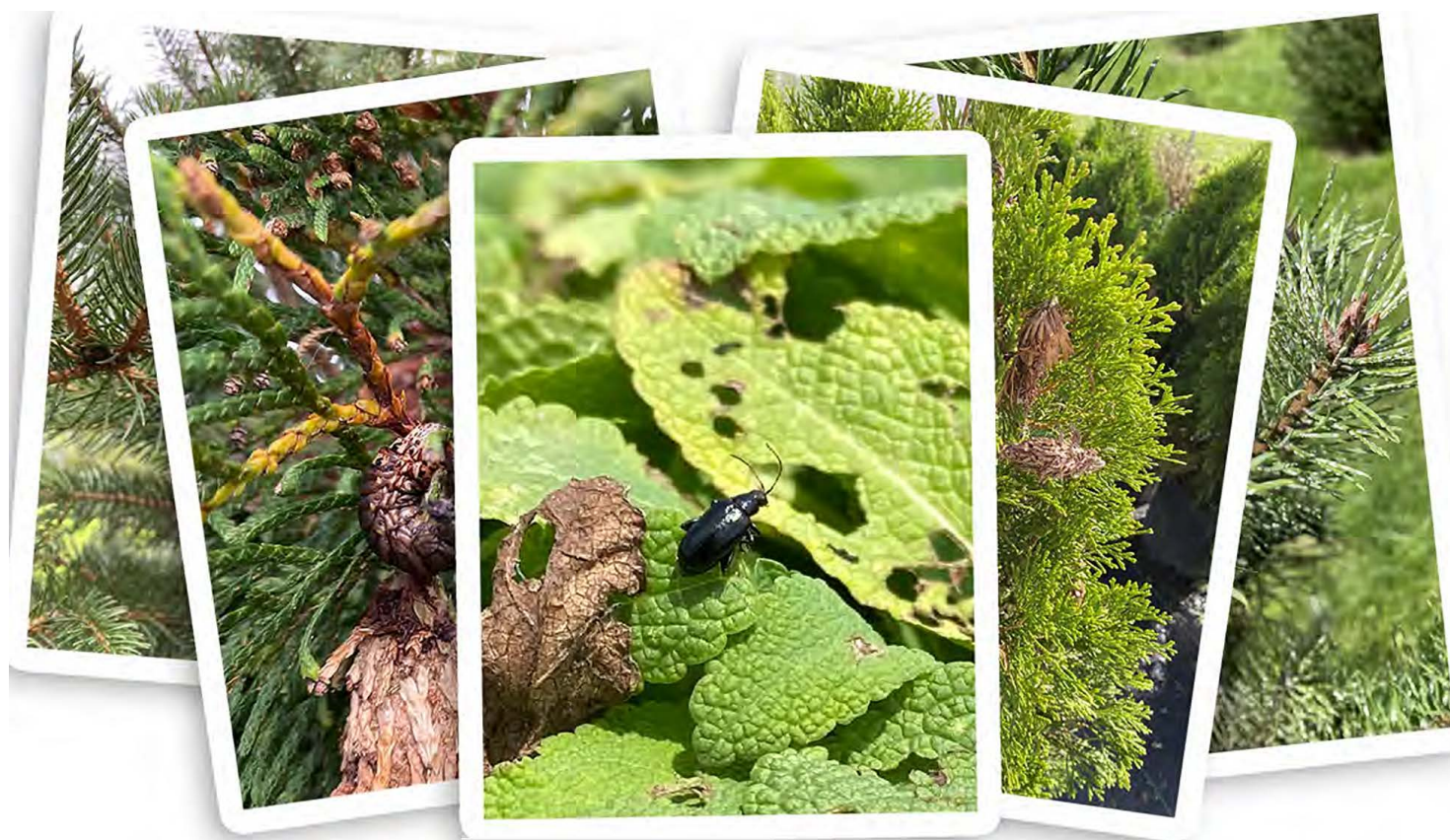
Online version >



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

Scan here to

Report pest GDD deviations

Comment on observations

Share pest / plant photos



WE **R** HERE WHEN YOU NEED US

Cooperating Agencies: Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and County 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.

Pesticide Container Recycling

Helena Chemical
440 N. Main St.
Woodstown, New Jersey

Helena Chemical
66 Route 206
Hammonton, New Jersey

Rutgers Fruit and Ornamental
Research Extension Center
283 Route 539
Cream Ridge, NJ 08514-9634

July 21
August 18
September 22
October 20

July 14
August 11
Sept. 15
Oct. 13

July 28
August 25
September 29
October 27

Plastic Pesticide Container Processing Steps and Size Limits

- All pesticide containers must be either triple rinsed or pressure rinsed, drained and dry inside;
- All pesticide containers must be free of residue (other than stains);
- The booklet must be removed (it is not necessary to remove the paper labels glued to the container);
- Foil seal must be removed;
- Only non-refillable pesticide containers will be accepted – you must drill a ¼-inch hole in the bottom of the container or with a utility knife make a 6-inch slit in the bottom of the container so the container will not hold liquids;
- Only pesticide containers embossed with HDPE or the recycling #2 will be accepted;
- Pesticide containers up to 55-gallons in capacity will be accepted. 5-gallon pales must be cut in half; 30-gallon containers into at least 4 pieces; and 55-gallon containers into at least 8 pieces. This can be accomplished using a sawzall, chainsaw, circular saw, or reciprocating saw. It is not necessary to cut up containers less than 5-gallons; and Pesticide containers must have originally held an EPA registered pesticide.

Items that Will Not Be Accepted and Will Be Returned to the Participant

- Pesticide containers with dried formulation on the container, pour spout or the spout threads;
- Pesticide containers with any liquid residue;
- Pesticide containers where the insides are caked with dried residue;
- Mini-bulk, saddle tanks and nurse tanks, which can be made of fiberglass;
- Pesticide containers with lids; or
- Containers that held any type of petroleum oil product or antifreeze.

Non-Waxy Cardboard

Helena Chemical will also be accepting non-waxy cardboard 1 p.m. to 3 p.m and during the scheduled pesticide container collection times. The clean non-waxy cardboard must be broken down and flattened. Cardboard delivered to the Atlantic County site must be tied. Clean Non-waxy cardboard will also be accepted year-round at the Cumberland County Solid Waste Complex's Convenience Center.

1 CORE credit given if you take your NJ Pesticide License with you to drop off.

More information can be found at www.nj.gov/agriculture/divisions/anr/nrc/processingsteps

Nursery and Landscape Pest Scouting with GDD50 – JULY 2023

Tim Waller – twaller@njaes.Rutgers.edu

(pg. 1)

Projected GDD50 accumulation - July 2023

Region	Location	30-Jun	7-Jul	14-Jul	21-Jul	28-Jul	4-Aug
Southern	Upper Deerfield (NJ50)	1167	1352	1544	1738	1933	2127

Group	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Ref.	Developmental / Target Stage / Notes	Favored Host Plants
Aphids / Thrips	Tuliptree aphid	<i>Illinoia liriodendri</i>	1151	1514	1	Nymphs / adults	Tulip
Aphids / Thrips	Willow twig aphids	<i>Lachnus spp.</i>	1644	2271	5	Typical treatment window	Willow
Aphids / Thrips	Tuliptree aphid	<i>Illinoia liriodendri</i>	1917	2033	1	Nymphs	Tulip
Aphids / Thrips	White pine aphid	<i>Cinara strobi</i>	1991	2271	1	Adults	Conifer
Beetle							
Beetle	Elm leaf beetle	<i>Xanthogaleruca luteola</i>	600	1300	7	Larvae (2nd generation)	Elm
Beetle	N. masked chafer beetle	<i>Cyclocephala borealis</i>	898	905	1	1st adults	Turf
Beetle	Japanese beetle	<i>Popillia japonica</i>	950	2150	5	Adults emerge and feed	Many
Beetle	Redheaded flea beetle	<i>Systema frontalis</i>	1028	1570	8	2nd generation of un-hatched eggs	Many
Beetle	Oriental Beetle	<i>Anomala orientalis</i>	1147	-	6	Adult emergence	Many
Beetle	N. masked chafer beetle	<i>Cyclocephala borealis</i>	1377	1579	1	Adults (90%)	Turf
Beetle	Redheaded flea beetle	<i>Systema frontalis</i>	1570	1860	8	2nd generation egg hatch	Many
Beetle	Japanese beetle	<i>Popillia japonica</i>	1590	1925	1	Adults (90%)	Many
Borer							
Borer - Caterpillar	Nantucket tip moth	<i>Rhyacionia frustrana</i>	1514	1917	1	Adults 2nd generation	Conifer
Borer - Flathead / Metallic beetle	Emerald ash borer	<i>Agrilus planipennis</i>	1000	1200	4	Peak adult activity	Ash
Borer - Roundhead / Longhorn	Roundheaded appletree borer	<i>Saperda candida</i>	802	1129	1	Adults	Many
Borer - Roundhead / Longhorn	Roundheaded apple tree borer	<i>Saperda candida</i>	1514	1798	5	Typical treatment window	Many
Borer - Roundhead / Longhorn	Sugar maple borer	<i>Glycobius speciosus</i>	2032	2375	5	Typical treatment window	Maple
Caterpillar							
Caterpillar	Mimosa webworm	<i>Homadula anisocentra</i>	880	-	1	Larvae (1st generation)	Mimosa, Honeylocust
Caterpillar	Walnut Caterpillar	<i>Datana integerrima</i>	1029	1514	2	Larvae Treatment	Juglandaceae
Caterpillar	Birch Skeletonizer	<i>Bucculatrix canadensisella</i>	1266	1580	5	Typical treatment window	Birch
Caterpillar	Fall webworm	<i>Hyphantria cunea</i>	1266	1795	2	Caterpillars present - larvae treatment	Many
Caterpillar	Juniper webworm	<i>Dichomeris marginella</i>	1645	1917	1	Larvae Treatment	Conifer
Caterpillar	Mimosa webworm	<i>Homadula anisocentra</i>	1800	2100	1	Larvae (2nd generation)	Mimosa, Honeylocust
Caterpillar	Zimmerman pine moth	<i>Diorcytria zimmermani</i>	1917	2154	5	Treatment window (adult flight-1700 GDD)	Conifer
caterpillar	Orangestriped oakworm	<i>Anisota senatoria</i>	1917	-	6	Egg hatch - early instars	Mainly Oaks
Caterpillar	Bluegrass sod webworm	<i>Parapediasia teterrella</i>	1250	1920	1	Larvae	Turf
Caterpillar	Oak skeletonizer	<i>Bucculatrix ainliella</i>	1798	2155	1	Larvae	Oaks
SLF							
Cicadellidae	Spotted Lantern Fly	<i>Lycorma delicatula</i>	1000	-	9	Adults	Many
"Bugs"							
Cicadellidae	Leafhoppers	<i>Species within Cicadellidae</i>	1266	1544	1	Nymphs / adults	Many
Hemiptera (true bugs)	Hairy chinch bug	<i>Blissus leucopterus</i>	765	870	1	1st generation (50% - 2nd instar)	Turf
Hemiptera (true bugs)	Hairy chinch bug	<i>Blissus leucopterus</i>	1903	2160	1	Second generation- 50%- 2nd instars	Turf
Lacebug	Azalea Lacebug	<i>Stephanitis pyrioides</i>	802	1029	1	Eggs / Nymphs 3rd Generation	Rhododendron
Lacebug	Lacebugs (on hawthorn)	<i>Corythucha cydoniae</i>	1266	1544	1	Nymphs / adults	Many
Leafminer / Midge / Fly							
Leafminer / Midge / Fly	Locust leafminer	<i>Odontota dorsalis</i>	1029	1388	1	Adults	Locust
Leafminer / Midge / Fly	Boxwood leafminer	<i>Monoarthropalpus flavus</i>	1200	1400	5	Larvae Treatment	Boxwood
Leafminer / Midge / Fly	Lilac leafminer	<i>Caloptilia syringella</i>	1388	1644	5	Typical treatment window	Lilac
Leafminer / Midge / Fly	Arborvitae leafminer	<i>Argyresthia thuella</i>	1800	2200	1	Larvae Treatment (3rd generation)	Conifer
Mites							
Mites	Oak spider mites	<i>Oligonychus bicolor</i>	802	1265	1	All Stages	Oaks
Mites	Honeylocust mite	<i>Eotetranychus multidigituli</i>	912	1514	2	All Stages	Honeylocust
Mites	Honeylocust spider mite	<i>Platytranychus multidigituli</i>	912	1514	5	Typical treatment window	Honeylocust
Mites	Privet rust mite	<i>Aculus ligustri</i>	1266	1515	5	Second typical treatment window	Privet
Mites	Two spotted spider mite	<i>Tetranychus urticae</i>	1300	2000	1	Nymphs / adults	Many
Mites	Rust-mites	<i>Nalepella and Setoptus spp.</i>	1644	2030	1	Nymphs / adults	Conifer

Nursery and Landscape Pest Scouting with GDD50 – JULY 2023

Tim Waller – twaller@njaes.Rutgers.edu

(pg. 2)

Projected GDD50 accumulation - July 2023							
Region	Location	30-Jun	7-Jul	14-Jul	21-Jul	28-Jul	4-Aug
Southern	Upper Deerfield (NJ50)	1167	1352	1544	1738	1933	2127

Group	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Ref.	Developmental / Target Stage / Notes	Favored Host Plants
Scale / Sucking							
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	600	1000	7	Nymphs active - Douglas fir (control target)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Sprucebud scale	<i>Physokermes hemicryphus</i>	700	1150	4	Crawlers (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	White prunicola scale	<i>Pseudaulacaspis prunicola</i>	707	1151	1	Crawlers (1st generation)	Many
Scale / Adelgid / Whitefly / Psyllid	Juniper scale	<i>Carulaspis juniperi</i>	707	1260	1	Crawlers (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Calico scale	<i>Eulecanium cerasorum</i>	714	-	6	Crawlers (1st generation)	Many
Scale / Adelgid / Whitefly / Psyllid	Striped pine scale	<i>Toumeyella pini</i>	750	800	4	Egg hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Oak lecanium scale	<i>Parthenolecanium quercifex</i>	789	-	6	Crawlers (1st generation)	Oak, hickory, birch, many
Scale / Adelgid / Whitefly / Psyllid	Cottony maple leaf scale	<i>Pulvinaria acericola</i>	802	1265	5	Crawlers (1st generation)	Acer
Scale / Adelgid / Whitefly / Psyllid	Cottony maple scale	<i>Pulvinaria innumerabilis</i>	802	1265	1	Crawlers (1st generation) - control target	Many, shadetrees
Scale / Adelgid / Whitefly / Psyllid	Golden oak scale	<i>Asterolecanium variolosum</i>	802	1266	5	Egg hatch	Oaks
Scale / Adelgid / Whitefly / Psyllid	Japanese maple scale	<i>Lopholeucaspis japonica</i>	829	-	6	Crawlers (1st generation)	Maples
Scale / Adelgid / Whitefly / Psyllid	European elm scale	<i>Gossyparia spuria</i>	831	1388	6,2	Crawlers (1st generation)	Elm
Scale / Adelgid / Whitefly / Psyllid	European fruit lecanium scale	<i>Parthenolecanium corni</i>	932	1645	6,1	Crawlers - control target	Shade trees
Scale / Adelgid / Whitefly / Psyllid	Pine tortoise scale	<i>Toumeyella parvicornis</i>	1000	1200	4	Egg hatch ends, last of crawlers	Conifer
Scale / Adelgid / Whitefly / Psyllid	Fletcher Scale (Yew)	<i>Parthenolecanium fletcheri</i>	1029	1388	1	Crawlers (1st generation) - control target	Yew, many conifers
Scale / Adelgid / Whitefly / Psyllid	Indian wax scale	<i>Ceroplastes ceriferus</i>	1145	-	6	Crawlers (1st generation)	Many
Scale / Adelgid / Whitefly / Psyllid	Euonymus Scale	<i>Unaspis euonymil</i>	1150	1388	5	2nd generation targeted treatments	Euonymus
Scale / Adelgid / Whitefly / Psyllid	Azalea whitefly	<i>Pealius azaleae</i>	1250	1500	5	Adults/nymphs (2nd generation)	Rhododendron
Scale / Adelgid / Whitefly / Psyllid	Pine Needle Scale	<i>Chionaspis pinifoliae</i>	1290	1917	3	Crawlers emerge (2nd generation) - control target	Conifer
Scale / Adelgid / Whitefly / Psyllid	Hemlock scale	<i>Abgrallaspis ithacae</i>	1388	2154	5	Typical treatment window	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	1500	1775	1	Adults/nymphs (Douglas Fir)	Conifer
Scale / Adelgid / Whitefly / Psyllid	White prunicola scale	<i>Pseudaulacaspis prunicola</i>	1637	-	6	Egg hatch / crawler (2nd generation)	Many
Scale / Adelgid / Whitefly / Psyllid	Euonymus Scale	<i>Unaspis euonymil</i>	1700	-	1	Continued 2nd generation treatments	Euonymus
Scale / Adelgid / Whitefly / Psyllid	Cryptomeria scale	<i>Aspidiotus cryptomeriae</i>	1750	2130	1, 4	Crawlers emerge (2nd generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Obscure scale	<i>Melanaspis obscura</i>	1774	-	6	Egg hatch / crawler	Many
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	1850	1950	1	Galls open (Spruce)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Gloomy scale	<i>Melanaspis tenebricosa</i>	2000	3000	6*	Crawlers emerge. (1 generation) * Approximate range, more data needed.	Maple, many
Scale / Adelgid / Whitefly / Psyllid	Azalea whitefly	<i>Pealius azaleae</i>	2032	2150	5	Adults/nymphs (3rd generation)	Rhododendron
Scale / Adelgid / Whitefly / Psyllid	Maskell scale	<i>lepidosaphes pallia</i>	2035	-	6	Egg hatch / crawler (2nd generation)	Conifer
Weevil							
Weevil	Bluegrass billbug	<i>Sphenophorus parvulus</i>	884	1003	1	Larvae 20%	Turf
Weevil	Bluegrass billbug	<i>Sphenophorus parvulus</i>	1094	1217	1	Larvae (40%)	Turf
Weevil	Northern pine weevil	<i>Pissodes nemorensis</i>	1200	1400	4	2nd generation adults active	Conifer
Weevil	Pales weevil	<i>Hyllobius pales</i>	1200	1400	4	Adults 2nd generation	Conifer
Weevil	Pine root collar weevil	<i>Hyllobius radialis</i>	1200	1400	4	2nd generation adults active	Conifer
Weevil	White pine weevil	<i>Pissodes strobi</i>	1200	1400	4	2nd generation adults active	Conifer
Weevil	Two-banded Japanese weevil	<i>Pseudocnephinus bifasciatus</i>	1644	2271	1	Adults	Many