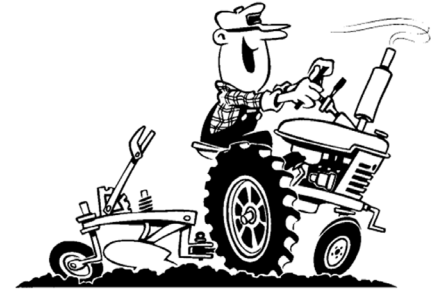


Cultivating Cumberland

June - 2022

Vol. 27, Issue 6



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Attachments:

- Redheaded Flea Beetle - Life Stages Predictions
- Boxwood Blight- It is time to begin protective fungicide applications
- Important June Pests
- Join PPA!

In-Person CORE Meetings in Burlington County

Rutgers Cooperative Extension of Burlington County will host two 'CORE Extravaganza' meetings to provide an in-person opportunity for licensed pesticide applicators to earn CORE recertification credits.

Meeting #1: Thursday, June 16, 2022 from 5:30 to 7:00 p.m.

Pesticide credits issued – CORE (3)

Location – Burlington County Amphitheater, 5 Pioneer Boulevard, Westampton, NJ 08060

Meeting #2: Thursday, July 14, 2022 from 5:30 to 7:00 p.m.

Pesticide credits issued – CORE (3) plus categories 1A (1), 10 (1), and PP2 (1)

Location – Burlington County Amphitheater, 5 Pioneer Boulevard, Westampton, NJ 08060

REMINDER: Pesticide applicators must accumulate 8 CORE credits and 16 credits for each licensed category per 5-year cycle to maintain their license.

REMINDER: If your license expires after October 31, 2022 you can earn only 25% of your credits online. The remaining credits must be earned by attending in-person meetings.

Pre-registration is appreciated. Email Sandra Trossbach strossbach@co.burlington.nj.us or call 609-265-5051.

Meetings are outdoors. There is no shade so come prepared with water, sunglasses, and a wide-brimmed hat. There is seating on the wide grass terraces surrounding the stage (see photo), but you may be more comfortable if you bring a chair. The meetings will be cancelled if there is inclement weather. Check our website or Facebook for meeting status.

The NJ Plastic Bag Ban and Your Retail Farm Market

Meredith Melendez, April 29, 2022

The NJ plastic bag ban will impact retail farm markets starting May 4th. If your farm market sells items to the general public you can use our online decision tool to find out what parts of this ban impact your sales. Note that enforcement of this ban will vary based on your retail sales location. Counties and municipalities may use their health or other departments for enforcement along with the DEP. Without specific guidance on how to enforce the ban in farm retail settings there will likely be variations based on location.

We've created a printable sign that you may want to post at your market to inform your customers and cashiers about how this bag ban impacts farm markets. Click on the poster image for a printable version. Some key pieces of information about the rule that may impact your market are discussed in a short video discussion (click on the image of the PowerPoint slide to access) and also detailed below:

Paper bags are banned only for stores that are identified as a "grocery store". If you are not considered a grocery store (see definition below) you may use paper bags.

Grocery stores are defined as "self-service retail establishment that occupies at least 2,500 square feet and that sells household foodstuffs for offsite consumption, including fresh produce, meat, poultry, deli products, dry foods, baked foods, prepared foods." We anticipate that enforcement will vary based on local jurisdiction with this definition. If you are a retail farm market that is over 2,500 square feet, including your outdoor sales areas, it is suggested that you communicate with your municipality to determine if you can use paper bags or not.

Plastic bags are banned for all items that are not considered exempt. Any retail establishment can use plastic bags for the following exempted items:

- Loose items including: fruits, vegetables, nuts, coffee, grains, baked goods, candy, greeting cards, flowers, small hardware items
- Uncooked meat, fish, or poultry
- Food sliced or prepared to order, including soup and hot foods

The state does not define what types of plastic bags can be used for exempted items, we are waiting to see how the law is enforced in this regard.

You cannot sell single use bags at your store, except for pre-packaged bags such as bulk trash bags, pet waste bags, zip-lock bags, etc.

The regulation does not discuss **biodegradable single-use bags** that can be decomposed by bacteria and other living organisms in a short period of time. The plastic bag ban is specific to single-use bags made from a synthetic materials. Many biodegradable bags are made from corn-based materials and have improved in their strength since they were first released a number of years ago. Should you plan on purchasing biodegradable bags make sure you can prove what materials they are made of in case of customer or regulatory questioning. The New Jersey Office of Innovation has a listing of companies that sell bags that are allowable under the ban.

Continued on next page

Reusable bags ideally should be made of materials that can be easily cleaned and must have handles stitched onto them. Fabrics that can be washed and dried in a machine are preferred since the heat cycle in the dryer will kill any potential human pathogens that find their way onto the bags surface. If purchasing reusable bags to give to your customers be sure to look at the cleaning instructions and communicate proper handling of these bags to your customers. You are not required to provide reusable bags to your customers.

As we better understand this regulation, we will share that information with you.

NJ Bag Ban and Farm Markets

Compliance with P.L. 2020,c.117

As of May 4, 2022



Remember to
bring your
reusable bags!



Paper bags can be
used at non-grocery
store retail locations
of any size.



Single-use plastic bags
are banned for all items
EXCEPT:

- Loose items,
including whole
uncut produce
- Flowers
- Baked goods
- Hot foods



Rutgers NJAES Beginner Farmer Program Registration Now Open

Middlesex County, NJ, 2022 — Registration is now open for the second annual online course of RU Ready to Farm, the beginner farmer training program from the Rutgers New Jersey Agricultural Experiment Station (NJAES) Cooperative Extension. This online course is the first step for new and beginner farmers who want to learn what it takes to succeed in New Jersey agriculture. The program is led by Middlesex County Agricultural Agent Bill Hlubik and the RU Ready to Farm team and will provide students with a wealth of information on how to become a part of the next generation of New Jersey farmers. This course features speakers from Rutgers NJAES, agricultural support agencies, and the farm community and will provide insight and guidance to new and beginner farmers from around the state.

This program:

- Helps to prepare new and beginner farmers to succeed in New Jersey agriculture.
- Examines issues that many new farmers face, such as finding land, obtaining financing, and deciding what to produce.
- Provides information on upcoming beginner farmer grant and funding opportunities from the USDA and other farm support agencies.
- Explores how to develop a farm business plan, and what new farmers should include in one.
- Features successful farmers discussing what has worked for them.
- Includes tours of active farms throughout the Summer and Fall.

The price for this course is \$400. Register now at: <https://go.rutgers.edu/4biehbmc>

Now is an exciting time for beginner farmers in New Jersey, innovative new technologies and products have created new opportunities and markets for those that are just getting started. RU Ready to Farm connects beginners with a network of successful farmers and agricultural support professionals from around the State and region. “What makes our program unique is the breadth of information that our team provides to program participants. Combining online instruction with guided farm tours allows students to learn about the industry while gaining first-hand insight into how farmers operate,” says Program Director Bill Hlubik. RU Ready to Farm will help you develop your ideas into an actionable plan, whether you dream of farming 20 acres or 2.

The RU Ready to Farm beginner farmer training program is supported by Beginning Farmer and Rancher Development Program grant no. 2020-70017-32784 from the USDA National Institute of Food and Agriculture.

For more information about RU Ready to Farm, visit rubeginnerfarmer.rutgers.edu, or email beginnerfarmer@njaes.rutgers.edu. Follow on Facebook and Instagram @RURedytoFarm.

Rutgers New Jersey Agricultural Experiment Station (NJAES) Cooperative Extension helps the diverse population of New Jersey adapt to a rapidly changing society and improve their lives and communities through an educational process that uses science-based knowledge. Through science-based educational programs, Rutgers Cooperative Extension truly enhances the quality of life for residents of New Jersey and brings the wealth of knowledge of the state university to local communities.

Highly Pathogenic Avian Influenza Confirmed in Monmouth County Poultry Flock

Jeff Wolfe, NJDA

TRENTON, N.J. – The United States Department of Agriculture’s (USDA) Animal and Plant Health Inspection Service (APHIS) and the New Jersey Department of Agriculture (NJDA) confirmed the state’s first Highly Pathogenic Avian Influenza case in a Monmouth County non-commercial backyard poultry flock. The disease response is being coordinated between state and federal partners.

The test samples were collected from a duck and chicken flock in Monmouth County and were tested at the New Jersey Animal Health Diagnostic Laboratory. The duck flock had experienced high mortality, and some displayed neurologic signs before succumbing to the disease. Congruent testing was completed at the National Veterinary Services Laboratory, which confirmed the detection of the disease on May 17, 2022.

State and federal personnel are following the appropriate response plan, including implementing site quarantine, proper biosecurity measures, and depopulation of poultry on the premises. Additionally, outreach to poultry owners, live bird markets, and the general public at www.nj.gov/agriculture has been completed to provide recommendations on poultry management and measures to ensure the maintenance of a healthy flock.

HPAI is highly contagious and often fatal in domestic poultry species. According to the U.S. Centers for Disease Control and Prevention, the recent HPAI detections in birds do not present an immediate public health concern. As a reminder, poultry and eggs’ proper handling and cooking to an internal temperature of 165 °F kill bacteria and viruses.

Signs of HPAI in poultry can include:

- Sudden death
- Decrease in feed or water consumption
- Respiratory signs such as coughing, sneezing, nasal discharge
- Swelling around the eyes
- Open-mouth breathing
- Darkening of the comb/wattles
- Reddening of the shanks or feet
- Decreased egg production
- Lethargy

HPAI spreads through contact with bodily secretions, including feces, ocular, nasal, or oral secretions from infected birds. The virus can spread on vehicles, equipment, shoes, etc. Practicing good biosecurity can help prevent the spread of HPAI onto a farm.

Those biosecurity practices include:

- Eliminating exposure of domestic birds to wild birds. Minimize standing water and extra feed in the environment that might attract wild birds.
- Avoiding contact with other poultry.
- Keeping a specific set of shoes and clothing for tending to poultry. Disposable boot covers or a foot bath that is changed regularly are other measures that can be used.
- Minimizing the number of people who visit the birds.
- Avoiding sharing equipment with other flocks and using appropriate disinfectants for equipment that must come onto a farm.

HPAI is a reportable disease. Any individual who shall gain knowledge or suspect the existence of the disease shall notify this office without delay. Deceased birds suspected of having Avian Influenza should be double-bagged and stored appropriately for testing. Do not expose dead poultry to the environment, other poultry, or wildlife/wild birds. Wash your hands after handling sick or dead birds.

If you suspect HPAI, please alert the New Jersey Department of Agriculture, Division of Animal Health at 609-671-6400.

For additional information about the disease and outreach materials, go to:

- <https://www.nj.gov/agriculture/divisions/ah/>
- <https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/avian/avian-influenza/ai>
- <https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/avian/defend-the-flock-program/>

Management Recommendations SLF nymphs in 2022

Katarzyna Madalinska and Anne Nielsen, May 17, 2022

New Jersey is currently in its 5 year of invasion from spotted lanternfly. Populations are now widespread throughout the state and have established in almost every county in NJ. SLF pressure is variable throughout NJ's counties, and we do not currently have a threshold for management of nymphs.

SLF nymphs are hatching throughout the state and will continue to do so in the coming weeks. Despite seeing nymphs within the vineyard, we do not recommend immediate treatment at this time. Hatch will occur over a multiple week period depending on the site of egg masses and exposure. The early instars feed on new growth, particularly the underside of leaves and shoots. At this point there is no evidence that early instar feeding results in plant injury or yield loss. Peak abundance of SLF nymphs in vineyards is during their 1st to 2 instars approximately and 2-3 weeks after the first hatch. Management during their 2 instar will target the highest number of individuals and prevent additional treatments against nymphs. This timing typically coincides with other key pests within the vineyard, such as grape berry moth and Japanese beetle. Many broadspectrum insecticide options for grape berry moth or Japanese beetle will also effectively kill SLF nymphs (see table) and insecticides against SLF will not be needed until the adult stage.



1st instar SLF in NJ vineyard – photo by K. Madalinska

Continued on next page

Trade name	Active ingredient	Class	Rate per acre	Seasonal Allowance	SLF*
Brigade 2EC	bifenthrin	Pyrethroid	3.2-6.4 oz	6.4 oz	E*
Actara	thiamethoxam	Neonicotinoid	3.5 oz	7.0 oz	E*
Assail 30SG	acetamiprid	Neonicotinoid	2.5-5.3 oz	2 times	G
Carbaryl 4L	carbaryl	Carbamate	1-2 qt	10 qt	E
Avaunt	indoxicarb	Oxadiazine	6 oz	12 oz.	E*
Danitol 2.4EC	fenpropathrin	Pyrethroid	16-21.33 oz	42.66 oz	E*
Belay	clothianidin	Neonicotinoid	2.0–6.0 oz.	12 oz.	G
BaythroidXL	cyfluthrin	Pyrethroid	1.6-3.2 oz	12.8 oz	E

Always consult the label for further instructions.

*2(ee) approved for SLF in NJ grapes

E = excellent control

G = good control

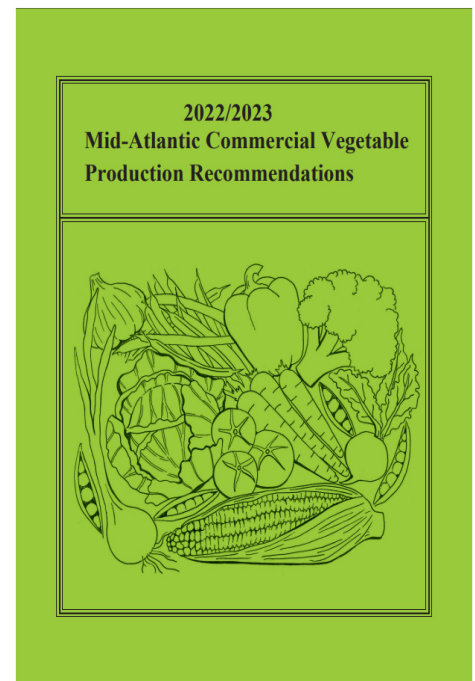
F = fair control

2022/2023 Mid-Atlantic Commercial Vegetable Production Recommendations

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

These recommendations are intended for the commercial vegetable grower who has to make numerous managerial decisions. Although the proper choices of variety, pesticides, equipment, irrigation, fertilizer, and cultural practices are the individual vegetable grower's responsibility, it is intended that these recommendations will facilitate decision-making.

This copy of the 2022/2023 Mid-Atlantic Commercial Vegetable Production Recommendations replaces all previous editions of the Commercial Vegetable Production Recommendations published individually for Delaware, Maryland, New Jersey, Pennsylvania, Virginia, and West Virginia.



Strategies for Effective Management of Botrytis and Anthracnose Fruit Rot in Strawberries

Dr. Mengjun Hu, Univ. of Maryland, and Kathy Demchak, Penn State Extension

Managing gray mold (*Botrytis*) on strawberries is increasingly challenging because of fungicide resistance development, plus a new *Botrytis* species that is less susceptible to fungicides is becoming common in the mid-Atlantic region. Resistance to certain fungicides is also a problem in management of anthracnose fruit rot. This article describes disease management strategies designed to slow further resistance development, while also providing specifics for managing our two most common fruit rots.

First, what's new with *Botrytis*. There are at least 4 species of *Botrytis* that can infect strawberries, but only two of them have been commonly found in the region. *Botrytis cinerea*, the species traditionally infecting strawberries, is present nearly everywhere and affects many horticultural crops. Recently another species, *Botrytis fragariae*, has also been found and as its name indicates, is more specific to strawberry plants. It appears to overwinter on strawberry plant tissue, and preferentially colonizes blossoms early in the spring, causing them to "turn brown and dry up". While sometimes only one of these species is present, both can be present at the same time in a field and even in the same blossom. Using certain fungicides selects for resistant strains of either species, and also preferentially selects for one species over the other. This means that both species have resistance to multiple fungicide groups, and both species can survive in fungicide-treated fields.

How can you tell if the newer species of *Botrytis* might be present in your fields? While *B. cinerea* (the traditional species) is often isolated from both flowers and fruit, *B. fragariae* (the new one) is often isolated from flowers, and it has been shown that *B. fragariae* infection was much more aggressive on strawberry flowers than fruit. If you see larger-than-usual numbers of blossoms turning brown and shriveling (not to be confused with frost damage, which blackens the center of the flower), it may be prudent to choose fungicides as if *B. fragariae* presence had been confirmed in your field. If you see no more symptoms on the flowers or buds than usual, you may be able to assume that the new species isn't present, or at least not to a great extent.

Which fungicides work for each *botrytis* species and which ones don't? Our traditional *Botrytis* species, (*B. cinerea*), is frequently resistant to iprodione (FRAC code 2, Rovral), fenhexamid (FRAC code 17, Elevate), boscalid (FRAC code 7, one of the active ingredients in Pristine), and cyprodinil (FRAC code 9, one of the active ingredients in Switch). Notably, *B. fragariae* seemed to be more tolerant/resistant to fludioxonil (FRAC code 12, the other active ingredient in Switch and also in Miravis Prime) and polyoxin D zinc salt (FRAC code 19, Ph-D or OSO), but it is less resistant to the above active ingredients with a high *B. cinerea* resistance frequency.

Thus far, no resistance to SDHI fungicides (active ingredients in FRAC code 7) has been detected in the newer *Botrytis* species *B. fragariae*. These include pydiflumetofen (the other active ingredient in Miravis Prime besides fludioxinil, which has little effect), isofetamid (Kenja), penthiopyrad (Fontelis), and fluopyram (Luna series). Boscalid, one of the active ingredients in Pristine has less intrinsic activity on *botrytis* species in general compared to other newer group 7 (SDHI) fungicides and as mentioned, resistance within *B. cinerea* is high. Strobilurins (FRAC code 11) and DMIs (FRAC code 3) are ineffective against *Botrytis*.

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All of the active ingredients above are single-site fungicides, as indicated by a single number in their FRAC code, aka activity group, or simply “group” as they appear on labels. They target a single step in the fungus’ processes, so simply put, the fungi find it rather easy to develop workarounds. Thiram, which works for Botrytis (and Captan) are multi-site fungicides as indicated by the “M” in their FRAC codes, so workarounds are less likely. Both play an important role in delaying resistance development to single-site fungicides. They are protectants, meaning that they form a protective layer on the surface of plant tissues, thus preventing diseases from growing into the plant. However, new growth that does not have this protective layer is vulnerable, and while the materials may simply be redistributed with light rains, heavy rains may wash the fungicides off.

More information related to fungicide resistance and categorization of products can be found at the Fungicide Resistance Action Committee web site (<https://www.frac.info/>).

What can you do to manage Botrytis and anthracnose? First, use all cultural methods that you can to minimize inoculum and maximize foliage drying. Having less inoculum around means less disease on your plants, and also fewer chances for resistance development. So, remove those dead and half-dead leaves from plasticulture strawberry plants in the spring, and if at all possible, remove the debris from the field. Keep weeds under control as much as possible. Weedy fields stay wet longer, and Botrytis of any type loves that moisture. The optimum temperature for growth of Botrytis is 65 to 72 degrees F – great temperatures for strawberry growth too, resulting in lots of tender easy-to-infect tissue. If foliage stays wet for 14 hours or longer, Botrytis infections are favored and spores are produced that easily waft around infecting blossoms, fruit, and leaves. Anthracnose is favored by wet conditions of 7 hours or longer, and its optimum temperatures for development are warmer (75 to 82 degrees F). Since its spores are produced in a liquid slime, it is primarily a rain-splashed disease that does not get spread over long distances unless extreme wind-driven rains occur, such as with hurricane events.

Second, target Botrytis early in the season (i.e., during bloom) when applying fungicides and anthracnose later when temperatures are warmer using these strategies: 1) Use multi-site fungicides as the backbone of your spray program to minimize resistance development to the single-site fungicides mentioned above. Maintain continuous use of thiram (more effective for gray mold) and captan (more effective for anthracnose) during the critical disease control periods of bloom and fruit ripening. Use these products alone during drier spells when disease pressure is lower. Apply before rain events to have the material affixed onto the foliage before the rain occurs. 2) Add single-site fungicides only when disease pressure is high (extended periods of moisture). Recommended single-site fungicides during bloom for either Botrytis species are newer category 7 (SDHI) fungicides (Merivon, Kenja, Fontelis, and certain products in the Luna series). They can also be applied during ripening if needed. If conditions conducive to anthracnose development occur earlier than usual, products effective against anthracnose may be applied. 3) Save Switch or Miravis Prime for late-season Botrytis management since gray mold fruit rot is mainly caused by *B. cinerea* – and these products also have good effectiveness against fruit anthracnose. Other fungicides effective on anthracnose appear in the table below. Ph-D or OSO is another good choice for *B. cinerea* control during harvest. While strategies numbered 2 and 3 are helpful in targeting specific species/ diseases, strategy 1 improves fungicide resistance management.

Overall, how you deploy these strategies will vary with your production system. Growers in plasticulture with anthracnose-susceptible varieties may need to focus more on anthracnose management, while growers using matted row production with anthracnose-resistant cultivars may need to focus on controlling Botrytis. Growers with anthracnose-susceptible day-neutral cultivars, which continually bloom and fruit over a long period, should try to focus on using the multi-site protectants thiram and captan prior to major or consecutive rain events.

All growers should use single-site fungicides only when necessary, such as when protectant sprays were missed prior to rain events. Rotate chemistries carefully, and minimize fungicide use during warm dry spells when fungicides are less likely to be needed.

Here is a diagram of what these management strategies would look like for June-bearing cultivars

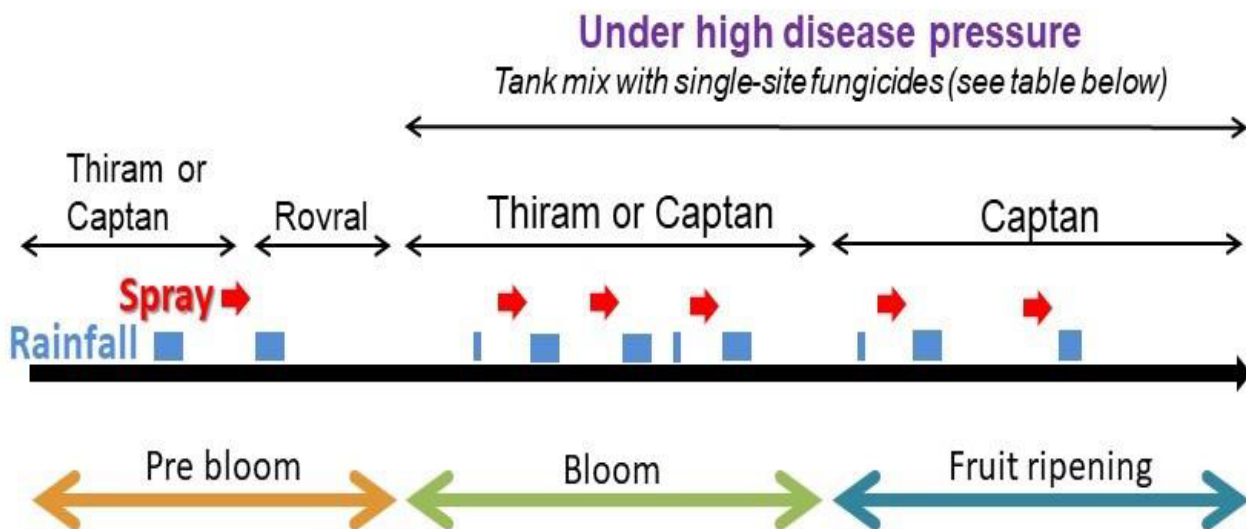


Diagram credit: G. Schnabel, Clemson Univ.; used with permission.

The table below summarizes the information presented in this article with details on specific recommended fungicides, considerations for making the best use of them while minimizing resistance development, and their activity groups. Check individual product labels for rates, pre-harvest intervals, re-entry intervals, and any other restrictions before applying (for example, Fontelis may not be applied on 'Jewel', 'Clancy', or 'L'Amour') and make sure the products are registered for use in your state. Specimen labels can be found at CDMS (<http://www.cdms.net/LabelsSDS/home>) and Agrian (<https://home.agrian.com/label-lookup/>), in addition to company web sites.:

Early Bloom	→	Late Bloom	→	Green Fruit	→	Early Harvest	→	Late Harvest
Maintain continuous coverage with thiram (group M3) or captan (group M4)*								
thiram or captan	thiram or captan	thiram or captan	thiram or captan	captan	captan	captan		
*If in matted row production and gray mold is the major concern, utilize thiram more and captan less. If in plasticulture and when growing anthracnose-susceptible varieties, captan may be needed to a greater extent.								
If weather is wet, add one of the following single-site fungicides to the above, making not more than 2 applications of any activity group over the season.								
<i>Primarily for early season gray mold control</i>				<i>Save for use during harvest</i>				
- Fontelis, group 7, or				<i>For gray mold and anthracnose fruit rot:</i>				
- Kenja, group 7, or				- Switch, group 9 + 12, or				
- Luna Tranquility, group 7 + 9, or				- Miravis Prime, group 7 + 12, or				
- Merivon Xemium, group 7 + 11**, or				- Luna Flex, group 7 + 3				
- Luna Sensation, group 7 + 11**								
**While these products can be used for gray mold, their use will increase selection pressure for anthracnose resistance to group 11 materials.				<i>For gray mold but not anthracnose fruit rot:</i>				
				- Ph-D or OSO, group 19				
				<i>For anthracnose fruit rot but not gray mold:</i>				
<i>Alternatives to group 7 fungicides if needed:</i>				- Tilt, group 3				
- Rovral, group 2 (pre-bloom only)***, or				- Inspire Super, group 3 + 9				
- Elevate, group 17***				- Cabrio, group 11***				
				- Pristine, group 7 + 11***				
				- Quadris Top, group 11 + 3***				
				- Quilt Xcel, group 3 + 11***				
***May be used once per season if resistance to active ingredients in these products is known to be low on your farm. Do not, however, make more than 2 applications of any activity group over the course of a season.								

USDA Accepting Applications to Help Cover Costs of Organic, Transitioning Producers

Agricultural producers and handlers who are certified organic, along with producers and handlers who are transitioning to organic production, can now apply for the U.S. Department of Agriculture’s (USDA) Organic and Transitional Education and Certification Program (OTECP) and Organic Certification Cost Share Program (OCCSP), which help producers and handlers cover the cost of organic certification, along with other related expenses. Applications for OTECP and OCCSP are both due October 31, 2022.

OTECP covers certification costs for organic producers and handlers (25% up to \$250 per category); eligible expenses for transitional producers, including fees for pre-certification inspections and development of an organic system plan (75% up to \$750); registration fees for educational events (75% up to \$200) and soil testing (75% up to \$100).

Meanwhile, OCCSP covers 50% or up to \$500 per category of certification costs in 2022.

Planting with Raw Manure or Compost

Wes Kline, May 24, 2022

How long do I need to wait before planting after applying raw manure or compost? This is a question we received from cabbage and leafy green growers.

The answer: It depends under the Food Safety Modernization Act Produce Safety Act (FSMA-PSR)

First, let's talk about what biological soil amendments of animal origin include. They include raw manure, stacked manure, untreated manure slurries, untreated manure teas and table scraps from restaurants and delis. Bone Meal, blood meal, feather meal and fish meal are also considered raw manure if you cannot show that they were commercially processed.

Below are the sections of the PSR that apply to raw manure and composting:

- The Produce Safety Rule does not currently establish intervals for the application of treated and untreated soil amendments. This does not mean that there is zero risk associated with applying these amendments or that FDA is suggesting a zero-day application interval.
- Untreated biological soil amendments of animal origin must not be applied in a manner that directly contacts the harvestable portion of the crop and must be applied in a manner that minimizes the potential for contact with covered produce after application (§ 112.56(a)(1)(a)). In other words, you cannot sidedress with raw manure.
- Additionally, if an untreated biological soil amendment of animal origin is applied in a manner that does not contact covered produce during or after application, then the minimum application interval is zero days (§ 112.56(a)(1)(ii)). This would not apply to root crops since they would contact the manure.
- Growers may follow the National Organic Standards, but they are not currently required for the FSMA Produce Safety Rule. The NOP Regulation states that raw animal manure must be composted unless it is: (a) Incorporated into the soil not less than 120 days prior to the harvest of a product whose edible portion has direct contact with the soil surface or soil particles; or (b) Incorporated into the soil not less than 90 days prior to the harvest of a product whose edible portion does not have direct contact with the soil surface or soil particles.

Composting:

- Composting is defined in § 112.3(c) as a process to produce stabilized compost in which organic material is decomposed by the actions of microorganisms under thermophilic conditions for a designated period of time (e.g., 3 days) at a designated temperature (e.g., 131°F (55°C)), followed by a curing stage under cooler conditions.
- The length of time will depend on management parameters including aeration, turning, cover, feeds tock make-up, moisture levels, and many other potential variables at a designated temperature.
- Treating soil amendments which contain ingredients of animal origin, such as manure and other animal byproducts, is the best method for reducing the risk of contamination.
- §§ 112.54(b)(1) and (2) of the FSMA Produce Safety Rule provides two processes, static and turned

composting, as examples of validated options for treating manure and other soil amendments.

- In § 112.54, other methods are allowed if they are scientifically valid, controlled processes supported by adequate scientific information and that have been validated to achieve the microbial standards outlined in § 112.55.
- Curing, as defined by § 112.3(c) means the final stage of composting, which is conducted after much of the readily metabolized biological material has been decomposed, at cooler temperatures than those in the thermophilic phase of composting, to further reduce pathogens, promote further decomposition of cellulose and lignin, and stabilize composition. Curing may or may not involve insulation depending on environmental conditions.
- There are many more methods of composting. Examples of thermophilic composting are provided in the FSMA Produce Safety Rule that are designed to meet § 112.55(b). Non-thermophilic methods may be acceptable (e.g., vermicomposting, anaerobic digestion, etc.). Processes must be validated to meet the treatment required (§ 112.55 (a) or (b)) for intended application (§ 112.56). Process monitoring to meet the microbial standard and recordkeeping are critical to ensuring the compost is adequately treated.

There are recordkeeping requirements:

- If a grower plans to treat or compost soil amendments on their farm, they must establish and keep records that document the process controls (for example, time, temperature, and turnings) were achieved (§ 112.60(b)(2)).
- Purchased, treated biological soil amendments must have documentation that indicates what process was used to treat the soil amendment, that the treatment process is a scientifically valid process that has been carried out with appropriate process monitoring (e.g., achievement of appropriate time and temperatures if composting according to § 112.54) and that the soil amendment has been handled and stored in a way that minimizes contamination from untreated amendments (§ 112.52(a)).
- For biological soil amendments of animal origin that are received from a third party, documentation must be provided and kept by the grower to show the process used to treat the soil amendment is a scientifically valid process that has been carried out with appropriate process monitoring and prove that it has been handled in a way that minimizes the risk of contamination (§ 112.60(b)(1)).
- The documentation must be renewed at least annually (§ 112.60(b)(1)).

Calendar of Events

- Indicates a newly added event

• **June 16**

In-Person CORE Meetings in Burlington County; Burlington County Amphitheater, 5 Pioneer Boulevard, Westampton, NJ 08060; 5:30 PM - 7:00pm; Pesticide credits issued – CORE (3); Pre-registration is appreciated. Meetings are outdoors. There is no shade so come prepared with water, sunglasses, and a wide-brimmed hat. There is seating on the wide grass terraces surrounding the stage (see photo), but you may be more comfortable if you bring a chair. The meetings will be cancelled if there is inclement weather. Email Sandra Trossbach strossbach@co.burlington.nj.us or call 609-265-5051.

• **July 14**

In-Person CORE Meetings in Burlington County; Burlington County Amphitheater, 5 Pioneer Boulevard, Westampton, NJ 08060; 5:30 PM - 7:00pm; Pesticide credits issued – CORE (3) plus categories 1A (1), 10 (1), and PP2 (1); Pre-registration is appreciated. Meetings are outdoors. There is no shade so come prepared with water, sunglasses, and a wide-brimmed hat. There is seating on the wide grass terraces surrounding the stage (see photo), but you may be more comfortable if you bring a chair. The meetings will be cancelled if there is inclement weather. Email Sandra Trossbach strossbach@co.burlington.nj.us or call 609-265-5051.

July 16-19

Cultivate '22; Greater Columbus Convention Center, Ohio; Learn best practices and foster business connections so you and your business perform better, grow faster, than ever and are prepared for the future at this event. Visit www.cultivateevent.org for more information

July 26-27

2022 Rutgers Turfgrass Research Field Days, Hort Farm 2, 102 Ryders Lane, North Brunswick, NJ 08902; Meet the Rutgers experts, creeping bentgrass and Kentucky Bluegrass NTEP trials, advances in disease, insect, weed control, new strategies for Kyllinga control and naturalized area weed mgmt., best management strategies for control of Dollar Spot, and other important Leaf and root diseases of turf, and more! Pesticide re-certification credits available for both days! See full list of credits, learn more and sign up at njturfgrass.org

August 1-5

2022 Perennial Plant Association National Symposium, Lancaster Marriott at Penn Square, 25 S Queen St., Lancaster PA; Contact the Perennial Plant Association at 888.440.3122 or visit perennialplant.org for more information.

July 30- August 3

ASHS 2022 Annual Conference; Hyatt; Chicago, IL; This conference is where the latest science and technology is showcased related to horticulture. Our mission is to bring together researchers, scientists, industry, academia, extension, government, and students to cultivate ideas and share new techniques relating to horticulture and plant sciences; More info at <https://ashs.org/page/GeneralConference>

July 31- August 3

International Association for Food Protection; David L. Lawrence Convention Center, Pittsburgh, PA; Information on current and emerging food safety issues, the latest science, innovative solutions to new and recurring problems, and the opportunity to network with thousands of food safety professionals from around the globe; Find more information and register at www.foodprotection.org/annualmeeting/

August 24-26

Farwest; Oregon Convention Center; Portland, OR; The biggest green industry trade show in the West. With nearly 400 exhibitors, nursery and retail garden center industry. Whether you're a grower, retailer, wholesale buyer, supplier, or landscape professional, you'll find that Farwest offers you the complete trade show experience; For more information visit <https://farwestshow.com>

August 29-30

International Carrot Conference; Mount Vernon, WA; its purpose is to bring together everyone and anyone interested in carrots: growers, packers, shippers, seed producers, breeders, pathologists, sellers, marketers, University and government researchers, extension specialists, students and anyone interested in the carrot industry; For more information email dutoit@wsu.edu or snolan@agmgt.com or visit InternationalCarrots.org

September 26-28

2022 International Pepper Conference; Arizona; The academic program taking place in Tucson, Arizona and the chie pepper variety trial, mechanical harvest, field and equipment demonstrations occurring at the Curry Chile and Seed Co. in Pearce, Arizona. The deadline for early bird registration is August 26, 2022. Registration and additional information can be found at this link: <https://extension.arizona.edu/ipc/>

February 3-7, 2023

North American Farmers' Direct Marketing Association (NAFDMA) Convention; Austin, TX; The convention will have all the great farm tours, educational sessions, presenters, exhibitors, and agritourism connections you have come to expect. Visit www.nafdma.com for more information

Important June Pests (refer to March edition or visit the Plant and Pest Advisory for full scouting guide)

Projected GDD50 accumulation as of 5/24/2022 (USPEST)

Region	Location	Station	24-May	1-Jun	1-Jul
South	Upper Deerfield	NJ50	488	638	1358
Central	Howell / Freehold	NJ10	426	551	1203
North	High Point	NJ59	288	387	909

Note: Growing degree-day values utilize daily average air temperatures with a minimum temperature threshold (a.k.a. 'base') of 50F = GDD50 (max. temp. threshold set at 95F). These values are accumulated from a biofix date, such as January or March 1st in the NE USA. Provided GDD50 are scouting ranges and should be truthed.

Forecast: NOAA NCEP Coupled Forecast System model version 2 (CFSv2) forecast system (3.5 months) (USPEST.ORG)

BAGWORMS (600-900 GDD) (Bagworm hatch prediction as of 5/24/22 - now until July 14 (Southern NJ (NJ50)))

Crop type	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Reference	Developmental / Target Stage
Conifer mostly, many minor hosts	Bagworm	<i>Thyridopteryx ephemeraeformis</i>	600	900	RU	Larvae (early instars) - ONLY CONTROL WINDOW

BORER Insect Activity for 350 - 1500 GDD (Now until ~July 1 in Southern NJ (NJ50))

Crop type	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Reference	Developmental / Target Stage
Malus, Prunus, many	Lesser peach tree borer	<i>Synanthedon pictipes</i>	350	375	4	Adult flight, egg laying
Dogwood, apple, pecan, elm, hickory, willow	Dogwood borer	<i>Synanthedon scitula</i>	350	850	4	adults, eggs, caterpillars
Birch	Bronze Birch Borer	<i>Agrilus anxius</i>	440	880	RU	Adults (egg laying)
Malus, Prunus, many	Peach Tree Borer	<i>Synanthedon sp.</i>	500	600	RU	Adults - emerge (1st treatment both types)
Rhododendron	Rhododendron borer	<i>Synanthedon rhododendri</i>	509	696	RU	Adults emerge
Malus, Prunus, many	Greater peach tree borer	<i>Synanthedon exitiosa</i>	575	710	4	Adult emergence
Many	Roundheaded appletree borer	<i>Saperda candida</i>	802	1129	RU	Adults
Ash	Emerald ash borer	<i>Agrilus planipennis</i>	1000	1200	4	Peak adult activity
Malus, Prunus, many	Peachtree borer	<i>Synanthedon sp.</i>	1500	1800	RU	Larvae Treatment
Many	Roundheaded apple tree borer	<i>Saperda candida</i>	1514	1798	5	Typical treatment window
Conifer	Nantucket tip moth	<i>Rhyacionia frustrana</i>	1514	1917	RU	Adults 2nd generation

SCALE Insect Activity for 350 - 1500 GDD (Now until ~July 1 in Southern NJ (NJ50))

Crop type	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Reference	Developmental / Target Stage
Conifer	Elongate Hemlock Scale	<i>Fiorinia externa</i>	360	700	RU	Crawlers (1st generation)
Many	Oystershell Scale	<i>Lepidosaphes ulmi</i>	363	707	RU	Crawlers
Conifer	Striped pine scale	<i>Toumeyella sp.</i>	400	500	3	Crawlers (1st generation)
Conifer	Pine tortoise scale	<i>Toumeyella parvicornis</i>	400	1000	4	Crawlers
Juniper	Maskell scale	<i>Lepidosaphes pallida</i>	470	-	6	Crawlers (1st generation)
Many	White prunicola scale	<i>Pseudauleucaspis prunicola</i>	513	-	6	Crawlers (1st generation)
Many	Cottony camellia / taxus scale	<i>Pulvinaria floccifera</i>	520	-	6	Crawlers (1st generation)
Euonymus	Euonymus Scale	<i>Unaspis euonymil</i>	533	820	RU	Crawlers (1st generation)
Conifer	Juniper scale	<i>Carulaspis juniperi</i>	550	700	7	Egg hatch
Conifer	Cryptomeria scale	<i>Aspidiotus cryptomeriae</i>	600	800	3	First crawler emergence
Many	White prunicola scale	<i>Pseudauleucaspis prunicola</i>	707	1151	RU	Crawlers (1st generation)
Conifer	Juniper scale	<i>Carulaspis juniperi</i>	707	1260	RU	Crawlers (1st generation)
Many	Calico scale	<i>Eulecanium cerasorum</i>	714	-	6	Crawlers (1st generation)
Conifer	Striped pine scale	<i>Toumeyella pini</i>	750	800	4	Egg hatch
Oak, hickory, birch, many	Oak lecanium scale	<i>Parthenolecanium quercifex</i>	789	-	6	Crawlers (1st generation)
Acer	Cottony maple leaf scale	<i>Pulvinaria acericola</i>	802	1265	5	Crawlers (1st generation)
Many, shadetrees	Cottony maple scale	<i>Pulvinaria innumerabilis</i>	802	1265	RU	Crawlers (1st generation) - control target
Oaks	Golden oak scale	<i>Asterolecanium variolosum</i>	802	1266	5	Egg hatch
Maples	Japanese maple scale	<i>Lopholeucaspis japonica</i>	829	-	6	Crawlers (1st generation)
Elm	European elm scale	<i>Gossyparia spuria</i>	831	1388	6,2	Crawlers (1st generation)
Shade trees	European fruit lecanium scale	<i>Parthenolecanium corni</i>	932	1645	6,RU	Crawlers - control target
Conifer	Pine tortoise scale	<i>Toumeyella parvicornis</i>	1000	1200	4	Egg hatch ends, last of crawlers
Yew, many conifers	Fletcher Scale (Yew)	<i>Parthenolecanium fletcheri</i>	1029	1388	RU	Crawlers (1st generation) - control target
Many	Indian wax scale	<i>Ceroplastes ceriferus</i>	1145	-	6	Crawlers (1st generation)
Euonymus	Euonymus Scale	<i>Unaspis euonymil</i>	1150	1388	5	2nd generation targeted treatments
Shade trees	European fruit lecanium scale	<i>Parthenolecanium corni</i>	1266	1645	5	Crawlers
Conifer	Pine Needle Scale	<i>Chionaspis pinifoliae</i>	1290	1917	3	Crawlers emerge (2nd generation) - control target
Conifer	Hemlock scale	<i>Abgrallaspis ithacae</i>	1388	2154	5	Typical treatment window

Note: Growing degree-day values utilize daily average air temperatures with a minimum temperature threshold (a.k.a. 'base') of 50F = GDD50 (max. temp. threshold set at 95F). These values are accumulated from a biofix date, such as January or March 1st in the NE USA. Provided GDD50 are scouting ranges and should be truthed.

$$\text{Daily GDD50} = \frac{(\text{Max} + \text{Min temp.})}{2} - 50 \text{ (min temp. threshold)}$$

References

RU	Rutgers Cooperative Extension - Landscape IPM Notes
2	http://cctompkins.org/resources/using-growing-degree-days-for-insect-management
3	https://extension.psu.edu/ipm-basics-for-christmas-trees#section-2
4	https://www.canr.msu.edu/ipm/agriculture/christmas_trees/gdd_of_conifer_insects
5	https://www.agriculture.nh.gov/publications-forms/documents/landscape-pests.pdf
6	https://extension.umd.edu/ipm/pest-predictive-calendar-landscapenursery
7	https://www.canr.msu.edu/ipm/agriculture/christmas_trees/gdd_of_landscape_insects
Unv. Del.	Coorespondance with Dr. Kunkel (University of Delaware)-evolving GDD ranges

Compiled by - Timothy J. Waller, Ph.D. - Rutgers Cooperative Extension, Cumberland County Nursery Crops - twaller@njaes.rutgers.edu

Boxwood Blight - It is time to begin protective fungicide applications in high value areas if you have not already done so. Protective fungicide applications should remain in effect or be initiated immediately for Boxwood Blight throughout NJ.

These advisories are general in nature and change rapidly over time and throughout the state! Someone from your business should be using this risk model daily if boxwood is important to your financial stability – In 30 seconds you can have a better idea of boxwood blight (and other pathogen) activity in your immediate area! Please visit the USPEST.ORG Boxwood Blight Risk Model –(https://uspest.org/risk/boxwood_app?sta=NJ50). At this website: Input your area code – select closest weather station – check 7-14 prediction – click on graph / table.

Fungicides

You very well may have these materials already applied as ‘cover-sprays’ – But – be mindful that protectant fungicides lose efficacy the more rain (or overhead irrigation) they are subjected to, and reapplication may be warranted. ROTATE between Fungicide Resistance Action Committee (FRAC codes) to avoid this pathogen becoming resistant to specific chemicals

*Format: [FRAC code]: Chemical name (Trade names
* no endorsement implied)*

[M05]: Chlorothalonil (Daconil WS)

[M05 + 1] Chlorothalonil + Thiophanate methyl (Spectro 90WDG)

[11] Trifloxystrobin + [7] Fluopyram (Broadform)

[11] Trifloxystrobin + [3] Triadimefon (Armada 50WDG)

[M03] Mancozeb

[12] Fludioxonil (Medallion WDG)

[3] Tebuconazole (Torque)BW

Please contact Tim Waller for additional information
(twaller@njaes.rutgers.edu OR 856-451-2800)

*DISCLAIMER: The label is the law, always refer to it for allowable host crops, use-restrictions, application rates, reapplication intervals, re-entry intervals (REI), and mix compatibility information. Production and pesticide information on this site are for private/commercial pesticide applicators and landscape professionals only, and are **NOT for home gardener use**. Provided materials represent examples and do not cover all possible control scenarios. Trade-names listed do not imply endorsement and are used as examples only. Please contact your local agent or chemical sales representative for more information or to discuss additional pest management options.*

Intro Inputs Graph Table				
Station NJ50, UPPER DEERFIELD NJ, 2022				
	2022		2021	
Date	Risk index	Risk class	Risk index	Risk class
May 23	0	Very Low Risk	0	Very Low Risk
May 24	0	Very Low Risk	0	Very Low Risk
May 25	34	Very Low Risk	0	Very Low Risk
May 26	56	Low Risk	0	Very Low Risk
May 27	415	Up to 3-13 Lesions	0	Very Low Risk
May 28	0	Very Low Risk	0	Very Low Risk
May 29	0	Very Low Risk	5	Very Low Risk

To get this information by email, log in to or sign up for [USPEST.org](https://uspest.org) email notifications. To see the model output together with relevant weather inputs, go to [MyPest Page](#).



Redheaded flea beetle - life stage predictions for South, Central, and Northern New Jersey with material considerations

Calendar date predictions for target range as of 4/7/2022

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 Information compiled by Dr. Timothy J. Walker - Rutgers Cooperative Extension (2021)

Growth Stage	Gen.	GDD50 TARGET RANGE		SOUTH		CENTRAL		NORTH		NOTES (high infestation locations)	Material / Compound Considerations (Examples = no endorsements implied) [IRAC GROUP #]
		LOW	HIGH	LOW	HIGH	LOW	HIGH	Systemic (S) - Contact (C) - Biologicals (B) - Herbicides (H)			
Egg hatch - larvae	1	242	600	4-May	30-May	10-May	5-Jun	28-May	20-Jun	(S) Initiate systemic treatments 1-month prior to adult activity (S) Systemic granular or granular incorporation @ planting is effective (C) Contact materials may be used to knock-down larvae (B) Some bio-rational / logicals are effective on larvae - Look for larval activity on the outside of root balls - Larvae may be active prior to this GDD50 timeframe	Cyantraniliprole [28] (Mainspring) Chlorantraniliprole [28] (Acelepryn) Organophosphates [1B] - Acephate (Orthene, Acephate 97UP) Neonicotinoids [4A] - Dinotefuran (Safari 20SC) ; Thiomethoxam (Flagship 25 WG) ; Imidacloprid (Imidacloprid 2F, Marathon 1%G, Marathon II)
Adults (feeding / laying eggs)	1	517	1028	25-May	18-Jun	31-May	24-Jun	15-Jun	11-Jul	(S/C/B) Start adult contact sprays - continue systemic treatments (H) Control weeds - adults will hide-in and feed-on them - Adult feeding damage will be apparent - Scout to determine best time for applications - Use of agitator compounds may drive adults from hiding	GRANULAR APPLICATIONS and INCORPORATIONS Neonicotinoids [4A] Imidacloprid (Marathon 1%G, Coretect tablets, Mallet 0.5G) (Initiate systemic treatments 1-month prior to adult activity)
Egg hatch - larvae	2	1570	1860	8-Jul	17-Jul	16-Jul	26-Jul	5-Aug	19-Aug	(S) Continue systemic treatments (C/B) Contact materials to target larvae AND adults - Potential for considerable overlap of larvae - adult stages (H) Control weeds - adults will hide in and feed on them	CONTACT Bifenthrin [3A] (UP Star SC, Talstar Select) Clyfluthrin [3] (Decathalon 20WP) - Rotation partner Carbamates [1A] - Carbaryl (Sevin SL) Tolfenpyrad [21A] (Hachi-Hachi SC) Cyclaniliprole [28] (Sarisa) ± Flonicamid [29] (Pradia)
Adults (feeding / laying eggs)	2	1878	2318	19-Jul	3-Aug	27-Jul	13-Aug	20-Aug	16-Sep	(C/B) Adult contact sprays (S) * If pest pressure is high * - continue systemic materials (H) Control weeds - adults will hide-in and feed-on them - Adult feeding damage will be apparent - Use of agitator compounds may drive adults from hiding	BIOLOGICAL / BIORATIONAL Azadirachtin (Aza-Direct, Azatin-O) Beneficial nematodes (Millennium) Entomopathogenic fungi (Ancora, BotaniGuard) Adult Agitator (Captiva Prime)

* A third generation of larvae and feeding adults is possible in the southern and central regions *
 Estimated using USPEST.org, 3.5-month CFSv2 based seasonal climate forecast, simple average growing degree-days, min temp: 50F, max temp: 95F.
 Insect development growing degree-day ranges based on trials by Dr. Kunkel - Extension Specialist - University of Delaware - subject to change

SYSTEMIC DRENCHES

Cyantraniliprole [28] (Mainspring)
 Chlorantraniliprole [28] (Acelepryn)
 Organophosphates [1B] - Acephate (Orthene, Acephate 97UP)
 Neonicotinoids [4A]- Dinotefuran (Safari 20SC) ; Thiomethoxam (Flagship 25 WG) ; Imidacloprid (Imidacloprid 2F, Marathon 1%G, Marathon II)

CONTACT

Bifenthrin [3A] (UP Star SC, Talstar Select)
 Clyfluthrin [3] (Decathalon 20WP) - Rotation partner
 Carbamates [1A] - Carbaryl (Sevin SL)
 Tolfenpyrad [21A] (Hachi-Hachi SC)
 Cyclaniliprole [28] (Sarisa) + Flonicamid [29] (Pradia)

GRANULAR APPLICATIONS and INCORPORATIONS

Neonicotinoids [4A]
 Imidacloprid (Marathon 1%G, Coretect tablets, Mallet 0.5G)
 (Initiate systemic treatments 1-month prior to adult activity)

BIOLOGICAL / BIORATIONAL

Azadirachtin (Aza-Direct, Azatin-O)
 Beneficial nematodes (Millennium)
 Entomopathogenic fungi (Ancora, BotaniGuard)
 Adult Agitator (Captiva Prime)

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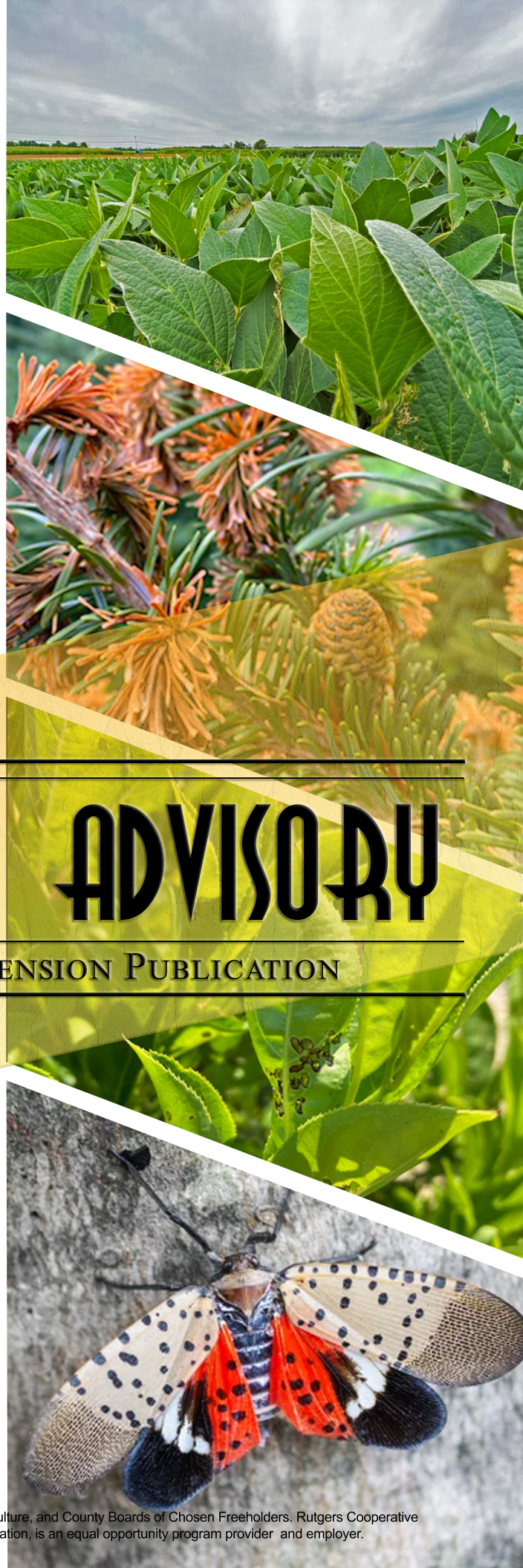
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Regularly Scheduled Meetings

Pesticide Credit Exams

Testing is currently being held virtually because of the COVID pandemic.

Rutgers has taken over the pesticide exam program.

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

Cumberland County Agriculture Development Board

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

Meetings are held on the 2nd Tuesday of each month. Meetings start at 7 p.m.

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

Cumberland County Board of Agriculture

Virtual Meeting Information
<https://rutgers.zoom.us/my/smangia>
Meeting ID: 529 557 9817
Passcode: Sal2020
or call in at 1 (646) 558 - 8656

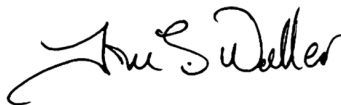
Meetings are held on the 3rd Thursday of September- May at 7 p.m.

For more information call Keith MacIndoe, President at 856-207-7773

Sincerely,



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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.

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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/>

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