



Tar Spot of Corn is Widespread in Our Region



Multispecies Cover Crop Mixes Cautions



Fall Management for Late Blight



Urban Farms Sustainable Pest Management Fact Sheet Series

PAGE 1

PAGE 2

PAGE 4

PAGE 6

## Tar Spot of Corn is Widespread in Our Region

Julie Kikkert, CCE Cornell Vegetable Program, and Sarah Pethybridge, Cornell AgriTech

Tar spot is a new disease of corn (all types) in New York that is now widespread in our region of western, NY. This disease, caused by the fungus Phyllachora maydis is common throughout South and Central America, and the Caribbean and has the potential to severely reduce yields of susceptible corn varieties. Tar spot was first detected in the US in field corn in Illinois and Indiana in 2015 and has been spreading each year. A national tar spot initiative, which we belong to, tracks the occurrence of tar spot by county each year. Current and historical maps can be viewed at https://cropprotectionnetwork.org/maps/ tar-spot-of-corn. In 2024, tar spot was first detected in WNY on August 13th in Niagara County. Currently, 17 WNY counties are confirmed positive for tar spot (Figure 1) and this includes both field corn and sweet corn.

## **Tar Spot Symptoms & Scouting**

Tar spot is most likely to be found in fields with a history of corn because it overwinters in corn debris. However, there are so many

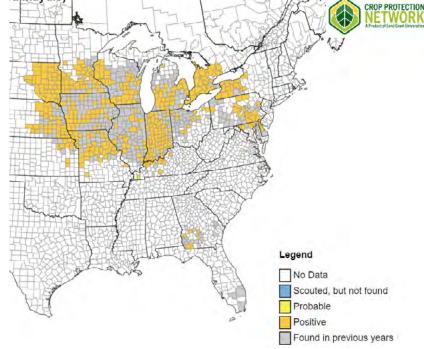


Figure 1. The distribution of tar spot in field and sweet corn by state and county to date in 2024. Source: https://cropprotectionnetwork.org/maps/tar-spot-of-corn.

## About VegEdge

VegEdge newsletter is exclusively for enrollees in the Cornell Vegetable Program, a Cornell Cooperative Extension partnership between Cornell University and CCE Associations in 14 counties.

The newsletter is a service to our enrollees and is intended for educational purposes, strengthening the relationship between our enrollees, the Cornell Vegetable Program team, and Cornell University.

We're interested in your comments. Contact us at: CCE Cornell Vegetable Program 480 North Main Street, Canandaigua, NY 14224 Email: cce-cvp@cornell.edu
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# Contents

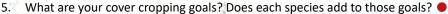
Tar Spot of Corn is Widespread in Our Region	. 1
Multispecies Cover Crop Mixes Cautions	. 2
State of the Industry Survey Released by American Vegetable Grower	. 3
Fall Management for Late Blight	. 4
Fresh Market Crop Notes	. 5
NYS Urban Growers Pest Management Needs Assessment Released	. 6
Urban Farms Sustainable Pest Management Fact Sheet Series	. 6
Upcoming Events	. 7
New York Farm to School Summit 2024	. 7
Contact Us	. 8

The next issue of VegEdge will be produced on November 6, 2024.

## **Multispecies Cover Crop Mixes Cautions**

Elizabeth Buck, Cornell Cooperative Extension, Cornell Vegetable Program Multispecies cover crop mixes are being widely promoted. It is absolutely true that mixing species can help realize more cover cropping goals than a single species. There is also a limit to how much benefit you get from continuing to add more species to a mix. A few things to be aware of:

- 1. Brassica seed in cover crop mixes is not well-screened for pathogens and there is a small risk of introducing club root.
- Cover crops can and do interrupt (aka ruin) disease management rotation cycles. Radish species break brassica rotations. Peas, clover, and vetch break legume rotations. Sunflowers are a favorite of white mold. Choose species with your longer-term disease management needs in mind.
- 3. More species is not always better. There is such a thing as too much niche competition and your mix will have a couple dominant species while others struggle (aka are wasted investments).
- 4. Make sure all the species in your mix grow well at the time of year you plan to sow.





spores in the air this fall that with a trained eye, tar spot can be found at low levels in many fields in our area. The disease is more likely to occur in low lying areas and near windbreaks.

Disease symptoms are small, raised, black spots that have a 'tarry' appearance and occur randomly across the upper and lower surfaces of the leaves (Figure 2). The black spots are fungal structures that contain spores. The spots are typically 1/16<sup>th</sup> to 3/4<sup>th</sup> of an inch in diameter and typically extend through the leaf so that they can be viewed on both sides. These black spots can also appear on corn husks and leaf sheaths. In addition to the black spots, tan to brown lesions with dark borders ('fisheye') may also appear around the fungal structures. The black spots may be mistaken for older common rust pustules (which progress from orange red to black with age), or insect droppings. Insect droppings can be differentiated from tar spot by appearing on only one side of the leaf and may easily be scraped off. Tar spot cannot be scraped or washed off and are typically raised from the leaf surface.



Figure 2. Tar spot lesions on corn can be individual on a leaf (left) or in large clusters (right). *Photos: J. Kikkert, Cornell Vegetable Program* 

#### Management

Our primary concern until recently has been documenting the regions where tar spot is present. All growers should be planning for good crop rotation out of corn (the recommendation is three years to reduce tar spot). If you have a field with high incidence this season (there are a few of you out there), crop rotation, burying crop debris, and planting tolerant varieties are important. Fungicide applications may be warranted next season if tar spot is detected early in the season. We are gathering information from other states, preparing educational materials and presentations for our winter conferences.

For more information: <a href="https://cropprotectionnetwork.org/encyclopedia/tar-spot-of-corn">https://cropprotectionnetwork.org/encyclopedia/tar-spot-of-corn</a>

## State of the Industry Survey Released by American Vegetable Grower

Robert Hadad, Cornell Cooperative Extension, Cornell Vegetable Program

The American Vegetable Grower publication has put out their annual State of the Industry Survey. It is packed with relevant questions and attracts a sizeable number of produce growers who respond to it. Some of the findings are quite interesting. Below is a brief overview of the information gleaned from the many charts in the report. A note, some of the results show a response greater than the 100% number of respondents due to many farms answering doing more than one type of activity such as types of markets etc.

- 659 produce growers responded. Divided by acreage: 1-24A = just under 50%; 25-99A and 100-499A each group at about 15% of total.
- 75% sell directly to consumers. 30% to supermarkets, and about 28% to food distributors/food service and these growers grew a mix of crops from a list of over 30 types.
- Over 50% of growers planned on decreasing production for one or more of the crops they grew. New crops growers were looking to add new or increase what they were already growing include garlic, strawberries, Brussels sprouts, celery, lettuce/greens, sweetcorn, herbs, Asian greens/microgreens, carrots.
- Moving to labor, most of the workers hired are seasonal part time, followed by seasonal full time, with a much smaller percentage of full-time workers (not family). H2A workers accounted for 20% of the labor.
- Many growers said the weather overall not hugely impactful though drought, extreme heat, extreme rain, and frost impacted more than 20% of farms. (Interestingly, see responses to next questions).
- 5 Biggest challenges faced by growers: low crop prices, labor cost, extreme weather, weed pressure, fuel prices
- Compared to the previous year's sales, nearly 25% noted sales were flat, 16% down by more than 15%, 8% down by less than 10%, 4% by less than 4%. 16% were up by more than 15%, 18% up between 5-10% and 12% up less than 5%.
- How do crop prices compare to 10 yrs ago: less than 20% said 29+% higher now; 20% said 20-28% higher now; 30% said 10-19% higher now; 25% said flat; about 7% said 10-more than 29% lower.

continued from page 3

- Organic or conventional: 33% organic; over 60% said conventional; about 6% said would become organic; 30% of organic said would add acreage.
- How many growers use some form of Ag Tech: 30% yes with top Ag Tech tools being GPS, using weather stations, using field
  moisture sensors
  - Biggest reason for moving towards Ag Tech tools, increasing efficiency, improving crop quality, lack of labor, help with decision making
  - Those who stated "no" to Ag Tech tools said their farms too small, too expensive, didn't need it. Only 25% of respondents said they plan to add Ag Tech tools in the next 5 years with the top choices being weather stations and soil and water sensors.
- About 45% said they used protected ag production with more than 65% using high tunnels and 33% using low tunnels. Just under 40% had greenhouses. Less than 5% used some form of vertical or other CEA
  - Reasons for using tunnels and other forms CEA: season extension top choice. Transplant production, unpredictable
    weather, and reduction of pest pressure.
  - Between 9-12% growers use some type of hydroponic production in high tunnels or other facilities to grow mostly greens

After reading this, the results show a bit of a struggle trying to find the right combination of what crops to go to match market needs in an efficient and cost-effective manner with unreliable labor force and weather conditions. Many individuals are battling the same issues, fighting to achieve the same goals. In future articles, let's explore some examples of alternative and collaborative marketing and other means to become more successful.

## Fall Management for Late Blight

Marion Zuefle, NYSIPM, Cornell

Fall is a crucial time for vegetable producers to implement pest management strategies to minimize future spring issues, particularly concerning late blight (*Phytophthora infestans*), a serious disease affecting tomatoes and potatoes. This year, several New York counties reported late blight, including Monroe, Wyoming, Cattaraugus, Allegany, Onondaga, and Lewis, among others. <a href="Plant-Aid's map">Plant-Aid's map</a> (https://plant-aid.org/map) shows confirmed locations. By taking proactive steps now, growers can significantly reduce the risk of late blight overwintering in their fields.

Reduce late blight's overwintering potential by:

- Eliminating infected plants
- Managing cull potatoes
- Incorporating infected material
- Composting properly
- Monitoring for volunteer plants

Late blight overwinters through living plant tissue, primarily infected potato tubers that remain unfrozen. Key factors contributing to its survival include tubers left several inches deep in the soil, infected tubers in compost piles that do not fully decompose, and diseased potatoes stored outdoors during winter. Conversely, late blight cannot overwinter if tubers freeze or fully decompose.



Volunteer potato plants coming up in oats. Photo: NYSIPM, Cornell

To prevent late blight from surviving the winter, growers should incorporate infected plant material into the soil by digging or tilling to accelerate decay. Proper compost management is essential—mixing green and dry materials and turning the pile regularly ensures effective decomposition. In spring, be vigilant for volunteer potato plants from the previous crop, as these can harbor late blight. Prompt removal of these plants helps prevent disease spread. Rotating away from solanaceous crops for at least three years is also advisable.

Identifying late blight early is crucial, as it spreads rapidly, destroying crops in as little as 2 weeks. Look for dark, greasy patches on leaves and dense brown lesions on fruit, which may develop white, fuzzy sporulation in humid conditions. Potato tubers may exhibit shallow, reddish-brown dry rot, making it essential to sort and dispose of diseased tubers to minimize overwintering risks.

When planning for next year's planting, choose resistant varieties and select well-drained locations, as moist environments favor late blight. Use recommended spacing to enhance air circulation and aid in leaf drying. Conduct regular weekly scouting. If late blight is detected in your area, increase your scouting efforts and begin protective fungicide applications. Weather forecasts and pest prediction models, such as those available on the <a href="NEWA website">NEWA website</a> (http://newa.nrcc.cornell.edu/newaDisease/potato\_for), can help optimize fungicide timing and strengthen your disease management strategy.

By taking these proactive steps this fall, you can effectively protect your crops and reduce the risk of late blight as next year's growing season approaches.

## **Fresh Market Crop Notes**

Elizabeth Buck, Cornell Cooperative Extension, Cornell Vegetable Program

#### **COLE CROPS**

Downy mildew and black rot are active. Some recommendations for managing these diseases from Daniel Heck, Cornell's Plant Pathologist stationed on Long Island:

Black Rot in Crucifers and What to do Moving Forward: Black rot is a serious bacterial disease in crucifer crops (broccoli, cauliflower, cabbage, Brussels sprouts). It spreads through infected seeds, water, and tools, especially in warm, wet conditions, causing yellow, V-shaped lesions on leaves that can result in significant yield loss. If you are unsure about the disease infecting your plants, you can reach out to one of the specialists for a diagnosis. To avoid the disease, prioritize using certified disease-free seeds and practicing crop rotation, avoiding planting crucifers in the same field for at least two years. If this option is not practical, incorporating crop residues after harvest speeds up degradation and decreases bacterial survival in the soil. Water management is critical, because bacteria spreads by water splash from soil to leaf, leaf to leaf, and plant to neighboring plants. Drip irrigation would be one of the best strategies to decrease crop losses by this disease. If your production uses an overhead system, avoid irrigating in late afternoon and under strong winds. Whenever possible, regular scouting and removing infected leaves and plants can help reduce the spread, while copper-based bactericides such as Kocide 3000-0 (0.5 lbs/A) or Badge (0.5 lbs/A) may offer some protection when used preventatively. Actigard 50 WG (0.5 oz/A) is labeled for suppression of black rot.

Downy Mildew in Crucifers: Downy mildew (DM) of crucifers is caused by a widespread oomycete pathogen It is a water-mold. It thrives in cool, moist conditions, often appearing in the fall and early spring. The disease typically manifests as yellow, angular lesions on the upper leaf surface, while a white to grayish downy growth appears on the underside of the leaves, particularly during periods of high humidity. Infected leaves may become distorted or drop prematurely, and in severe cases, the disease can affect the quality of heads and florets. DM management also requires good water management. Drip irrigation and early morning overhead irrigation prevents leaf wetness, and consequently decrease disease severity. In addition, avoid overhead irrigation during cool and wet periods. Resistant cultivars are available; however, the many races of the pathogen can often overcome the available resistance. In some cases, cultivars are resistant at early stage, but disease can develop in mature plants, others, can support disease at early stage, but are resistant when mature. Cultivars, such as 'Heritage' for broccoli, or 'Kaitlin' for cabbage can provide partial protection at young stages, but symptoms develop in mature plants without significantly decreasing yield. Fungicides like chlorothalonil, mancozeb, and copper-based products are effective when applied preventively under favorable conditions for disease development. Ranman 400SC (2.75 fl oz/A), Ridomil Gold Bravo (1.5 pts/A), Orondis Ultra (5.5 fl oz/A), Forum (6 fl oz/A) are labeled for DM in most crucifers, and Omega 500F (15.35 fl oz/A) is labeled for DM on cabbage only and will also help to manage Alternaria leaf spot. Always rotate different modes of action to prevent disease resistance.

### **GARLIC**

As we move toward cracking seed and planting, remember that garlic diseases are propagated with the cloves. So, if you have lackadaisical grading criteria during cracking and seed sorting, you are very likely setting yourself up for elevated amounts of fusarium and eriophyid mites and smaller, more poorly performing bulbs in the field.

#### **PEPPERS**

Pepper production is hanging in there well with the warm weather, despite shortening days. Anthracnose is the most common concern in peppers currently and is usually easily managed with group 11 or 3 fungicides.

#### POTATOES

Late blight was reported on potatoes in Niagara County.

#### **WINTER SQUASH & PUMPKINS**

Continuing to see cases of phytophthora blight directly attacking fruit even when vine health remains good. Phytophthora is extremely aggressive against vine crop fruit as they approach maturity and even the best spray program can often struggle to control incidence in fields with known P.cap history. Tips:

- Hold fruit for several days before packing and shipping to allow post-harvest symptoms to develop before you send them to the marketplace.
- All cull fruit should go in the trash or back in their field of origin. Do not introduce it to new areas on your farm via cull piles.
- If you are washing fruit, consider adding a surface sterilizer to your wash water. Make sure it is food grade appropriate if these are fruit for consumption.
- Clean pick and disc your field as soon as possible to reduce the amount of sporulation and population explosion in your soil.
- Wash equipment coming out of the field to avoid transferring phytophthora blight to new areas on your farm.

## NYS Urban Growers Pest Management Needs Assessment Released

Lori Koenick, Cornell Cooperative Extension, Cornell Vegetable Program

As part of a multi-year research project exploring sustainable pest management approaches on urban farms, we conducted a needs assessment with urban growers across New York State. The <u>New York State Urban Growers Pest Management Needs</u>
<u>Assessment</u> presents findings on current pest management practices, challenges, and topics of future interest and is available online at our website: CVP.CCE.CORNELL.EDU.

## **Urban Farms Sustainable Pest Management Fact Sheet Series**

Judson Reid and Lori Koenick, CCE Cornell Vegetable Program, and Sam Anderson, CCE Harvest NY

Cornell Cooperative Extension has partnered with dozens of urban farms across New York State to demonstrate and evaluate sustainable pest management strategies. Together with farmers, we found success using control methods that prevent or reduce crop losses through exclusion strategies, crop timing, host resistance, the introduction of beneficial organisms, and more. Regardless of management strategy used, common requirements for success include a knowledge of the pest and disease complex, preventative deployment and commitment to the process. We've developed a set of fact sheets with case studies highlighting pest management techniques that New York urban farms have found valuable. Summaries of each are below; you can find full text at our website: CVP.CCE. CORNELL.EDU or by clicking on the title of each fact sheet below.

### **Disease Resistant Crop Varieties**

Here we highlight the opportunity to prevent disease from the crop in the first place. For some crop and disease combinations, perhaps the most straightforward method is to select a variety of the crop that has been bred for resistance to the disease. This technique begins before we ever sow a seed! Catalogs will



list information about each variety's disease resistance. When purchasing seeds, choose the varieties with listed resistance to the diseases you're most concerned about. We like to note that disease resistant vegetable varieties are nearly always non-GMO, and often available as untreated or certified organic seed. Selecting resistant varieties is an easy, cheap, and effective strategy to get ahead of plant diseases.

#### **Row Covers**

Here we highlight an exclusionary pest management tool. Keeping pests (particularly insects and mites) away from a young planting gets crops off on the right foot. Urban farmers use row covers and insect nets as barriers, physically preventing pests from reaching their host plant. These covers and nets are typically a temporary tool designed to be put on and taken off during the growing season, often early in crop cycles. It is helpful to do some research on the pest's biology and life cycle to be sure we are keeping the pest out and not in! Remember: Row cover is a protective measure; install it before the pest arrives on the crop. This tool must match crop needs too, such as temperature tolerance and pollination requirements.

### **Releasing Natural Enemies**

Many urban farms use biocontrol strategies such as the introduction of natural enemies to their growing spaces for pest management. Mimicking the natural world, we use good bugs to manage the bad bugs! Many pest species have their own natural enemies that can be purchased and released on the farm. These beneficials, or biological controls, prey upon or parasitize the pests. To be successful growers, we must have knowledge on the right natural enemy to release at the right time and in the right place. In our experience, this approach works best in enclosed systems, such as greenhouses, high tunnels, and under row cover. Biological controls should be applied early in the pest/crop cycle. This is a biological system that requires attention to detail and commitment from the grower. Local cooperative extension and biocontrol suppliers are great places to gather knowledge on biocontrol techniques.

## **Brassica Break**

In this fact sheet, we highlight urban growers' use of time as a pest management tool. Brassicas (also known as crucifers and cole crops) are the most common crop family on urban farms in New York. They are also host to a range of insect pests, including cabbageworms, flea beetles, cabbage aphid, Swede midge, harlequin bug, and cabbage whitefly. A cultural control we're calling "Brassica Break" creates a calendar window at some point during the year when there are no brassicas available to insect pests anywhere on the farm. When you remove the plants, you remove the pests!

This material is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, through the Northeast Sustainable Agriculture Research and Education program under subaward number [LNE21-421 "Sustainable Pest Management for New York Urban Farmers"]. Fall 2024.

## **Upcoming Events**



## New York Farm to School Summit 2024

Please join us at the inaugural <u>NY Farm to School Summit</u>, on November 20-22nd, 2024, at the Syracuse Oncenter. Producer benefits include:

- Exceptional <u>educational content</u>, including a track designed specifically for producers. Come learn how your peers have successfully tapped into school food markets. Workshop sessions include:
  - Harnessing NY's Bounty: (Re)Developing Products with Local Ingredients
  - Producer Panel: Selling to Schools
  - Sustainability in Food Supply Chains & Food Packaging
  - Selling to Schools: Expectations vs. Reality
  - Leveraging Partnerships to Maximize Distribution
  - Aggregating Product to Meet Demand
- 2. Ample opportunities to forge business-to-business connections. Registrations are coming in daily; currently, we have:
  - Over 130 school food departments registered, ranging in size from small rural districts to large urban districts.
  - <u>Food manufacturers</u> that prioritize NY ingredients in their products and are looking for more suppliers.
  - Distribution partners, including food hubs, that focus on the K-12 market.

Producer Scholarships Available! The registration cost is \$160 and is open until November 1st. We are offering NY producers 50% off the registration price, while funds remain. To apply for a producer scholarship, please fill out <a href="this short form">this short form</a>, and we'll send you a discount code.

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VegEdge is the highly regarded newsletter produced by the Cornell Vegetable Program. It provides readers with information on upcoming meetings, pesticide updates, pest management strategies, cultural practices, marketing ideas, and research results from Cornell University and Cornell Cooperative Extension. VegEdge is produced every few weeks, with frequency increasing leading up to and during the growing season.

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