



Ag Connection

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Septoria Brown Spot in Soybean

Septoria brown spot is a foliar disease that can occur on soybeans in Missouri. Generally, this disease occurs in low levels and does not cause significant losses. However, under favorable conditions for disease development, losses can be serious. Septoria brown spot is one of the first diseases to appear each season. It can be differentiated from soybean rust by the lack of pustules within the lesions.

Septoria brown spot is caused by a fungus, *Septoria glycine*. This fungus survives in infested residues left on the soil surface. During periods of wet spring weather, spores produced on the residues are splashed or blown onto the cotyledons and unifoliate leaves on soybean plants where they cause infection. Continuous soybeans are more likely to show damage.

Symptoms of Septoria brown spot are typically mild during the vegetative growth stages and may progress up from the lower leaves during pod fill. Infected young plants have small, purple or brown lesions on the unifoliate leaves. On the later leaves, lesions are small, irregularly shaped, and dark brown, and develop on both leaf surfaces. Adjacent lesions can grow together and form large, irregularly shaped blotches. Infected leaves quickly turn yellow and drop. Although not as common as foliar lesions, stem, petiole, and pod lesions can develop. They are brown and irregularly shaped, and range in size from specks to spots that are ½ inch in diameter. If favorable conditions persist, Septoria brown spot may become widespread.

Warm and rainy weather favors the development of Septoria brown spot. Development usually stops during periods of hot, dry weather but may progress again near plant maturity or when environmental conditions become more favorable. The fungus survives on infected leaf and stem residue. Wind and rain can spread inoculum to healthy plants, where infection occurs. There are not any cultivars developed that are resistant to the fungus that causes Septoria brown spot. Differences in susceptibility may occur among cultivars, but this information is rarely commercially available.

Other legume plants and common weeds are hosts of the fungus. Pathogen survival can be reduced by rotating to a nonhost crop such as alfalfa, corn and small grains. Incorporating infested crop residue into the soil also helps to reduce the pathogen survival.

Foliar fungicides labeled for Septoria brown spot are available, but this option is rarely economical for disease management. Applications made during growth stages R3-R5 may slow the rate of disease development in the middle and upper canopy and protect yield. Applying foliar fungicides earlier may be necessary if conditions are extremely favorable for disease development and symptoms are observed in the upper canopy.

Source: *Dhruba Dhakal, agronomy specialist*

Cover Crops for Vegetable Production

Soil management of vegetable crops takes on added importance because of their high dollar value. Therefore, soil improvement via the use of cover crops is an important management consideration for vegetable growers. Cover crops represent an effective way to improve both the physical and chemical properties of soils dedicated to vegetable production.

A number of questions should be considered before planting cover crops including:

- Is the primary goal of the cover crop to fix nitrogen, suppress weeds or add organic matter to the soil? When will the cover crop be planted (fall, spring or summer) and how long will it take to mature? Does the cover crop chosen need to be able to withstand freezing temperatures?
- How will the cover crop be terminated (e.g., mowing, herbicides, tillage, etc.) so that the field may be planted?
- Will the cover crop seed itself before termination and risk becoming a weed?
- What cash crop will be planted after the cover crop?

Additionally, growers must be aware of the advantages and disadvantages of various types of cover crops. For example, legumes, such as clover, hairy vetch, Austrian winter pea and others do a good job of fixing nitrogen, but they do not leave high amounts of residue or contribute greatly to soil organic matter. However, since most vegetable crops require between 100 and 220 pounds of nitrogen per acre, the use of legumes as cover crops can help supply a substantial portion of nitrogen requirements.

Alternatively, grasses such as cereal rye, Japanese millet and others produce a lot of biomass and build soil organic matter more rapidly, but do not fix nitrogen. Additionally, they can tie up nitrogen in soils due to their high carbon-to-nitrogen ratio. Tillage radish and buckwheat neither fix nitrogen or produce abundant residue. However, each serves a function of its own.

The majority of vegetable growers employ fall-planted cover crops, since most of their available land is occupied during the growing season by vegetables. There are several major considerations for fall-planted cover crops. For example, for larger, transplanted crops such as tomato and pepper, a cover crop that can be terminated and left on the soil for mulch and weed suppression might be the best choice. Alternatively, low residue cover crops such as tillage radish can be planted directly into the following spring, or incorporated into the soil and then planted.

Fall seeding of cover crops most generally occur from mid-August until mid-September, which allows for an adequate time to achieve the maximum amount of growth. Cereal rye can be planted until Thanksgiving. Some simple options like tillage radish are worth trying, especially for growers who have not planted cover crops before. Tillage radish leaves very little if any residue left on the soil.

Oats is another common cover crop used in vegetables systems, it will winter kill and leaves low residue. It often is combined with Austrian winter pea, which is able to fix nitrogen. Hairy vetch is a winter annual that can be planted in the fall and terminated in the spring, using a variety of methods. Cereal rye is a winter annual often used as a companion plant to hairy vetch.

The establishment of a cover crop is just as important as the establishment of a cash crop. Cover crop seed germination will be enhanced through good seed-to-soil contact. This can be accomplished through mechanical preparation of the soil, or through the use of hand tools to help rough up the soil surface. Additionally, it is important to remove or kill weeds before planting cover crops, since cover crops find it difficult to compete with already established weeds. When legumes are used as cover crops, it is important to remember that different legume species might require different bacterial inoculants. Therefore, make sure to purchase the appropriate inoculant for the cover crop being seeded to ensure maximum nitrogen fixation.

Cover crops may be seeded by broadcasting seeds by hand, through the use of a belly seeder, or a fertilizer spreader. Drop seeders/spreaders and powered broadcast spreaders represent another option. In any case, covering the seed will also help to enhance seed germination and establishment. This can be accomplished through the use of tractor tools such as light harrow, cultipacker or a firmer/roller. Growers also might consider spreading a light layer of compost on top of the seeds, if covering the seeds using the above-mentioned options is not possible. Seeds should be watered in well, especially if the soil is dry. In the absence of rain, irrigation should be considered to help seeds germinate.

Managing Cover Crops Profitably is one of the most comprehensive resources on cover crops for use both in row crop production, vegetable production as well as perennial crops. This resource includes tables detailing planting rates, dates and seeding depths. It can be viewed online or downloaded from the internet by going to the following web address: <https://www.sare.org/wp-content/uploads/Managing-Cover-Crops-Profitably.pdf>. Individuals who lack internet

access may obtain a copy by sending a check for \$25.95 payable to SARE Outreach Publications to: SARE Outreach Publications, c/o International Fulfillment Corp., 3570 Bladensburg Road, Brentwood, MD 20722.

Source: *Justin Keay, horticulture specialist*

Local Farmers Market Information

The National Agriculture Statistics Service (NASS) recently released 2020 survey findings on local marketing practices. The purpose of this survey is to produce benchmark data about local food marketing practices. This special study provides data on the marketing of locally and regionally produced agricultural food products.

The results show **over 147,000 U.S. farms produced and sold food locally through direct marketing practices, resulting in \$9.0 billion in revenue in 2020.** While the number of farms selling directly decreased, the dollar value increased. The data covers both fresh and value-added foods, such as meat and cheese.

Many communities have locally grown products offered through roadside stands, wholesale auctions, stores or restaurants, by Community Supported Agriculture (CSAs), or farmers' markets. The reasons people buy local vary, but commonly include: supporting the local economy, a fresher, high quality product with less carbon footprint, knowing the producer and how the food was produced, and the experience or entertainment factor.

University of Missouri Extension and Missouri Department of Agriculture have collaborated since 2016, to deliver timely price data, education, and an updated listing of available markets. From June to October, prices are collected for a large variety of products including fruits, vegetables, honey and meat from farmers' markets then shared anonymously through this site: www.mdafmr.mo.gov. This allows new and existing producers access to current market prices. Another tool to find local foods is the Show Me Food (<https://showmefood.org>), previously called the Missouri Food Finder.

- Brookfield Farmers' Market - Prenger's Parking Lot, 542 S. Main, Brookfield, MO 64628 Thursday 3-6 p.m.
- Columbia Farmers' Market (.org at the Arc) - 1769 W. Ash Street, Columbia, MO 65201 Saturday 8-12; Saturday 9-12; Tuesday 10-1; Thursday 3-6
- Hannibal Central Park Farmers' Market - 450 Broadway Street, Hannibal, MO 63401 Tues. 3-7; Sat. 7:30 -12

- Kirksville Kiwanis Farmers' Market - Elson St. on the Square, Kirksville, MO 63501 Saturday 7-12
- Knox County Farmers' Market - 107 N Fourth Street, Edina, MO 63537 Saturday 7-12
- LaPlata Farmers' Market - East side of Park on City Square, LaPlata, MO 63549 Wednesday 4-7 p.m.
- Louisiana Farmers' Market - Sunset Park, 2002 Georgia Street, Louisiana, Mo 63353 Wednesday 3-6 p.m.
- Marceline City Market—Walsworth Community Center, 124 E Ritchie Avenue, Marceline, MO 64658 Tues 3-6 p.m.
- Mexico Farmers' Market - NE Corner of Mexico Village Square, Corner of E. Monroe & N. Jefferson, Mexico, MO 65265 Saturday 9-1
- Moberly Depot Park Farmers' Market - 101 W. Reed, Moberly, MO 65270 Thursday 3:30-7 p.m.
- Monroe County Farmers' Market - Monroe County Courthouse Lawn, 300 N. Main Street, Paris, MO 65275 Wednesday 12-5
- Palmyra Farmers' Market - Country Butcher Shop on Hwy 61, 524 East Water Street, Palmyra, MO 63461 Wednesday 12-5 p.m.
- Putnam County Farmers' Market - Unionville Square, S 17th Street, Unionville, MO 63565 Saturday 7-11 a.m.
- Schuyler County Farmers' Market - Outlet (Old Modenaire), 811 North Hwy 63, Lancaster, MO 63548 Thursday 4-7 p.m.; Saturday 8-12 p.m.
- Boone County Farmers' Market (.com) - Columbia Mall, Dillard's Parking Lot, 2300 Bernadette Drive, Columbia, MO 65201 Saturday 8-12 p.m.
- Southern Boone Farmers' Market - 106 Maple Street, Ashland, MO 65010 Thursday 3-6 p.m.
- Hallsville Farmers' & Artisans Market - 13101 North Route B, Hallsville, MO 65255 Saturday 9-12
- Orr Street Farmers' Market & Artisan Market - 126 N 10th Street, Columbia, MO 65201 Sunday 9-1

Source: *Darla Campbell, ag business specialist*

Preparing for Missouri Livestock Symposium

The *Missouri Livestock Achievement Award* recognizes an individual or organization demonstrating outstanding achievements and distinguished contributions to the livestock industry. Eligible applicants can be producers of livestock, agribusiness personnel, agency personnel, or agriculture educators in the state of Missouri. Long-time supporters of the Missouri livestock industry will also be considered. For more information and an application visit <https://missourilivestock.com/achievement-award>.

A amateur photo contest is open for Missouri residents.

Send snapshots of Missouri farm life and enter the Missouri Livestock Symposium (MLS) **Cover Photo Contest**. Photographers may submit up to three (3) entries. Entries must show some aspect of agriculture including farm life, farm scenes, and/or livestock. Contest is open to all ages. For details <https://missourilivestock.com>

The MLS will have a trade show. If you are interested setting up a booth, the registration information can be found on the tradeshow link at <https://missourilivestock.com>.

The MLS is a quality educational event and trade show for livestock producers nationwide. The two-day event begins on Friday evening, December 2 with the trade show opening at 4 pm followed by a free beef supper. The evening program begins at 7 pm and will include announcing the Livestock Achievement award recipient and winner of the cover photo contest.

The evening keynote speaker will be Diana Rodgers. Diana speaks internationally about the intersection of optimal human nutrition, regenerative agriculture, and food justice. More recently, her work has focused on shifting the anti-meat narrative. Diana is co-author of *Sacred Cow: The Case for (Better) Meat*, and is the director and producer of the companion film, *Sacred Cow*. Her new initiative, the Global Food Justice Alliance, advocates for the inclusion of animal-sourced foods in dietary policies for a more nutritious, sustainable, and equitable worldwide food system.

The following day will include educational sessions with nationally-known speakers focusing on topics such as beef cattle, horses, sheep, meat goats, stock dogs, forages, and farm management topics. These sessions run throughout the day. At noon, there will be a free Governor's style luncheon hosted by Missouri's finest commodity groups and co-sponsored by Missouri Department of Agriculture.