

NORTHEAST OHIO AGRICULTURE NEWSLETTER

Your Weekly Agriculture Update for
Ashtabula and Trumbull Counties

October 29, 2024



Corn yield contest in Ashtabula County.

In This Issue:

- Black Soybean in Ohio: Addressing Stem, Pod, and Seed Decay
- A Potential Break from the Spooky-Dry Weather
- Lessons to be Learned from Recent Disasters
- Fall Back to the Basics of Grain Marketing
- Plant Diversity Enhances Soil Carbon Retention
- South America Poised to Expand Soybean Acreage, Further Pressuring Soybean Prices

Hello Northeast Ohio Counties!

Other than a brief rain shower this morning (for some), perfect harvest conditions continue for our region. While we need rain for our perennial crops like apples and grapes, you won't hear many grain farmers complain about the weather – unless it's about the dust.

Our pesticide recertification sessions have been scheduled for this fall and winter! See the flyer at the end of the newsletter for upcoming dates that include in-person and online options. Choose a session that fits your schedule best.

Have a safe harvest!

Lee Beers
Trumbull County
Extension Educator

Black Soybean in Ohio: Addressing Stem, Pod, and Seed Decay

By Horacio Lopez-Nicora

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/2024-38/black-soybean-ohio-addressing-stem-pod-and-seed-decay>

Following the aftermath of severe drought and Hurricane Helene, soybean farmers in Ohio have faced considerable challenges with stem, pod, and seed decay, leading to the occurrence of blackened soybeans in certain regions. This article serves as a follow-up to **our previous report**.

Understanding the Impact of Pod and Seed Decay on Soybean. The heavy rains following Hurricane Helene, which came after a severe drought, have created ideal conditions for fungal growth to negatively impact soybeans, especially those planted early (Fig. 1). These fields that matured early, already weakened by drought stress, became more vulnerable to fungal colonization, resulting in stem, pod, and seed decay. This "black soybean" phenomenon has been particularly noted in areas affected by this extreme weather pattern.



Figure 1. The soybean plants in the foreground, which were planted on April 16, 2024, exhibit black discoloration following Hurricane Helene. In contrast, the soybean plants in the background, of the same variety but planted on May 6, 2024, do not show any symptoms.

Key Findings:

1. **Fungal Proliferation:** The substantial rainfall accelerated the growth of fungi responsible for pod and seed decay. The primary pathogens involved are fungi from the Diaporthe/Phomopsis complex, Cercospora, Fusarium, and Alternaria. Alongside other saprophytic fungi, they contribute to the darkened appearance of affected soybean plants (Fig. 2).
2. **Pod and Seed Decay:** Drought-stressed pods are prone to shattering, which exposes seeds to fungal pathogens, leading to prominent decay (Fig. 2). Field areas that experienced higher evapotranspiration during the drought, such as hilltops, show more pronounced darkening, whereas areas with higher humidity, like lower regions, exhibit less discoloration.

3. Germination Challenges: At the Soybean Pathology and Nematology Lab of Ohio State University, a significant reduction in seed germination rates was observed due to fungal infections from "black soybean" compared to healthy-looking soybean plants. Infected seeds not only demonstrate reduced germination potential (Fig. 3) but also decreased storability and weight.

4. If you suspect a soybean disease, send samples to diagnostic labs before plant senescence. Early testing is crucial, as post-maturity colonization by saprophytic organisms, including fungi, complicates accurate diagnosis. For example, mature plants with black discoloration were submitted to the lab. Upon closer examination, the fungus responsible for white mold ([more here](#)) was identified as the primary causal agent, while secondary fungi were found colonizing the plants post-mortem (Fig. 4).

Read more about soybean seed quality ([here](#)) and about pod and stem blight and seed decay ([here](#) and [here](#)).

We are happy to assist with diagnosis. You can send your sample to:

OSU Soybean Pathology and Nematology Lab

Attn: Horacio Lopez-Nicora Ph.D. 110 Kottman Hall 2021 Coffey Rd. Columbus, Ohio 43210 lopez-nicora.1@osu.edu



Figure 2. Impact of fungal infection on soybean pods and seeds. (A) Comparison of a blackened, shattered pod and seeds affected by fungal infection with a healthy pod and its seeds. (B) Close-up view of infected seeds showing surface fungal growth, indicating extensive colonization.

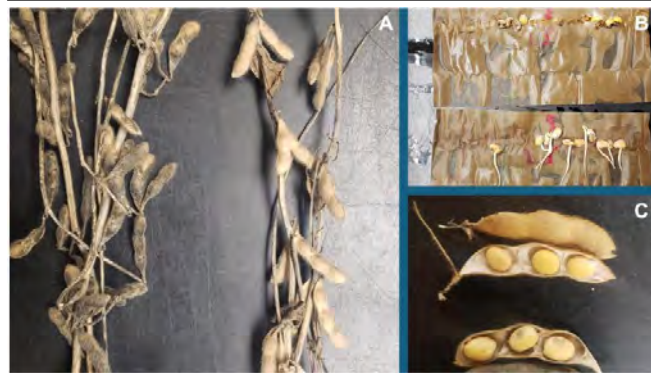


Figure 3. Effects of fungal infection on soybean plants and seeds. (A) Fungal-infected, blackened plant versus healthy plant. (B) Germination: poor viability in seeds from infected plants versus strong germination in healthy seeds. (C) Seeds from infected and healthy pods.

Strategies for Mitigating Pod and Seed Decay: As the 2025 growing season approaches, start by selecting pathogen-free, disease-resistant soybean seeds to enhance crop resilience. Consider the use of fungicide seed treatments to prevent disease transmission from seeds to seedlings. Implement crop rotation with non-host plants to reduce soil-borne pathogen levels and lower future outbreak risks. Integrate pest management (IPM) strategies to control pests like bean leaf beetles and aphids, which can introduce viruses and facilitate fungal infections. These measures collectively strengthen soybean crop health and productivity, though unpredictable weather events, like this year's drought followed by heavy rainfall, can still pose challenges.



Figure 4. Effects of fungal infection on soybean plants and seeds. (A) Fungal-infected, blackened plant versus healthy plant. (B) Germination: poor viability in seeds from infected plants versus strong germination in healthy seeds. (C) Seeds from infected and healthy pods.

Conclusion. Ohio's extreme weather conditions—ranging from severe drought to heavy rains following Hurricane Helene—have posed significant challenges regarding stem, pod, and seed decay in soybean production. Consider how varietal selection and seed treatment decisions made this winter could impact risks for infection in the coming year. By implementing robust management practices and maintaining vigilant monitoring, we can protect our crops, maximize yields, and ensure a more stable future for soybean production.

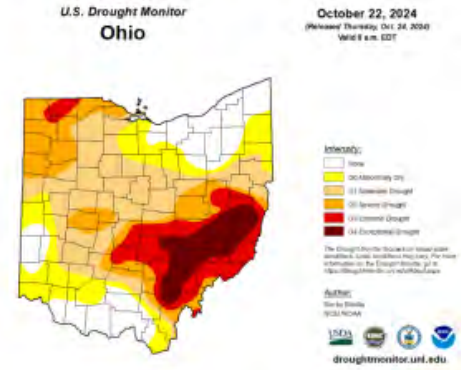
A Potential Break from the Spooky-Dry Weather

By Aaron Wilson

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/2024-38/potential-break-spooky-dry-weather>

Dry conditions have plagued Ohioans throughout the growing season this year, with another below average week of precipitation this past week. Since the remnants of Hurricane Helene moved through in late September, ample precipitation has been hard to come by. Several cities are experiencing one of their driest Octobers on record, including Cincinnati and Mansfield (2nd driest), Dayton (3rd driest), and Athens and Columbus (4th driest). Many of these locations have picked up less than three-tenths of an inch. Warmer than average temperatures this week have also notched the drought stress back up, with numerous reports of field fires in west central and northwest Ohio. Certainly, where drought conditions have persisted the longest in southeast Ohio, crop

yields are generally below average, pastures have been slow to recover, and producers are still hauling water. As of October 22, 2024, the US Drought Monitor still shows about 8% of the state in D4 - exceptional drought with about 65% of the state still experiencing drought conditions (D1-D4).

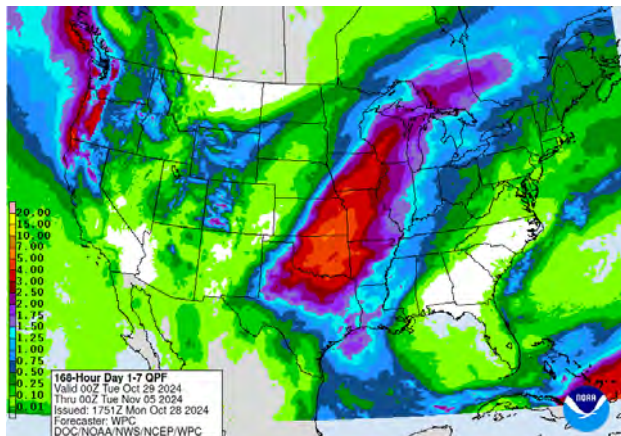


(Figure 1). U.S. Drought Monitor depiction for Ohio as of October 22, 2024. Climate Summary

If you are continuing to experience drought impacts or to document improvements, you can view and/or submit local reports at the Condition Monitoring Observer Reports page. For a more detailed look at conditions and resources, visit our Drought Response Page or for the latest up-to-date conditions, seasonal outlooks, and monthly climate summaries, please visit the State Climate Office of Ohio.

Weather Forecast

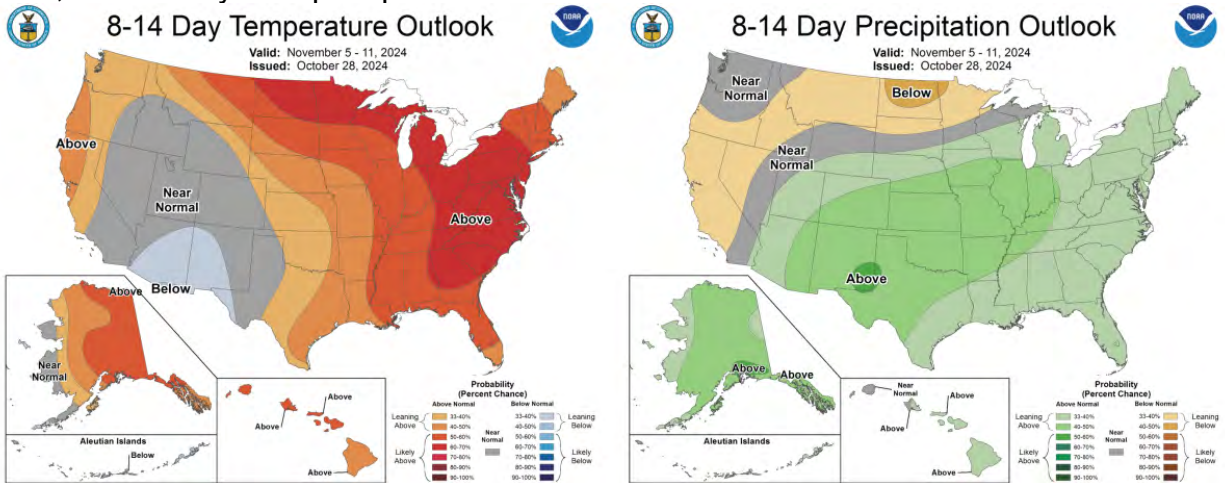
Again we are expecting a big warming trend early this week, followed by an increasing chance of Halloween rain and a weekend cool down. High pressure will remain in control through Wednesday, with strong southerly wind gusts and high temperatures running in the mid 70s to low 80s. With gusty winds and low humidity, fire risk will be elevated. A few daily record highs are at stake as well. A cold front will push through the region on Thursday. Although much heavier rain is expected across the central states, a solid line of showers and storms will drop 0.25-0.50 inches of rain. After brief drying conditions on Saturday, another system could bring rain showers back into Ohio for Sunday and Monday. Temperatures will be much colder over the weekend, with highs in the 50s and 60s and lows in the 30s and 40s. The Weather Prediction Center is currently forecasting 0.25-0.75" of rain this week (Figure 2).



(Figure 2). Precipitation forecast from the Weather Prediction Center for 8pm Monday October 28 – 7pm Monday November 5, 2024.

The 8-14 day outlook from the Climate Prediction Center and the 16-Day Rainfall Outlook from NOAA/NWS/Ohio River Forecast Center show that temperatures are likely to jump back above average with a robust signal toward wetter than average conditions as well (Figure 3). This is not a pattern we have seen in a while but hopefully represents

a step toward long-term drought and soil moisture recovery for the area. Climate averages include a high-temperature range of 56-60°F, a low-temperature range of 38-41°F, and weekly total precipitation of 0.55-0.80”.



(Figure 3) Climate Prediction Center 8-14 Day Outlook valid for November 5 – 11, 2024, for left) temperatures and right) precipitation. Colors represent the probability of below, normal, or above normal conditions.

Lessons to Be Learned from Recent Disasters

By Robert Moore

Source: <https://farmoffice.osu.edu/blog/lessons-be-learned-recent-disasters>

While we never like to see the damage and destruction caused by natural disasters, such as the floods in North Carolina, it can be an opportunity to take stock of our own situation. Disasters remind us of the unpredictability of life and highlight the need to ensure our personal and financial affairs are in order. While you might think that large-scale disasters won't affect your area, people in North Carolina and Tennessee likely felt the same until disaster struck. With that in mind, here are a few key aspects to consider when planning for unforeseen events:



1. Estate Planning Documents. Imagine being injured during a natural disaster, only to discover that your health care power of attorney has been destroyed in the chaos. Without it, your family might struggle to make critical decisions on your behalf. The same applies to financial powers of attorney, wills, and trusts. If

those documents are lost or damaged, your loved ones could face significant legal and financial challenges.

2. To avoid these situations, you should have a copy of your documents in a safe, secure location. One easy solution is to keep a digital copy with your attorney. Most law firms keep their documents digitally on secure servers. If your law firm does not already have a digital copy of your documents, consider asking them to add your documents to their server. If you do not want to have digital copies of your documents, make a paper copy and leave with your attorney or another trusted person.
3. Insurance. Have you reviewed your insurance policy with your insurance agent to access how your policy would address a disaster such as fire, tornado or flood? Some of those affected by the recent flooding never imagined they'd need flood insurance—until it was too late. Be sure to have a discussion with your insurance agent as to what type of disasters are covered and, more importantly, what disasters are not. If your policy lacks coverage for certain disasters, consider adding endorsements to extend your protection. Acting proactively ensures you're not left scrambling when a crisis arises.
4. Business Succession. What would happen to your farming operation if the primary manager were suddenly injured, incapacitated, or unavailable? Having a clear succession plan is essential to ensure the farm continues to operate smoothly in the face of such disruptions. Establish a plan that designates individuals—either from within the operation or externally—who can take over management duties if the primary leader becomes unavailable. Ensure that they are familiar with the day-to-day operations and responsibilities.
5. Also, Make sure that all essential business records are regularly backed up and that copies are stored securely, either digitally or at an offsite location. This is crucial in case the main office is destroyed or inaccessible. Would you know what bills need to be paid in the next 30 days if the office is destroyed in a fire?
6. Contact Information. If your phone was lost or destroyed, would you have the contact information for important people—like family members, employees, advisors, or key vendors? With smartphones storing most of our contacts, many of us only have a few numbers memorized. While you could eventually track down phone numbers, the last thing you want to do during a disaster is scramble to find essential contacts. Create a list of contact information for those you may need to reach in an emergency. Store a copy of this list somewhere outside your home or office, or give it to someone whose number you have memorized. This ensures you can quickly access critical phone numbers and emails when needed most.

While most of us may never experience catastrophic damage from floods, fires, or tornadoes, some of us inevitably will. How prepared are you for the unexpected? Being unprepared only makes a disaster more difficult to manage. Take an hour or two now to develop an emergency plan—this small investment of time will help you respond more quickly and avoid making a challenging situation even worse.

Fall Back to the Basics of Grain Marketing

By Wm. Bruce Clevenger, Field Specialist, Farm Management

Source: <https://u.osu.edu/ohioagmanager/2024/10/28/fall-back-to-the-basics-of-grain-marketing/>

Turning the clocks back in the Fall happens on November 2, 2024. Grain producers and farm managers are also looking at adjustments on the farm to the tightening profit margins projected for 2025. Knowledge and action plans related to grain marketing in the coming year will be important to manage risk.

Registration is now open for the Basics of Grain Marketing Workshop, January 16 & 17, 2025 at the OSU Extension Champaign County Office in Urbana, Ohio. This in-person workshop offers education and farm ready strategies on topics such as: basis, market carry, cash markets, forward and futures contracts, hedge to arrive and basis contracts, differed price, hedging, storage, and overviews on options, spreads, and crop insurance. It's "more than a 2-day workshop", featuring pre-workshop activities on calculating grain cost of production and measure of risk comfort. Workshop content will include workshop content and activities, plus a panel of industry professionals. A post-workshop grain marketing peer group will be offered to strengthen learning into action with webinar updates. The workshop has 50 limited seats.

Expert instructors: Seungki Lee, The Ohio State University, Grant Gardner, University of Kentucky, and Ben Brown, University of Missouri. For more information and registration, visit <https://go.osu.edu/grainmarketing>

This workshop is possible by the support of grower checkoff dollars via the Ohio Soybean Council and Ohio Corn & Wheat. This workshop is led by Ohio State University Extension and the Ohio State University Farm Financial Management & Policy Institute.

Plant diversity enhances soil carbon retention

Source: <https://www.sciencedaily.com/releases/2024/10/241024131822.htm>

A new study shows that increasing plant diversity in agriculture can be used to improve the carbon sequestration potential of agricultural soils. As the agricultural sector strives to reduce its carbon footprint, promoting biodiversity in agricultural practices could be the key to more sustainable and climate-friendly food production systems.

As agricultural expansion and intensive farming practices continues to degrade soils and release carbon into the atmosphere, finding ways to enhance soil carbon storage is critical.

Given that over 40% of the planet's land is used for farming, agroecosystems need to play a major role in climate mitigation strategies.

However, the limited understanding of plant-microbe interactions has so far hindered efforts to maximize soil carbon storage.

A team of researchers led by Luiz Domeignoz-Horta from the University of Zurich has uncovered new insights into how increasing plant diversity in agriculture can significantly improve soil carbon retention.

Barley interplanted with up to eight other plant species

The researchers conducted their study using the TwinWin experiment, located in Finland, which explores how different levels of plant diversity, combined with barley, affect microbial processes in the soil.

Barley was grown either alone or undersown with up to eight different plant species, including nitrogen-fixing and deep-rooting varieties selected for their potential to improve soil health.

As a measure of how effectively microbes convert carbon inputs into new biomass rather than releasing it as CO₂, the researchers measured microbial carbon use efficiency.

By analyzing microbial growth, soil respiration and community dynamics through molecular sequencing and stable isotope tracking, they traced the movement of carbon through the soil microbial communities.

“We found that higher plant diversity fostered stronger positive interactions between microbes in the rhizosphere – the area around plant roots – which ultimately improved the community carbon use efficiency,” explains first author Luiz Domeignoz-Horta.

Plant biomass improves with biodiversity

Notably, plant diversity also increased overall plant biomass production without reducing barley yields, making the practice viable for maintaining crop output while simultaneously improving soil carbon retention.

The findings highlight the critical role that plant diversity plays in influencing microbial physiology in the soil.

Increasing diversity not only promotes healthier, more resilient ecosystems but also offers a sustainable approach to agricultural carbon sequestration.

“The implementation of plant diversity in farming systems is labor-intensive, particularly for small-scale farmers who are the key to sustainability,” concedes Domeignoz-Horta. “Nevertheless, our results suggest that with the right policy support, encouraging diverse crop mixtures could become a key component of ‘carbon farming,’ helping to sequester more carbon in soils while maintaining agricultural productivity. This could pave the way for new climate-resilient farming practices that benefit both the environment and farmers.”

South America Poised to Expand Soybean Acreage, Further Pressuring Soybean Prices

By Joana Colussi, Nick Paulson, and Gary Schnitkey

Source: <https://farmdocdaily.illinois.edu/2024/10/south-america-poised-to-expand-soybean-acreage-further-pressuring-soybean-prices.html>

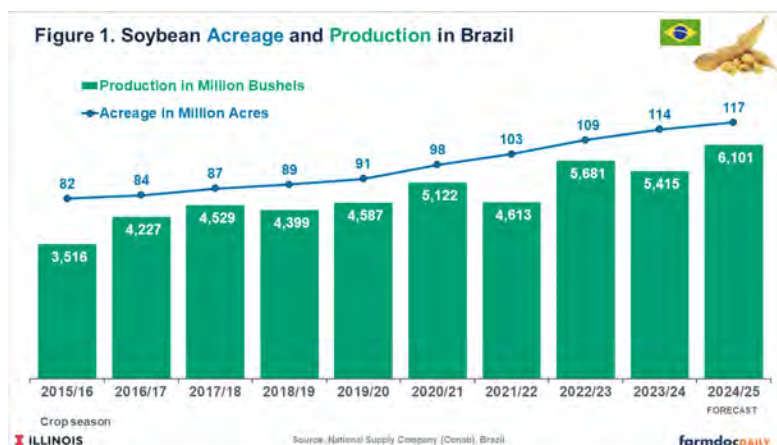
As the U.S. soybean harvest concludes with what are expected to be record yields, South American farmers are advancing the 2024-25 planting season. Argentina may see its largest soybean acreage expansion in over a decade. Brazil’s plantings are also expected to grow, albeit at their slowest pace in ten years. This surge in supply, driven by potential record production in both countries, could further depress international soybean prices in the coming months. This article highlights the latest estimates for the 2023-24 soybean crop in Brazil and Argentina, which together account for 60% of global production, and provides perspectives on international soybean markets.

Brazil Expected to See Slowest Acreage Growth in a Decade

Brazilian soybean acreage is projected to grow by 2.8%, reaching 117 million acres, according to the first estimates for the 2024-25 crop season from the National Supply Company (Conab), the country’s food supply and statistics agency. This marks the slowest growth in a decade, driven by lower profit margins for farmers, which aligns with low farm incomes across all regions of Illinois (see farmdoc daily, ***September 24, 2024***). Despite this, if weather conditions are favorable, the 2024-2025 soybean crop is forecasted to hit a record 6,101 million bushels, a 13% increase over the previous

harvest, when drought reduced production in the Center-West states (see Figure 1). Brazil remains the world's top producer and exporter of soybeans.

Brazilian farmers began planting their 2024-25 soybean crop in the western states around mid-September. After an extended period of very dry conditions, recent rains have allowed farmers to progress with soybean planting. As of October 20, 18% of the expected crop had been planted, 11 percentage points behind the same period last year, according to Conab.



Rainfall helped advance fieldwork in several states, but overall progress remains the slowest for this period since 2020-21, with planting in Mato Grosso, the top grain-producing state, still lagging. As of October 13, only 25% of the expected crop had been planted in Mato Grosso, less than half the rate of the same period last year, according to the Mato Grosso Institute of Agricultural Economics (Imea).

Except for the southern states of Rio Grande do Sul and Santa Catarina, which have received substantial rainfall, most producers in other regions are still waiting for more consistent rains to accelerate planting. Additionally, the National Oceanic and Atmospheric Administration (NOAA) predicts a 60% chance that La Niña will persist from January to March 2025. Typically, under a La Niña weather pattern, northern and central Brazil receive adequate rainfall, while southern Brazil tends to experience drought.

Slow planting progress in the Center-West for the soybean crop increases the likelihood of delays in planting the second corn crop, known as safrinha, which could lead to additional challenges. The safrinha must be planted within a specific window, typically from January to early March, to avoid maturing during the dry season, which begins in mid-April. So far, Conab projects a 3.5% increase in the total corn harvest (including the first, second, and third crops) compared to the last year, with the planted area remaining at 52 million acres. The safrinha corn crop accounts for about 75% of Brazil's total corn production.

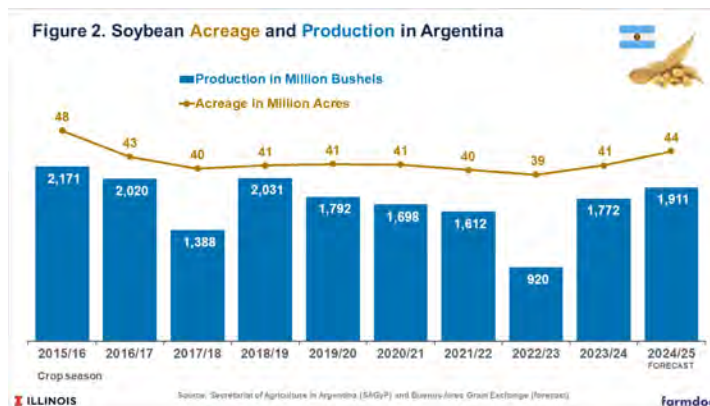
The forecast for soybean exports in the 2024-25 season has been revised upwards to 3,748 million bushels, surpassing the previous season's estimate of 3,638 million bushels (USDA, 2024). This revision is based on increased expectations of abundant supplies and a highly favorable exchange rate. Market expectations indicate that the

Brazilian real will continue trading at around R\$5.5 to USD \$1 in 2025. A weaker real makes Brazil's agricultural commodities highly competitive in international markets.

Argentina Projected Largest Acreage Growth in 8 Years

Argentina's soybean planted area is expected to grow by 7% in the 2024-25 crop season, reaching 44 million acres, according to initial estimates from the Secretariat of Agriculture. This marks the largest expansion in soybean planting since the 2015-16 season. The 2024-25 soybean crop is projected to reach 1,911 million bushels, a slight increase over the previous harvest (see Figure 2). Argentine farmers are expected to allocate more land to soybeans, reducing the area planted with corn by approximately 4 million acres after the previous harvest was severely impacted by corn stunt disease.

Unlike in Brazil, soybeans and corn share the same planting period in Argentina, competing for the same growing area. Last season, corn faced significant losses due to a bacterium spread by the leafhopper pest, which stunts crop growth. Many farmers lost their entire corn crop to the disease, making them particularly cautious this season. In previous years, corn stunt was mainly present in the country's northern region, but the 2024 season marked the first time this disease has affected Argentina's central corn production region (see farmdoc daily, [May 28, 2024](#)).



Soybean planting in Argentina is set to begin in November, with concerns about dry conditions due to the La Niña phenomenon, which typically reduces rainfall in the region. In the last two growing seasons (2021-22 and 2022-23), Argentine farmers dealt with La Niña, resulting in lower-than-normal soybean yields both years (see farmdoc daily, [March 31, 2023](#)). In the 2022-23 season, Argentina experienced one of the worst droughts in its history. As a result, Brazil surpassed Argentina as the leading exporter of soybean meal for the first time in 25 years.

In August, Argentina reclaimed its position as the world's top exporter of soybean meal. The country also leads in soybean oil exports. The Rosario Grain Exchange projects Argentina's soybean crush for 2024 at 42.4 million tons, a 37% increase from the previous year. While the U.S. and Brazil crush much larger volumes of soybeans, this doesn't necessarily mean a stronger presence in the global export market. The key factor is domestic consumption patterns, with both the U.S. and Brazil directing a significant share of their production to meet local demand.

Surge in Supply Likely to Further Depress Prices

The expansion of soybean acreage in Brazil is slowing down, not only due to tighter profit margins but also because of uncertainties in the global market. In Argentina, the increase in soybean planting is largely motivated by concerns over potential corn losses due to the spread of corn stunt disease. The world will be facing record soybean volumes. South America alone is projected to produce 8,745 million bushels of soybeans, according to the United States Department of Agriculture (USDA), which will help push global production to a record 15,736 million bushels.

With global soybean production expected to reach record levels, supplies are likely to increase significantly. The USDA projects that global soybean stocks will hit an all-time high in 2024-25, rising by nearly 808 million bushels compared to the previous year. This surge in supply, also fueled by a record American soybean harvest expected this year, could put further downward pressure on soybean prices.

Except for the U.S. harvest, which is nearly set, the South American crop season is just beginning and will heavily depend on weather conditions. Given the potential impact of La Niña, which typically brings adequate rainfall to northern and central Brazil while causing drought in southern Brazil and Argentina (see farmdoc daily, [May 23, 2022](#)) any production forecast or market analysis at this stage should be approached with caution. In the coming months, attention will need to shift to the Southern Hemisphere.

Pesticide License Expires 2025? Attend the NE Ohio “Earlybird” PAT Session

The Ohio State University, Lake County Extension. Ann Chanon Agriculture and Natural Resources Educator



Save the date! Thursday,
November 7th, 2024

1:00 p.m. to 5:00 p.m.

The Richard L. Martin Learning Center
1981 Blase Nemeth Rd. Painesville,
Ohio 44077

Pesticide Recertification - \$40

Fertilizer Recertification - \$10

Does your Private Pesticide Applicator and/or Fertilizer license expire in 2025? Want to get your PAT credit done early? Want to learn about what new pests and diseases are on the horizon? OSU Extension in NE Ohio will again be offering our “Earlybird” session on November 7, 2024 at the U-Lab 1981 Blase Nemeth Rd. , Painesville, Ohio 44077 Pesticide recertification will be from 1 p.m. to 4 p.m. with fertilizer recertification following at 4 p.m.- 5 p.m. Register by completing the form on the back of this flyer and mailing with payment to OSU Extension Lake County, 105 Main Street Suite B402, Painesville, OH 44077. Please make checks payable to **OSU Extension, Lake County**.



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

<https://lake.osu.edu/home>


CFAES


2025 Northeast Ohio Private Pesticide Applicator Recertification & Fertilizer Applicator Recertification Sessions

Private Pesticide Applicator Recertification:

Does your Private Pesticide Applicator License expire on March 31, 2025? If so, OSU Extension in Northeast Ohio has three face-to-face and two webinar pesticide recertification sessions available for applicators. Each of these sessions will offer 3 credits for pesticide recertification for CORE and all categories (1-7). Private Pesticide Applicators are encouraged to choose a session to attend.

Cost: \$40/Person

Fertilizer Applicator Recertification:

Does your Private or Commercial Fertilizer Applicator Certification expire in 2025? A one-hour session will be held immediately after the pesticide session for those who need to renew their Fertilizer Applicator Certification. **Cost: \$10/Person**

2025 Recertification Programs:

- **Online via Zoom, Thursday, December 5, 2024, 5:00 PM to 9:00 PM**
 - Pesticide starts at 5:00 PM, Fertilizer starts at 8:00 PM
- **Trumbull Co. Extension Office in Cortland, OH – Tues. January 21, 2025, 5:00 PM – 9:00 PM**
 - Pesticide starts at 5:00 PM, Fertilizer starts at 8:00 PM
 - For more information call: 330-638-6783
- **Geauga Co. Extension Office in Burton, OH – Wed. February 12, 2025, 1:00 PM – 5:00 PM**
 - Pesticide starts at 1:00 PM, Fertilizer starts at 4:00 PM
 - For more information call: 440-834-4656
- **Ashtabula Co. Extension Office in Jefferson, OH – Thurs. March 6, 2025, 1:00 PM – 5:00 PM**
 - Pesticide starts at 1:00 PM, Fertilizer starts at 4:00 PM
 - For more information call: 440-576-9008
- **Online via Zoom, Thursday, March 27, 2025, 5:00 PM to 9:00 PM**
 - Pesticide starts at 5:00 PM, Fertilizer starts at 8:00 PM



Register online at go.osu.edu/NEOPATREG or fill out the attached form.



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

CFAES provides research and related educational programs to clientele on a nondiscriminatory basis. For more information, visit cfaesdiversity.osu.edu. For an accessible format of this publication, visit cfaes.osu.edu/accessibility.



OHIO STATE UNIVERSITY EXTENSION TRUMBULL COUNTY

Master Gardener Volunteer Training 2025

Do you enjoy gardening, learning, and helping others in the community? **Become a Trumbull County Master Gardener Volunteer!** You will receive 50 hours of training in vegetables, flowers, trees, shrubs, soil, insects, diseases, and more. In turn, you will get the opportunity to share your knowledge with others by answering questions, collaborating on service projects, and presenting programs. A hybrid class requiring both online and in-person training sessions will be apart of this program.

To apply please follow the link below:

<https://go.osu.edu/tcmgv25>

Application Window: September 1, 2024 - December 1, 2024

Cost: \$250

Contact information: Noelle Barnes barnes.1127@osu.edu or 330-638-6783