

AG NOTES

University of Maryland Extension | Harford County

Hello Harford County!

As we celebrate our nation's 250th anniversary, it is worth taking a moment to reflect on how far American agriculture has come since 1776.

At the time of our nation's founding, nearly 90% of Americans farmed. Most farms were small, diversified operations that relied on family labor, horses or oxen for power, and simple hand tools. Farmers grew a variety of crops and raised livestock primarily to feed their own families, with any surplus sold or traded locally. Yields were modest and weather dictated success or failure.

The difference in productivity and efficiency over the past 250 years is remarkable. Corn, one of America's most important crops, illustrates this transformation well. In the late 1700s, corn yields often averaged only 20 to 30 bushels per acre under favorable conditions. Today, the U.S. national average regularly exceeds 175 bushels per acre, with many Maryland producers eclipsing 250 bushels per acre. Similar gains have occurred across many crops, allowing today's farmers to produce significantly more food using fewer acres and fewer laborers than ever before.

Fast forward 250 years, and fewer than 2% of Americans are directly involved in production agriculture, yet they produce enough food, fiber, and renewable fuel to feed not only our nation but billions of people around the world. Modern agriculture has embraced advances in plant breeding, genetics, precision agriculture,

conservation practices, automation, and data-driven decision making. Farmers now use cutting-edge technology that rivals that of any industry, allowing for improved productivity and resource efficiency.

Despite these incredible technological advances, one thing has remained constant: the resilience and dedication of America's farm families. Agriculture continues to be the backbone of rural America and a cornerstone of our nation's economy and independence. Here in Maryland, farmers remain committed to producing safe, high-quality food while protecting our natural resources for future generations. Many of the conservation practices that define modern agriculture, including cover crops, no-till farming, nutrient management planning, and precision pesticide applications, have their roots right here in Maryland and demonstrate that productivity and environmental stewardship can go hand in hand.

As we celebrate America 250, it is an appropriate time to recognize the generations of farmers whose innovation, perseverance, and hard work have shaped American agriculture. Their legacy reminds us that while the tools and technologies may change, the commitment to feeding our communities, caring for the land, and strengthening rural America remains as strong today, if not more, as it was in 1776.

Until next time,

-Andy

The Extension office is closed on July 3 to celebrate Independence Day

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Understanding New World Screwworm for Maryland Livestock and Horse Owners

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New World screwworm (NWS), *Cochliomyia hominivorax*, is a parasitic blowfly whose larvae feed on the living tissue of warm-blooded animals rather than dead tissue, making it especially destructive compared to other fly species.



Adult NWS fly. Image: USDA

Background

NWS can infest cattle, sheep, goats, horses, swine, pets, wildlife, and, in rare cases, humans. Adult female flies lay eggs in open wounds or natural body openings such as the nose, ears, or navel of newborn animals. After hatching, larvae burrow into living tissue in a screw-like pattern, causing severe injury, secondary infections, and potentially death if untreated.

The United States eradicated NWS in 1966 using the sterile insect technique (SIT), which involves releasing large numbers of sterilized male flies to disrupt reproduction. A localized outbreak in the Florida Keys in 2016 was successfully contained using this same approach along with quarantine and surveillance measures.

In June 2026, NWS was detected again in Texas, prompting renewed concern and control efforts across the southern United States. While there have been no reported cases in Maryland to date, livestock and horse owners should remain vigilant due to animal movement and changing climate conditions that could influence the fly's range.

Biology and Environmental Preferences

NWS is native to tropical and subtropical regions of the Americas, where warm temperatures and high humidity support its life cycle. The fly is not well adapted to prolonged cold conditions, which historically limited its spread into northern regions such as Maryland.

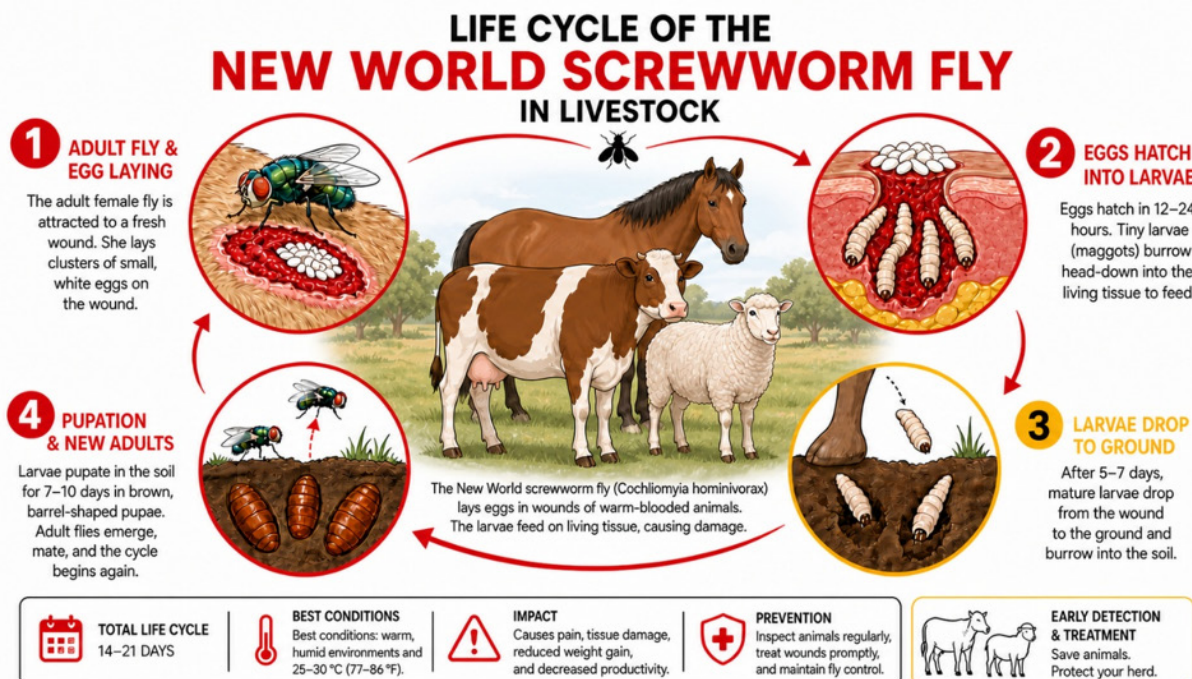
Optimal temperatures for NWS survival and reproduction generally range between 25°C and 30°C (approx. 77°F to 86°F), with high humidity further enhancing egg hatch and larval development. At these temperatures, the life cycle can be completed in as little as 2-3 weeks, allowing populations to grow rapidly under favorable conditions.

Cold temperatures significantly reduce survival; frost and extended periods below 10°C (50°F) can kill larvae and suppress fly activity. However, seasonal warming and milder winters associated with climate variability may increase the potential for temporary establishment in more northern regions.

Lifecycle

Adult female NWS flies are attracted to fresh wounds and moist body openings, where they lay eggs. These eggs hatch within 12-24 hours, and the tiny larvae (maggots) quickly burrow head-down into living tissue. They feed for several days, enlarging the wound and causing severe tissue damage.

NWS is not typically spread through direct contact between animals. Each case begins when a female fly locates a suitable wound for egg-laying. As larvae feed,



Understanding New World Screwworm Continued

they produce odors and fluids that attract additional female screwworm flies, leading to further infestation. After feeding for about a week, mature larvae drop to the ground, burrow into the soil, pupate, and later emerge as adult flies to continue the cycle.

Untreated cuts, dehorning, castration wounds, tick bites, or infected navels in newborns put animals at an increased risk of infestation. Horses are particularly vulnerable when they have skin wounds, surgical sites, or irritated tissue around the sheath, vulva, nostrils, ears, or eyes.

Signs to Watch For

Inspect animals closely for the following warning signs:

- Bloody drainage from a wound or cut.
- White or cream-colored discharge in or around a wound.
- Visible maggots in a wound.
- Wounds that enlarge, deepen, or develop a foul odor instead of healing.
- Pain, irritation, restlessness, fever, or reduced appetite.



NWS infestation on horse's leg.
Photo: Dr. Feliciano Bravo, COPEG



Goat treated for NWS infestation.
Photo: Dr. Feliciano Bravo, COPEG

Prevention Steps

Livestock and horse owners in Maryland can reduce risk by prioritizing wound care and fly control:

- Inspect animals regularly, especially after injury, foaling, calving, lambing, surgery, castration, dehorning, or transport.

- Clean and treat wounds promptly.
- Implement a strong fly control program using approved repellents, traps, and insecticides appropriate for the species and environment.
- Quarantine and inspect new arrivals before introducing them to the herd.
- Monitor newborn animals and any animal with drainage, swelling, or wounds that are not healing properly.

The U.S. Food and Drug Administration's Center for Veterinary Medicine (CVM) is working with animal drug sponsors to identify products for the prevention and treatment of NWS myiasis. An updated list of approved products is available at:
<https://www.fda.gov/animal-veterinary/safety-health/new-world-screwworm-information-veterinarians>

What to Do if You Suspect NWS

NWS has not been detected in Maryland and the probability of it spreading this far north remains low but not impossible. Therefore, livestock owners need to remain vigilant. If you suspect NWS:

- Isolate the affected animal if possible and protect the area from additional flies.
- Contact your veterinarian and the Maryland State Veterinarian (410-841-5810) immediately.

If maggots are present:

- Carefully collect samples using forceps.
- Place the larvae in a vial containing 70% isopropyl alcohol.
- Complete the Parasite Submission Form (VS Form 5-38):
https://www.aphis.usda.gov/sites/default/files/vs_form5_38.pdf
- Submit samples to the Frederick Animal Health Laboratory:
<https://mda.maryland.gov/AnimalHealth/pages/laboratory.aspx>

Prompt reporting is critical. Rapid investigation helps rule out NWS or contain it before it spreads

References available upon request

2026-2027 Cover Crop Sign Up Period Open

Maryland Department of Agriculture

Maryland farmers should head to their local Soil Conservation District office to sign up for the 2026 Cover Crop Grant Program. Sign-up period will be from **June 22 and run through July 17, 2026**. Growers who participated in last year's program should check their mailboxes for an information packet. Additional information is also available on the [MDA's Cover Crop website](#).

Cover crops planted in the fall provide benefits for both Maryland's farmland and the Chesapeake Bay. As they grow, cover crops help prevent erosion, capture and recycle unused nutrients for future crops, and improve overall soil health. They also increase soil organic matter, reduce weed and pest pressure, and help protect fields from extreme weather conditions, including drought and heavy rainfall. By absorbing carbon dioxide from the atmosphere and storing carbon in the soil, cover crops also play an important role in mitigating climate change.

MDA's Cover Crop Program provides Maryland farmers with grants to plant a range of cold-hardy cereal grains and mixes. Fall cover crops can be planted following the harvest of corn, soybeans, sorghum (sorghum/Sudan hybrids), tobacco, vegetables, hemp, sunflowers, sod or millet. While enrolled cover crops may not be harvested, once well-established, may be grazed or chopped for on-farm livestock forage.

The Cover Crop Program is administered by MDA's Conservation Grants Program and the state's 23 soil conservation districts. It is open to Maryland farmers who are in good standing with the Conservation Grants Program and in compliance with Maryland's nutrient management requirements. A completed Current Nutrient Management Plan Certification form is required at sign-up. Other restrictions and conditions may apply. Funding for the 2026-2027 Cover Crop Program is provided by the Chesapeake Bay Restoration Fund and the Chesapeake and Atlantic Coastal Bays Trust Fund.

In addition to our Traditional Cover Crop Program, we are pleased to announce the return of our Cover Crop Plus+ grants for innovative cover crop practitioners who commit to a three-year program. This updated program supports cover cropping scenarios that fall outside of traditional program support. If you're interested in participating, please visit [Cover Crop Plus+ website](#) to learn more about this exciting opportunity.

Dates to Remember

- Plant cereal grains by November 5, 2026
- Plant oats or mixed containing legumes by October 10, 2026
- Aerial seeding deadline if October 10, 2026
- Terminate cover crops between March 1 and June 1,

2026-2027 Cover Crop Planting and Payment Options

Traditional Cover Crop Payment Options	No-Till	Conventional	Broadcast with Light, Medium or Vertical Tillage	Aerial	Broadcast Stalk Chop and Broadcast Cultipacker
Base Payment	\$35/acre	\$35/acre	\$35/acre	\$35/acre	\$35/acre
Incorporate on or before October 10, add:	\$15/acre	\$15/acre	\$15/acre	\$0	\$0
Plant rye, triticale, or multi-species cover crop, add:	\$15/acre	\$15/acre	\$15/acre	\$15/acre	\$15/acre
Maximum Payment	\$65/acre	\$65/acre	\$65/acre	\$50/acre	\$50/acre



Management Practices to Avoid Blossom End Rot

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University of Delaware

Blossom end rot (BER) is a physiological disorder that affects fruiting vegetables, most commonly tomatoes, peppers and summer squash. BER occurs when developing fruits do not have enough calcium to form cell walls and the tissue at the blossom end of the fruit becomes soft and collapses. Secondary rot can occur in the soft tissue and BER affected fruits are unmarketable. Even though BER is caused by calcium deficiency in the fruit, the underlying cause is rarely insufficient calcium in the soil. BER usually develops because the supply of calcium to the fruit has been interrupted by stress to the plant roots (dry soil, waterlogging, root diseases, high soil temperatures), excessive fruit load, high humidity or overfertilization with potassium, magnesium or ammonium forms of nitrogen.

The symptoms of BER don't become visible until fruit enlarges but the deficiency that caused the disorder occurred days or weeks earlier when the fruit was small. Plantings of tomatoes, peppers and squash are often at this susceptible stage during the month of June. As plants reach the point when they have many fruits setting and developing at the same time, competition for calcium within the plant can exacerbate BER. With the dry weather that we are experiencing this year, inadequate or uneven irrigation will put crops at risk of BER.

Understanding how calcium moves through the plant helps to explain why BER can occur even when the soil is not low in calcium. At plant roots, calcium moves into the xylem (water conducting vessels), mostly from the area right behind root tips. In the xylem, calcium moves with the transpirational flow, the movement of water from roots, up the xylem, and out through stomata. Calcium is taken up by the plant as a divalent cation, which means it has a charge of +2. It is attracted to negatively charged areas on the wall of the xylem, and for calcium to move, it must be displaced and exchanged off the xylem wall by other positively charged ions such as magnesium (Mg^{++}), potassium (K^{+}), ammonium (NH_4^{+}), or additional calcium cations (Ca^{++}). For calcium to move through the plant and to the developing fruit there must be continuous movement of water through the plant and a continuous supply of calcium from the soil.

Most soils have sufficient calcium to support plant growth, especially with regular liming to maintain ideal soil pH. However, anything that impacts root activity or effectiveness will limit calcium uptake: dry soils, saturated soils (low oxygen limits root function), compaction, root pathogens, or root insect damage. In hot weather, plants on black plastic mulch can also be affected by high soil

temperatures. Low soil pH can also be a contributing factor. Calcium availability decreases as pH drops, and below a pH of 5.2 free aluminum is released, directly interfering with calcium uptake.

High humidity can exacerbate BER because it slows transpiration, and consequently calcium movement through the plant. Fruits have lower transpiration rates than leaves and are therefore prone to developing localized calcium deficiency.

As a positive ion, there is "competition" for uptake of calcium with other positive ions. Therefore, if potassium, ammonium, or magnesium levels are too high in relation to calcium, they can reduce calcium uptake. To manage this, do not over-fertilize with potassium or magnesium and replace ammonium or urea sources of nitrogen with nitrate sources.

If a planting is deemed at risk of BER, applying additional soluble calcium through irrigation, especially drip systems, can reduce blossom end rot to some degree if applied prior to and through heat events and if irrigation is applied evenly in adequate amounts. Foliar applications are only partially effective when applied to very young developing fruit. Fruits do not absorb much calcium, especially once a waxy layer has developed, and calcium will not move from leaves into the fruit. The rate for foliar calcium applications is 2-4 lbs per acre. Possible sources are calcium chloride at 5-10 lbs per 100 gallons of water per acre, calcium nitrate at the rate of 10-15 lb per 100 gallons per acre, or chelated calcium at the labeled rate.

In summary, to prevent blossom end rot:

- Irrigate regularly so that calcium movement in the plant is not interrupted. Any sign of wilting indicates a likely interruption of calcium flow.
- Manage soil conditions to promote root health and active root growth.
- Apply lime to make sure pH is in the proper range.
- Do not overfertilize with potassium, magnesium, ammonium or urea forms of nitrogen.
- Manage plant spacing and ventilation in high tunnels to reduce humidity in the plant canopy.
- Consider supplemental calcium fertilization before and during susceptible growth stages (fruit set) during heat stress events.

This article is an updated and revised version of past articles by Gordon Johnson.

Federal Disaster Assistance

Maryland Department of Agriculture [press release](#)

On June 26, 2026, the U.S. Department of Agriculture (USDA) issued a Secretarial Disaster Declaration for 43 primary natural disaster area counties and an additional 61 contiguous counties in the Commonwealth of Virginia. Because Maryland shares borders with several of the designated Virginia counties, five Maryland counties—Charles, Frederick, Montgomery, Prince George's and Washington—are now also eligible for disaster assistance through this declaration as contiguous counties.

The USDA issued a Secretarial Disaster Declaration for Maryland on June 15 following a formal request for support submitted by Governor Wes Moore on May 27. Under this declaration Baltimore, Caroline, Carroll, Cecil, Dorchester, Frederick, Howard, Montgomery, Queen Anne's, Somerset, Washington and Wicomico are listed as primary counties, while Allegany, Anne Arundel, Harford, Kent, Prince George's, Talbot and Worcester are listed as contiguous. The Virginia disaster declaration now provides support to Charles County as well.

These Secretarial Disaster Declarations are in response to an early morning freeze that occurred on April 21, 2026 immediately following weeks of unseasonably warm weather that struck perennial crops coming out of winter dormancy. Extensive damage assessments monitored in coordination with the Maryland Farm Bureau confirmed that crop losses heavily exceeded the 30% threshold required for a federal declaration.

In addition to the freeze, Maryland has experienced prolonged drought conditions throughout much of 2026. The latest U.S. Drought Monitor, published on June 25, shows the majority of Maryland counties remain under D2 (Severe Drought) and D3 (Extreme Drought) conditions.

The Secretarial Disaster Declaration unlocks low-interest emergency loans and credit extensions that can help cover production costs, protect jobs and refinance certain debts for eligible producers. Impacted farmers and growers should contact their local FSA office to review eligible disaster assistance programs and begin the application process.

Farm Business Coaching

University of Maryland Extension

Are you a farmer or food entrepreneur? Are you considering launching a new product, applying for a loan or grant, or expanding into a new market? Do you want expert help taking the next step for your business?

Apply today to join the new Maryland Agribusiness Coaching Level 2 program taught by the University of Maryland Extension faculty.

The University of Maryland Extension is opening registration for their FREE, 8-week online Farm Business Coaching Program to help you grow your agricultural business. You can apply to participate either this summer (Jul. 6 through Aug. 28, 2026) or this fall (Sept. 28 through Nov. 20, 2026).

Led by experienced UME faculty, you'll develop a comprehensive business portfolio covering your mission and goals, production plan, financials, marketing, and more. At the end, a professional business consultant will review your plan and provide tailored feedback from a financing perspective.

Get the Coaching Support You Need!

This training is offered at no cost to you, thanks to a grant from AgriProspects, a project of the Extension Foundation and the United States Department of Agriculture.

Apply Today!

<https://go.umd.edu/AgBizCoachingLevel2>



Meet our Summer Interns!

University of Maryland Extension, Harford County

Jonathan VanBuskirk

Hi, I'm Jon! I recently completed my freshman year at the University of Maryland, College Park, where I am studying Environmental Science and Technology with a concentration in Natural Resources Management. Much of my time in high school was spent competing in Envirothon and FFA, experiences that helped develop my interest in agriculture and environmental science.



As a student in the College of Agriculture and Natural Resources, I was introduced to many Extension faculty and programs, which is how I learned about the internship I am currently participating in. My first four weeks with University of Maryland Extension have been both busy and rewarding. I've had the opportunity to attend events at the Wye Research and Education Center, assist with flagging research plots, and help set up and calibrate a weather station at the Harford County Extension Office. I've also worked alongside my mentor to help diagnose plant health issues and have spent time learning about crop diseases affecting local agriculture.

Of course, not every task has been quite as exciting—I've also done my fair share of intern tasks...like folding newsletters. However, with each experience, I come to enjoy the wide variety of things that Extension does, more and more.

So far, my time with Extension has been an excellent learning experience, and I look forward to continuing to learn more about Harford County agriculture and the role Extension plays in helping farmers and educating the public.

Samantha Grinnell-Spiller

Hello everyone! My name is Samantha Grinnell-Spiller, and I am honored to be interning with both Harford and Baltimore County Extension this summer. I graduated from the University of Kentucky this past May with a Bachelor of Science in Equine Science and



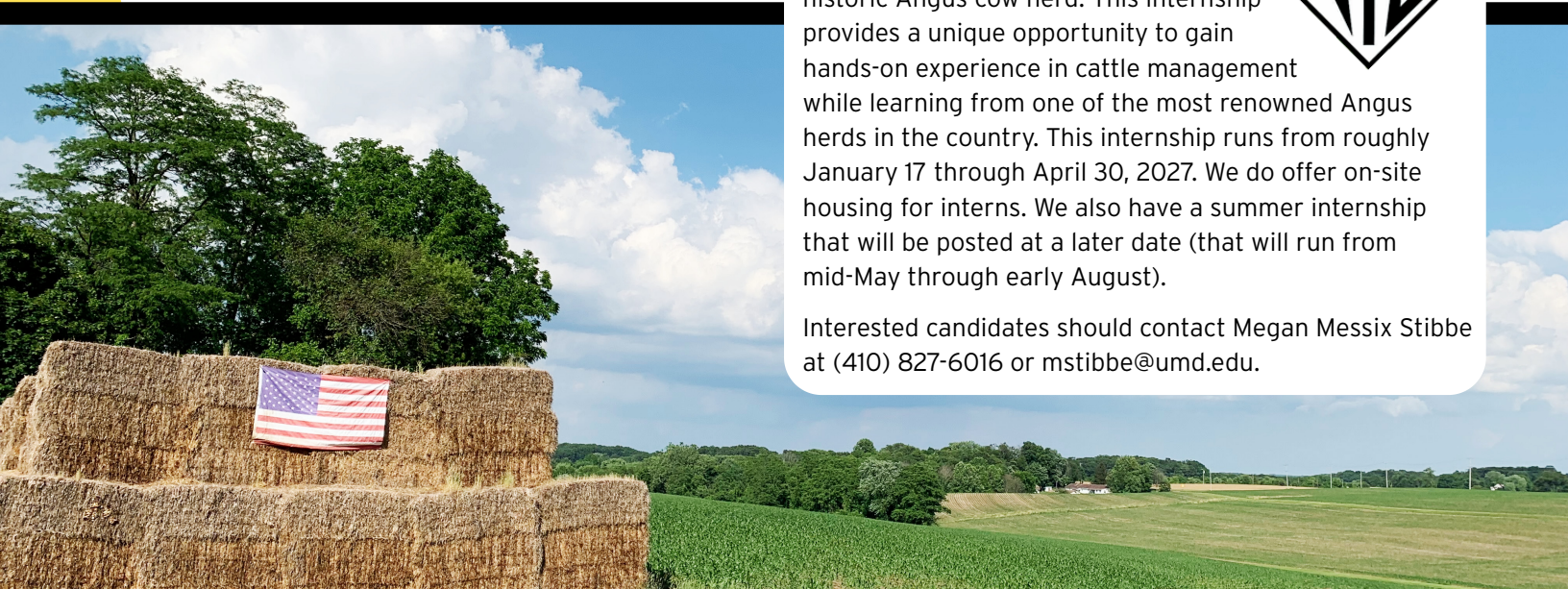
Management and will be attending the University of Tennessee, Knoxville this fall to pursue a master's degree in Agricultural Leadership, Education, and Communication. After completing my graduate studies, I hope to serve as an agricultural educator!

Interning this summer with the University of Maryland Extension has been and will continue to be an important step on that endeavor. I have been blessed to work alongside some truly wonderful people while expanding my knowledge of agricultural education and outreach efforts. Throughout my internship, I have had the opportunity to assist with a variety of projects, one of which I am particularly excited about: an agriculturally focused podcast. Be sure to keep your eye out for its release, listen in, and share with all your friends and family!

Wye Angus Internship Available

Wye Angus is seeking motivated interns to assist with the daily operation of our historic Angus cow herd. This internship provides a unique opportunity to gain hands-on experience in cattle management while learning from one of the most renowned Angus herds in the country. This internship runs from roughly January 17 through April 30, 2027. We do offer on-site housing for interns. We also have a summer internship that will be posted at a later date (that will run from mid-May through early August).

Interested candidates should contact Megan Messix Stibbe at (410) 827-6016 or mstibbe@umd.edu.



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Dates to remember

10 Jul. Identifying & Managing Invasive Plants in Your Woodland. 10:30-4:30 PM. Western MD Research & Education Center, Keedysville, MD. \$15. Register [online](#) or call (301) 226-7566.

15 Jul. Pasture Walk at Maryland Solar Grazing Solutions. 6-8 PM. Hagerstown, MD. Free. Register [online](#) or call (301) 226-7575.

18-25 Jul. Harford County Farm Fair.

23 Jul. Maryland Commodity Classic. 10:30 AM. Queen Anne's County 4-H Park, Centreville, MD. Ticket price varies (\$0-\$20). Register [online](#) or call (443) 262-8491.

23 Jul. Urban Farm Tour & Ice Cream Social. 5-7:30 PM. Anne Arundel County Extension Office, Gambrills, MD. Free. Register [online](#) or call (301) 226-7470.

04 Aug. Field Crops Research Twilight Tour. 4-9 PM. Central MD Research & Education Center, Upper Marlboro, MD. Free. Register [online](#) or call (301) 226-7472.

SAVE THE DATE

Stanton A. Gill SYMPOSIUM: A Focus on Biological Control

August 4 and 5

Central MD Research
and Education Center

Presented by University of Maryland Extension and
Maryland Nursery, Landscape and Greenhouse
Association

Details and registration information will
be posted on www.mnlg.org.

