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Virginia Tech • Virginia State University

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Summer AG Programs

Sara Rutherford

This summer the Agriculture and Natural Resources program partnered with the Small Farm Outreach program at Virginia State University to bring Tammy Holler, a certified nutrient management specialist with Virginia Tech to talk about the importance of soil health. Ms. Holler delivered relevant and timely information for managing soil to improve plant growth and sustainability. Participants had many questions for Ms. Holler. They also increased their knowledge of best management practices for improving soil health. Earlier this summer, Sara spoke at this year's Master Gardener College at Virginia Tech, teaching a floral design class. She also spoke at the National Association of County Agriculture Agents professional improvement conference on the importance of using evaluation tools to improve extension programs.

Pictured below (left to right): Sara Rutherford and floral design participants; Sara Rutherford and conference participants.



WHAT'S THAT WEED?

Sara Rutherford



Pictured above (left to right): Burweed flower/seed head, burweed plant in lawn, immature burweed seeds with spines

Lawn Burweed- *Soliva sessilis*

Because this weed has been prevalent in the past 2-3 years, I wanted to include it again this year.

Lawn burweed usually becomes a problem in late spring when the flower heads set seed and become hard and brittle. The seed heads harm the bare feet of humans and paws of pets. Other names for this weed are spurweed, knawel and sticker weed. Lawn burweed is NOT a grass and must be treated in the fall when it germinates as a winter annual. It germinates where the grass is thin as temperatures cool. It remains small and inconspicuous during the cold winter months. In the spring when temperatures warm, lawn burweed grows rapidly and begins to form spine-tipped burs. The seeds are contained within this hooked bur. This is often the most prominent identifying characteristic.

Overall, the plant gets 3" to 4" tall, has leaves that are approximately (continued on page 4)

Upcoming Programs

September 1- VSU's College of Agriculture Field Day from 8:30am-12:30am at Randolph Farm (4415 River Rd. Petersburg, VA 23803). This is a free event showcasing VSU's vigorous research programs. Check VSU's online calendar <https://www.ext.vsu.edu/calendar> to register.

October 3- Master Gardener Training Info Session at the Greenville/Emporia Extension office from 5:30pm-6:30pm. Details about the 2023 master gardener training course will be discussed and applications will be handed out at this session. Call (434) 348-4223 or email srutherford@vt.edu to pre-register for this session by September 30, 2022.

October 8- Basic Hunter Education Course (youth and adults) at the Greenville/Emporia Extension office from 10:00am to 6:00pm. Students must bring their own bagged lunch. Snacks and drinks will be provided. This is a free program. Please call (434) 348-4223 for registration details. Last day to register is October 7, 2022. Limited to 30 participants.

October 25- Timber Management for Landowners at the Greenville/Emporia Extension Office from 10:00am-12:00pm. Topics include best management practices for forested land and helpful resources for landowners. Please pre-register by calling (434) 348-4223 or emailing srutherford@vt.edu. The registration deadline is October 18, 2022.

October 31- Household Well Water Testing Sample Kit pick-up; November 2- Sample kit drop-off. Sample kits are \$60.00 each and test for 14 parameters such as lead, copper, coliform bacteria and hardness. Pre-register to reserve your sample kit no later than October 24, 2022. A select number of sponsored kits are available for qualifying residents of Greenville, Southampton and Sussex counties until all sponsored kits are spoken for. Call (434) 348-4223 or email srutherford@vt.edu to register.

December 7- Cattle Management in Today's World from 3:00pm-5:00pm at the Greenville/Emporia Extension office. Topics: Extension veterinarian update, hay and forages research & recommendations, grazing management, weed management, preparing for natural disasters, etc. To register, call (434) 348-4223 or email srutherford@vt.edu no later than November 30, 2022.

December 10- Master Gardener Holiday Wreath Workshop at the Greenville/Emporia Extension office from 1:00pm-3:00pm. Make a fresh holiday wreath to take home and enjoy or give to someone else. Wreath base, supplies, fresh greenery and bow included. Call (434) 348-4223 or email srutherford@vt.edu to pre-register by December 2, 2022. Payment is due at time of registration. Space limited to 10 participants.

January 2023- Private Pesticide Applicator Recertification Course. Categories 90 & 91. Date: to be announced.



Cyber Attacks in Agriculture

R. Carneiro et al. (2021) Virginia Tech

The concept of "cybersecurity" emerged from the need to keep technology-based systems, software, programs, and sensitive information shared and/or stored in the virtual space safe from malicious attacks and sabotage. More recently, "cybersecurity" has been integrated with the concept of "biosecurity", which includes the need to protect humans, animals, and plants from biological harms, such as bioterrorism, diseases, outbreaks, and pandemics. The interface of cybersecurity, cyberphysical security, and biosecurity, has been called "cyberbiosecurity".

The first step to protect your farm and small business from a cyber attack is to acknowledge the existence of this potential risk and raise awareness among personnel. Then, it is important to evaluate all the farm's systems and try to identify points of vulnerability. For instance, consider whether there is any critical point that is controlled automatically by an internet-connected system. How and how often do you verify this automatic system is working fine? Now, consider all the confidential and critical information the farm has collected over the years. Where is it stored and who has access to this data?

How easy or difficult is it for external people to have access to this information and perhaps steal it, destroy it, use it, or share it without your permission? Would it be possible to recover this data? What would be the impact of losing this information? Although all risks cannot be completely eliminated, several of them can be significantly reduced and their effects can be mitigated. Depending on how the questions above were answered, it might be important that your farm review or implement standard procedures to prevent, detect, and/or mitigate attacks that can compromise the quality and safety of the farm's end product, as well as the sustainability of your business. Other suggestions that can help protect your farm are as follows.

Provide training for employees; it can significantly reduce human errors. Separate personal, operational, and business devices when possible. Keep important devices (e.g., laptops, smartphones, tablets) safe and do not leave them unlocked. Use strong passwords, change them periodically, and do not share them with others. Use multi-factor authentication when possible. Control access to important areas and do not leave visitors or third-party service providers alone on them. Prefer using paid email services than free ones. Update software and apps regularly. Avoid the use of outdated operating systems, such as Windows 98 and early Linux. Backup critical data regularly, so it can be recovered if needed.

There are several reasons to care about cyberbiosecurity such as business and brand protection; avoid reputational and financial losses. Protect intellectual property, as well as confidential and critical information (data privacy), ensure data integrity, restrict access to important physical spaces, raw materials, supplies, data, and documents. Ensuring availability and proper operation of critical systems, automated equipment, and machinery is paramount.

In summary, make sure you have solid systems and procedures in place to make cybersecurity a top priority for your farm business. For the full publication, visit <https://pubs.ext.vt.edu> and search for publication FST-387NP.

Don't let your guard down: Ticks in Virginia

Theresa Dellinger and Eric Day, Virginia Tech

Don't let the cool, fall-like temperatures fool you, ticks are active through the fall, winter and early spring of Virginia's temperate climate. Multiple species of ticks are commonly found in Virginia, but not all species are found in all areas. Also, not all ticks are infected with pathogens that cause disease. Commonly found in Virginia are the American Dog Tick, the Lonestar Tick and the Deer Tick.

The American Dog Tick measures about 5 mm long and has short, stout mouthparts. It is dark brown with a white shield on the adult female or light wavy lines on the adult male. It is found mostly in the western regions of Virginia and west of the Blue Ridge Mountains. Adults are most commonly found.

The lone star tick measures about 5 mm or less in length. It is light reddish-brown with a small central white spot on the back of the adult females, and several white markings on the back of the adult males. The immature "seed ticks" stages do not have these markings. All stages have reddish-brown legs. The lone star tick can be very common in the Piedmont and Coastal Plain regions of Virginia.

The deer tick, or the blacklegged tick, is a small tick measuring about 2-3 mm in length. The mouthparts are long and the legs are dark colored. The body appears off-white or reddish when fully fed. The deer tick is also known as the blacklegged tick.



A newcomer in Virginia is the Asian Longhorn Tick. Recently found in 2018, it is a smaller tick, measuring 2-3 mm long, with short, squat mouthparts. The body is reddish-brown without any white markings on it.

The US populations reproduce asexually, allowing populations to build up in localized areas. The Asian longhorned tick is largely found in the western half of Virginia, along the Blue Ridge Mountains, and in the northern part of the state and can be detrimental to livestock. More information on this pest of livestock will be discussed during the December 7th, Cattle Management in Today's World program at the Greensville/Emporia Extension office.

The following methods of prevention are recommended by the Virginia Department of Health. Avoid tick infested areas such as tall grass and dense vegetation, walk in the center of trails and avoid brushing against weeds and tall grass. Keep grass and underbrush mowed and thinned. Wear light-colored clothing so ticks can be easily seen. Tuck pant legs into socks so ticks stay on the outside of pants. Conduct tick checks on children and pets every four hours when staying outside. Apply insect repellents containing active ingredients such as DEET, picaridin, oil of eucalyptus, Bio-UD, or IR3535 to exposed skin. Ask your veterinarian to recommend tick controls for your pets. Treat your lawn with an approved pesticide for tick control. Treat clothes with permethrin following all label precautions.

Ticks are best removed with tweezers or by wrapping the tick in a tissue and pulling it out with fingers. Grasp the tick as close as possible to the skin and pull slowly with even pressure to avoid leaving the mouthparts in the wound. Do not twist or jerk as this will leave the mouthparts in the skin. Do not use nail polish, petroleum jelly, alcohol, or hot matches to remove the tick. Wash the wound with an antiseptic after the tick is removed. Kill the tick in rubbing alcohol and keep it in a small vial for a few months in case any disease symptoms develop and the tick needs to be identified.

Dog Tick (*Dermacentor variabilis*)



Lone Star Tick (*Amblyomma americanum*)



Blacklegged Tick (*Ixodes scapularis*)



For more details from this article, visit <https://www.pubs.ext.vt.edu> and search for publication 2906-1396.

Programs & Reminders

VSU's College of Agriculture offers many educational programs, online webinars, Facebook live events, workshops and field days. To find out more, visit: <https://ext.vsu.edu/calendar>

There is a \$50.00 fee for all returned checks.

If you are a person with a disability and desire any assistive devices, services or other accommodations to participate in extension activities, please contact the Greenville- Emporia extension office, (434) 348-4223, during the business hours of 8:00 a.m. and 5:00p.m. to discuss accommodations at least 5 days prior to the event. *TDD number is (800) 828-1120.



The health of your soil is important! Routine soil sampling is encouraged for lawns, ornamental and vegetable gardens, row crops, specialty crops and pastures. Soil sample boxes and forms can be picked up at the Greenville/Emporia extension office Monday through Friday from 8:00am to 5:00pm.

Lawn Burweed, Continued

½ to 1½ inches long and ¼ to ½ inch wide and if left untreated, can quickly take over weak parts of the lawn. To control this weed without herbicides, use cultural control methods, like liming and fertilizing according to soil test results and mowing at the proper height and frequency for your specific grass type. Healthy lawn grasses can outcompete burweed for light, water and nutrients and reduce the level of infestation.

For chemical control after the seeds have germinated in the fall, you must apply a post-emergent herbicide in September or early October. The weed is easier to control when it is small and has not developed its flowers and burs. Control is not impossible in April or May, but by this time, the spines have already formed and will remain after the weed dies. The only solution to combatting this weed is early identification and control.

Note: Read and follow all label instructions when using herbicides. Repeat applications 10 to 14 days apart may be required for acceptable control using post-emergence herbicides. Do not mow within 48 hours after application of most herbicides. Most post-emergence herbicides need to dry on the leaf surface before irrigation or rainfall occurs.

Hand removal of dead lawn spurweed plants and their hooked spur seeds is another cultural control option. It will remove most of the seed source, getting rid of new germinating seeds from the soil surface. To dispose of the dead plants or seeds, gather them in trash bags and take them to a landfill or burn in a safe, designated area. Do not compost or throw plants into the woods edge as re-infestation will most likely occur.

For more information on herbicides to control lawn burweed in residential turf grasses, please see the Home and Garden Information Center's Factsheet, 2323, from Clemson Cooperative Extension. Herbicides must be registered for use in Virginia.

Master Gardener Volunteer Training



The Greenville/Emporia Extension Office will be holding a Master Gardener Volunteer training interest session on Monday, October 3, 2022 at 5:30pm at the Extension office, located at 105 Oak St. Emporia, VA 23847. This will give those interested in taking the training course and becoming a master gardener volunteer the chance to interact with the Greenville/Emporia master gardeners while attending their monthly meeting.

Sara Rutherford, Extension agent and master gardener coordinator, will be present to answer questions you may have and go over the details about the training program. Training is currently set to take place in-person from February 2023 through April 2023. For more information on the Virginia Cooperative Extension Master Gardener Program as a whole, please visit the [VA Cooperative Extension Master Gardener website](#). For inquiries about this info session, or the VA Cooperative Extension Master Gardener Volunteer program, please contact Sara Rutherford; (434) 348-4223; srutherford@vt.edu.

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