Tick Talk
By TJ Savereno
https://blogs.clemson.edu/fnr/2023/10/11/tick-talk/

Anybody who has spent time in the woods or other wild surroundings is familiar with ticks, those blood-sucking arachnids that seek out creatures, including we humans, on which to feed. Most of us also know that ticks are carriers of numerous diseases, the most known being Lyme disease and Rocky Mountain spotted fever. However, many people are unaware of a recently recognized syndrome related to tick bites that can cause serious health conditions, including anaphylaxis and death. This condition is called alpha-gal syndrome (AGS), also known as red-meat allergy or tick bite meat allergy. People who develop this condition show symptoms typically 3-4 hours after eating meat from mammals (beef, pork, venison, mutton, etc.). According to the Centers for Disease Control and Prevention (CDC), symptoms can include:

- Hives or itchy rash
- Nausea or vomiting
- Heartburn or indigestion
- Diarrhea
- Cough, shortness of breath, or difficulty breathing
- Drop in blood pressure
- Swelling of the lips, throat, tongue, or eyelids
- Dizziness or faintness
- Severe stomach pain

Some people with higher sensitivity may also have a reaction after eating milk and milk products or products containing gelatin. Most people who develop AGS had no previous allergic reactions to these products, and the development of the syndrome is sudden. Development of AGS occurs after being bitten by one or more lone star ticks, although other tick species may be involved as well. The exact mechanism by which tick bites cause this syndrome to develop in the human body is not completely understood and is still being studied.

In addition to North America, AGS has been identified in parts of Europe, Australia, Asia, South Africa, and South and Central America. Based on studies of antibody tests, cases in the United States are found predominantly in counties within the southern, Midwestern, and mid-Atlantic U.S.

Not only is AGS not well known by the public, but it appears that it is still poorly known among health care providers (HCPs). A recent survey revealed that 42% of HCPs surveyed had never heard of AGS, and among those who had, fewer than one-third knew how to diagnose the condition (Carpenter et continued on page 2
Tick Talk cont.

al., 2023). Thompson et al. (2023) reported that between 2010 and 2022, there were more than 110,000 suspected cases of alpha-gal syndrome identified. However, because of the lack of awareness and testing, it is estimated that as many as 450,000 people might have been affected by AGS in the United States since 2010.

You may ask why I, a forestry and wildlife Extension Agent, am writing an article about tick disease. In 1996, I suddenly developed an allergic reaction after eating red meat, and to this day, I am still unable to eat the meat of mammals. I was doing a lot more work in the field at the time, and I typically had to pick ticks off myself on a daily basis. However, it wouldn't be until another ten years or so had passed before I started seeing information about a possible link between acquired allergies to red meat and tick bites. That link was confirmed by research in Australia in 2007, but it was not until 2010 that a lab test was developed to make positive diagnoses. Fortunately, I have not developed sensitivity to milk and dairy products, at least not yet. It was not until 2010 that a lab test was developed to make positive diagnoses. Fortunately, I have not developed sensitivity to milk and dairy products, at least not yet. It is still somewhat uncomfortable to explain why I can't eat a red meat product when offered to me at a meeting or a host's home, and I have to be vigilant when eating out and reading food labels.

To find out more about alpha-gal syndrome and other tick-borne conditions, as well as how to protect yourself against tick bites, go to the Centers for Disease Control and Prevention website at https://www.cdc.gov/ticks/.

References:

The Safety Features of a Modern Chainsaw
By Partick Hiesl
https://blogs.clemson.edu/fnr/2023/09/05/the-safety-features-of-a-modern-chainsaw/

Now that the outside temperatures are cooling down, it is a great time to start working on cutting some firewood for next year or cleaning up some of those trees that the summer storms knocked over. Many of you have probably used chainsaws for years or decades and are well-versed in the use of them. But do you know about the safety features of modern chainsaws and whether your chainsaw has them?

Modern chainsaws, meaning chainsaws produced after the mid-1980s, all have four distinct chainsaw safety features (chain brake, inertia brake, throttle trigger lockout, and chain catch pin) that are designed to keep you as the user safe and minimize major injuries. The chain brake (Figure 1) is part of the front handguard in front of the upper handle facing the saw chain. The function is simple, when engaged (pushing the hand guard towards the saw chain), the chain brake will prevent the saw chain from spinning, no matter how hard you pull the throttle trigger. When disengaged (pulling the hand guard towards you away from the saw chain), it will release the saw chain and allow it to spin again. The best way to use the chain brake is to engage it every time you have completed a cut and are ready to take a few steps to the next cutting spot. This will greatly reduce the risk of accidental cuts when moving around. The inertia brake is designed to engage the chain brake when a large rotational force is applied to the chainsaw. This mostly happens in the case of kickback, the fast movement of the chainsaw toward the user when the top corner of the saw chain catches on some branches or other hard material. However, any fast movement that produces a large force will trigger the inertia brake. This is designed to keep the user of the chainsaw safe by stopping the saw chain from spinning and potentially cutting the user.

The throttle trigger lockout (Figure 1) is another safety feature that is designed to keep your right hand out of harm’s way and to ensure a safe grip on the chainsaw. At the back of the chainsaw where the trigger is, you will find that you cannot depress the trigger unless you also depress another little button or tab that is either on top of the rear handle or with many battery-powered chainsaws, on the side of the rear handle. Properly depressing the

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The safety features of a modern chainsaw cont.

lockout button will require you to firmly wrap your right hand around the rear handle. This also provides you with a lot of control when handling the chainsaw. This is an important safety feature, so do not tape the throttle trigger lockout button to the handle or otherwise permanently engage it.

The **chain catch pin** (Figure 1) as the name suggests is a pin at the bottom of the chainsaw near the front of the power head where the saw chain comes into the clutch cover. In case the saw chain comes off the guide bar, the still rotating saw chain will drop and catch on the chain catch pin where most of the energy of the saw chain will be absorbed. After that, the saw chain will likely swing upwards and hit the underside of the rear handle, the rear chain breakage guard, before all energy from the saw chain is expended. All of this happens within a second or so, and while the loud bang of the saw chain hitting the rear handle can be shocking, the combination of the chain catch pin and rear handle will keep you safe and prevent major injuries. Once this happens, your chain catch pin will be damaged and you should replace it to ensure safe working conditions of your chainsaw. Most chain catch pins are secured with one screw to the chainsaw and can easily be replaced by yourself or a service technician.

While not a safety feature to protect yourself, the **spark arrestor** keeps any sparks from the engine exhaust system and muffler contained and as such prevents accidental forest fires. The spark arrestor comes in a variety of different forms but most often you can find a mesh screen over the muffler exhaust openings. Another form of spark arrestor is a metal cover over the muffler with an exhaust opening at the sides. This will catch any sparks coming straight out of the engine and divert the exhaust gases to the side. You can find the spark arrestor and muffler at the front of the chainsaw right above the saw chain and guide bar. It is good practice to periodically check the spark arrestor to make sure that it is not damaged or clogged up with debris or sap.

This was a brief overview of the safety features that exist on modern chainsaws. Make sure all these safety features are in working condition with your chainsaw and replace broken parts before using the chainsaw. For more details on chainsaw safety and handing see the Land-Grant Press by Clemson Extension article by Patrick Hiesl and Janet Steele (https://lgpress.clemson.edu/publication/how-to-stay-safe-around-chainsaws/) and watch out for the next article on chainsaw safety and personal protective equipment in the CU in the Woods newsletter.

![Chainsaw parts diagram](image_url)

Figure 1: Chainsaw safety features and other components of a chainsaw. Photo Credit: Patrick Hiesl, Clemson University. In "How to Stay Safe Around Chainsaws", Land-Grant Press by Clemson Extension, 2022.
Pulpwood Stumpage Trends in Q2, 2023:
In the second quarter of 2023, statewide pine pulpwood stumpage prices averaged $8.89/ton, while the average hardwood rates were $8.54/ton in South Carolina. It is a dramatic decline in pulpwood prices from the first quarter of 2022 when pine and hardwood pulpwood stumpages were above $14/ton.

Sawtimber Stumpage Trends in Q2, 2023:
Unlike pulpwood prices, sawtimber prices for both pine and hardwood were in upward trajectory in this quarter which is a reversal from the trends seen in the last quarter. The statewide pine sawtimber prices were $24.38/ton, while mixed hardwood trees sold at $23.77/ton in the second quarter of 2023. Compared with prices in the last quarter, it is an increase of over 8% for both pine and hardwood trees (see figure below). The average sawtimber prices for both pine and hardwood in the year 2022 (average of all four quarters) were $24.30/ton and $23.60, respectively.

CAUTION: WOOD MARKET IS LOCAL.
Stumpage prices for both sawtimber and pulpwood in your local markets could vary significantly as compared to the above statewide averages depending on: size and species composition, quality of timber, total acres and volume, logging ability, distance from nearby mills, and overall market condition. Managed timber stands with large, straight, and quality trees with clear logs (logs without knots or branches) that could be used for lumber, veneer, or export products generally get higher price. This means, properly managed trees in good health and good quality would likely get more stumpage price than unmanaged trees.

Forest Industry Hot-Spots in South Carolina
South Carolina is one of the top timber harvesting states in the southern U.S. and has one of the highest carbon sequestration rates across the Southeast region. Timber harvesting and logging activities may negatively affect forests’ carbon storage amount, potentially converting them from carbon sinks to sources. Also, do-nothing could be an alternative strategy from a carbon sequestration and storage perspective, but it overlooks the economic and employment benefits of the forestry and forest-products industries.

Timber production and carbon sequestration could sometimes be competitive land use practices requiring forest managers to balance utilization and conservation benefits. Identifying hotspots of timber production and carbon stocks would be useful to balance development and economic activities with climate change mitigation and the carbon sequestration potential of the forests. Implementing forest management practices that increase stand growth rates would accelerate the carbon sequestration rate, while removing old and mature trees would reduce the carbon storage amount for some time.

From the hot-spot analysis of primary and secondary industries in SC, four major counties – Laurens, Union, Dorchester, and Colleton have a higher concentration of primary wood-processing industries. Likewise, four counties – Greenville, Spartanburg, Pickens, and Charleston have a higher concentration of secondary industries in South Carolina. In terms of timber harvesting, three counties – Berkeley, Dorchester, and...
and Georgetown were hotspots of wood removals. Largely, primary forest-industries are established slightly farther away from the city areas with low land value and abundant raw materials. For the secondary industries, proximity to the urban areas is vital for increased market access and reduced transportation costs.

Forested counties with higher diameter classes and hotspots of higher merchantable volume should prioritize timber harvesting over carbon sequestration.

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**English Ivy Control — Basal Bark Treatment Research & Existing Recommendations**

By Stephen Peairs

[https://blogs.clemson.edu/fnr/2023/10/11/english-ivy-control-basal-bark-treatment-research-existing-recommendations/](https://blogs.clemson.edu/fnr/2023/10/11/english-ivy-control-basal-bark-treatment-research-existing-recommendations/)

In numerous urban forest settings and isolated patches of rural forestland, English ivy (*Hedera helix*) persists as either groundcover or aerial vines (different life stages) attached and extending up into the canopy of trees. For some landowners, this plant is a nuisance and can hinder tree growth/development. This article will discuss research observations from current herbicide research (late winter basal bark application) being conducted to control English ivy within the Clemson Experimental Forest. Recommended chemical methods (including foliar applications, cut stump, and stem injection) to deaden the species will also be presented.

**Clemson Forest Research**

A small infestation (~1+ acres in size) of English ivy vines within the experimental forest was utilized to evaluate the effectiveness of the herbicides: aminopyralid (Milestone®) and triclopyr – pyridinloxyacetic acid formulation (Trycera®) as limited literature exists on these two products’ effectiveness on English ivy. The carrier solution in which the herbicides were mixed was also investigated to determine if commercial diesel, methylated seed oil (MSO), or forestry basal oil would individually perform optimally. The addition of a penetrant adjuvant (Cide-Kick2®) to a couple of individual treatments (one for each herbicide) was also tested and evaluated.

1) 2.5% Milestone® + 10% Cide-Kick2® + 87.5% MSO (methylated seed oil)
2) 5% Milestone® + 95% MSO
3) 21% Trycera® + 79% MSO
4) 30% Trycera® + 70% MSO
5) 20% Trycera® + 10% Cide-Kick2® + 70% diesel
6) 30% Trycera® + 70% basal oil
7) 5% Milestone® + 95% diesel

*Milestone® = 21.1% aminopyralid – 2 lbs/gal (a.i.)
Trycera® = 29.4% triclopyr (acid) – 2.87 lbs/gal
Cide-kick II = d’limonene, related isomers, emulsifiers (wetting agent, sticker, activator, and penetrant all in one)

**Study Design**

Ten individual infected trees for each of the seven treatments (10 trees per treatment; 70 total trees) received herbicide applications on March 5, 2023. These trees were marked with either blue (aminopyralid) or orange (triclopyr) fluorescent paint (different markings for each treatment) and numbered with tree tags to aid in area delineation by treatment. Individual vine counts were performed on each tree. The tree number, vine count, and species were recorded. Treatments were evaluated at both 91-days and 122-days post-treatment. The 91-day treatments involved cutting into, but not severing, the stem tissue to determine desiccation (dryness or presence of green tissue). The second evaluation date simply looked at foliage health (either still green or brown/dead). In addition, the crown health

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of treated overstory “host” trees was visually assessed to determine if herbicide had impacted the merchantable trees.

Findings

The initial observation (91-days post-treatment) found minimal (ineffective) control by any of the treatments. Secondary observations (122-days) did find one of the treatments had provided good control, however. Treatment #5 (20% tricera® + 10% Cide-Kick2® + 70% diesel solution) was estimated to deaden <85% of the individual vines. The largest vines appeared to have some degree of live foliage present. Thus, retreatment using cut stem treatment (hack and squirt) is advised for these live residual vines (See Traditional Herbicide Recommendations for English Ivy below).

Other triclopyr treatments also deadened some ivy vines though both were inadequate for management purposes (treatment #4 – approximately 24% of total vines controlled; treatment #6 – approximately 10% controlled). Comparatively however, treatment #3 which only utilized 21% Tricera® in MSO without surfactant did not appear to deaden any treated English ivy vines. Likewise, all aminopyralid treatments were ineffective and did not appear to control any vines.

Overstory trees appears to be unaffected (no visual appearance of crown dieback) amongst treatments. Species composition of all sample trees included loblolly pine and hardwood species (primarily red oak, white oak, and red maple; limited yellow-poplar and gum). One smaller diameter (~7” diameter at breast height) white oak had crown damage, but this could potentially be a result of the ivy vines. Thus, findings suggest that either triclopyr acid or aminopyralid applied to vines around the base of overstory trees will not cause damage/mortality.

There are two recommendations can be derived from this study:

- **Tricera® herbicide can control English ivy when mixed in the proper carrier (if adequately absorbed through the plant’s bark).**

- **the addition of a penetrant surfactant is necessary to ensure suppression of well-established English ivy vines. The surfactant may allow for lower concentration of active ingredient (± 20% triclopyr) to be effective.**

Other important observations are:

1) aminopyralid is ineffective on English ivy regardless of the carrier/penetrant included in the solution.

2) the effective treatments took greater than three months before effects were evident.

Financial Considerations

The estimated cost per gallon of triclopyr/diesel/penetrant solution is approximately $25.56 (based on current chemical costs and diesel at $3.50 per gallon). Assuming each infected tree averages 15 vines per tree, the cost per acre (100 trees) using the same methodology applied in this study, the price per acre equates to $178.92. Labor costs are not included in this estimation. The approximate time to treat 10 trees in the study was 15 minutes and used approximately 70% of one gallon of solution.

Literature Cited


Clemson creative inquiry students assisted with basal bark treatments. Photo credit: Stephen Peairs, Clemson University.
Conservation Burial: Turning Your Haunt into Hallowed Ground
By Amanda Taylor
https://blogs.clemson.edu/fnr/2023/10/23/conservation-burial-turning-your-haunt-into-hallowed-ground/

Land is a legacy, something you pass on to your children and your children's children. Historically, when someone passed away, family members managed all of the affairs, including the care of the body. But somewhere along the way, we lost parlors in our homes, funeral parlors took over, and we were left with just the living room. With rising funeral costs and a desire to conserve land from future development, many Americans are exploring conservation burial.

What is a conservation burial?
It is the ultimate act of conservation. Your body is buried without embalming fluids, in a biodegradable container, with no vault surrounding it. A traditional funeral leaves behind a bigger carbon footprint and is typically more expensive than a conservation burial. You can be buried on your own land this way, or you can be buried in a conservation cemetery, like Ramsey Creek Preserve in Westminster. Your burial makes the property hallowed ground, protecting it from future development.

You might have a lot of questions. Won't these bodies impact our drinking water? Won't a bear or coyote come along and dig me up? Is this even legal? The answers to that are: no, no, and yes!

It is legal in the state of South Carolina for you to be buried on your own property. See South Carolina Code Section 40-8-10 to learn more about the laws surrounding burial.

While we do have viruses and bacteria in our bodies, most become inactive within a few days of our passing. As we break down, our components are filtered through layers of soil and rock before ever reaching surface water. To eliminate this risk, it is common practice to bury human bodies away from bodies of water. When it comes to animals, despite most conservation burials only being three feet deep as opposed to the traditional six feet, wildlife digging up graves is not a common phenomenon. Even those buried without a casket are safe from animal encounters.

How do I do this on my land?
After speaking with Kimberly Campbell from Ramsey Creek Preserve, here are some options that she invites landowners to explore:

1. If you currently have a conservation easement on your property, you could potentially be buried on that land. Contact the organization you have your easement through to see if this is an option.
2. Another option is establishing a private family cemetery. After having your county survey the land that you want to be the burial ground, the assessor's office will officially designate the land as a private family cemetery on your deed. If your land does not stay within the family after a few generations, no worries. Under South Carolina preservation laws, your descendants have a legal right to visit and maintain your grave, even if they don't own the land anymore. Reach out to your county assessor's office for more details.
3. If you don't have a good spot on your land, you can contact a green cemetery near you about your future burial plans. Search "green cemetery" or "conservation cemetery" in your preferred search engine.
4. You could also consider starting your own conservation cemetery. If the land you'd want to use is not under a conservation easement, you can start this as a commercial venture. Providing your community with a beautiful place to lay their loved ones to rest can be a rewarding experience. Look into the business licenses you would need and evaluate your risks and opportunities. Do you have roads in good enough condition for people to access the potential cemetery? Do you have time to do occasional maintenance around the grave sites?

While talking with Kimberly Campbell, she explained that Ramsey Creek Preserve's goal is to maintain the land in its most natural state. Encouraging wildlife and managing protected plants like the Oconee Bell fit into their vision of allowing people to "go wild" when they die. Having a conservation burial is a way to pass on your legacy as a landowner, conservationist, or just plain tree hugger. As South Carolina continues to develop and inflation continues to rise, you may want to consider transforming some of your current haunt into hallowed ground.

Want to learn more about conservation burial? You can check out the Conservation Burial Alliance website or contact a conservation cemetery near you.

County Forestry Associations

Abbeville County
Forest Landowners Association
Contact: Stephen Pohlman
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Aiken County
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Anderson Forestry & Wildlife Association
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Calhoun-Orangeburg
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Want to learn more about conservation burial? You can check out the Conservation Burial Alliance website or contact a conservation cemetery near you.
Several members of our Clemson Extension Forestry and Wildlife Program Team had the opportunity to participate in a portable sawmill training last fall. Team members from left to right include: Jaime Pohlman, TJ Savereno, Ryan Bean, Patrick Hiesl, Matt Burns (Extension Leadership Team), Jeff Fellers, Janet Steele, Cory Heaton, Stephen Pohlman, Derrick Phinney. Photo credit: Kathy Coleman, Clemson Extension.

Contact our Agents:

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https://www.clemson.edu/extension/forestry/resources/newsletter.html

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