

**CARTER COUNTY**  
**AGRICULTURE & NATURAL RESOURCES**  
**NEWSLETTER**



University of Kentucky  
College of Agriculture,  
Food and Environment  
Cooperative Extension Service

Carter County

94 Fairground Drive Grayson, KY 41143

Phone: (606) 474-6686 Fax: (606) 474-8542

[extension.ca.uky.edu](http://extension.ca.uky.edu)

## December 2023 Upcoming Events

\*Denotes events where preregistration is required. Call 474-6686 or email [Rebecca.k@uky.edu](mailto:Rebecca.k@uky.edu) to register.\*

December 5 @ 6:30 PM	<b>Little Sandy Beekeepers</b> —Extension Office
December 12 @ 10:00 AM	<b>District Board Meeting</b> —Extension Office
December 12 @ 8:00 PM	<b>*Online Beef Webinar*</b>
December 13 @ 12:00 PM	<b>*Winter Door Swag Workshop</b> —Extension Office*
December 25-January 1	<b>Extension Office Closed</b>
January 9 @ 10:00 AM	<b>District Board Meeting</b> —Extension Office
January 9 @ 8:00 PM	<b>*Online Beef Webinar*</b>
January 11-12	<b>*KY Cattlemen’s Association Convention—Lexington*</b>
January 18 @ 6:00 PM	<b>*Small Ruminant Quality Assurance Training - Extension Office*</b>
January 23 @ 6:00 PM	<b>Northeast Area Livestock Association</b> —Extension Office
January 30 @ 6:00 PM	<b>No-Till Drill Clinic</b> —Boyd County Fairgrounds

Enjoy your newsletter,

Rebecca Konopka,  
Carter County Extension Agent for Agriculture &  
Natural Resources Education



### Cooperative Extension Service

Agriculture and Natural Resources  
Family and Consumer Sciences  
4-H Youth Development  
Community and Economic Development

### MARTIN-GATTON COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT

Educational programs of Kentucky Cooperative Extension serve all people regardless of economic or social status and will not discriminate on the basis of race, color, ethnic origin, national origin, creed, religion, political belief, sex, sexual orientation, gender identity, gender expression, pregnancy, marital status, genetic information, age, veteran status, physical or mental disability or reprisal or retaliation for prior civil rights activity. Reasonable accommodation of disability may be available with prior notice. Program information may be made available in languages other than English. University of Kentucky, Kentucky State University, U.S. Department of Agriculture, and Kentucky Counties, Cooperating. Lexington, KY 40506



Disabilities  
accommodated  
with prior notification.

## Little Sandy Beekeepers Association



**December 5 @ 6:30 PM**

Speaker: Kenneth Holbrook, KSU Bee Lab

**No meeting in January.**

## UK Beef Webinar Series

Dr. Darrh Bullock, Beef Extension Professor, UK

We will be restarting our UK Beef Webinar Series in December. These sessions are open to any beef producers, but a one-time registration is required. If you have received notices in the past then you are registered and should get the notification, if not, you can register by sending an email with your name and county to [dbullock@uky.edu](mailto:dbullock@uky.edu) with the subject of UK Beef Webinar Registration. The dates and topics are:

*December 12 – Shooting the Bull* – UK Beef Specialists will provide information on a hot topic in the beef industry and answer any questions posed by the attendees.

*January 9 – Prebreeding Vaccination Considerations* – Dr. George Perry, Texas A&M University

*February 13 – What's the Cost of a Cheap Mineral* – Dr. Katie VanValin, University of Kentucky

All webinars start at 8:00 EST. All registered members will receive a Zoom invitation the morning of the presentation with the link and password.



 Cooperative Extension Service



## No-Till Drill Clinic

**Tuesday, Jan. 30 at 6:00 PM**

**Boyd County Extension Fairgrounds Expo Building**

**More details coming soon!**

## Small Ruminant Quality Assurance Trainings

Quality Assurance is knowing that as a small ruminant producer, you have used the best management practices possible in your operation. This includes using proper medications and anthelmintics to assure safe, wholesome products for public consumption, as well as providing your animals with the healthiest and safest environment in which to thrive.

**SRQA training is required for sheep and goat reimbursement in the small animal CAIP investment area.** Training is open to all producers though.

Cost is \$5.

Trainings will be offered on the following dates. Please pre-register. Sessions will be canceled if there are no preregistrations.

⇒ Thursday, January 18<sup>th</sup> from 6:00–7:45 PM

⇒ Wednesday, March 27<sup>th</sup> from 1:30-3:15 PM

Training is also available online at

[www.kysheepandgoat.org/srqa](http://www.kysheepandgoat.org/srqa).



# Winter Door Swag Workshop

WEDNESDAY, DECEMBER 13  
NOON

CARTER COUNTY EXTENSION OFFICE  
SPOTS ARE LIMITED.  
REGISTER BY DECEMBER 7TH.  
COST - \$5



## Beef Quality & Care Assurance Trainings

The Beef Quality & Care Assurance (BQCA) Program's mission is to maximize consumer confidence in and acceptance of beef by focusing the producer's attention to daily production practices that influence the safety, wholesomeness and quality of beef and beef products through the use of science, research and education initiatives.

***BQCA training is required for cattle reimbursement in the large animal CAIP investment area.*** Training is open to all producers though.

Cost is \$5. Farm gate signs are an additional \$5.

Trainings will be offered on the following dates. Please preregister. Sessions will be canceled if there are no preregistrations.

- ⇒ Monday, February 12<sup>th</sup> from 6:00–7:45 PM
- ⇒ Wednesday, March 6<sup>th</sup> from 1:30-3:15 PM

Training is also available online at [kybeefnetwork.com](http://kybeefnetwork.com).



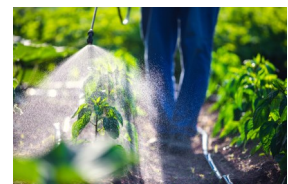
## Private Pesticide Applicator Trainings

This training is required for those wishing to purchase and apply restricted use pesticides. A valid ID is required for training.

There is no cost for attending the training.

Please preregister. Sessions will be cancelled if there are no pre-registrations.

- ⇒ Thursday, February 1<sup>st</sup> from 1:00-4:00 PM
- ⇒ Thursday, March 14<sup>th</sup> from 5:30-8:30 PM



## Spotted Lanternfly Has Arrived in Kentucky

By Jonathan L. Larson, Entomology Extension Specialist

The spotted lanternfly (aka SLF) is the newest invasive species that has found its way to the Bluegrass State. In early October, a homeowner in Gallatin County noticed the adult form of this insect on their property and worked with their local county Extension agent to submit photos to [reportapest@uky.edu](mailto:reportapest@uky.edu). Thanks to this, the Kentucky Office of the State Entomologist was able to visit the site and collect specimens to submit for federal confirmation, officially certifying an infestation. Thus far, no other county has reported lanternflies. As with all invasive species, the spotted lanternfly causes trouble in the areas that they move in to, and Kentuckians should expect to see this pest more frequently in the coming years.

*What is the Spotted Lanternfly?* - SLF is very distinctive in appearance.; the adult is about an inch long, with strikingly patterned forewings that mixes spots with stripes. The back wings are contrasting red, black, and white. The immature stages are black with white spots and develop red patches as they age. They are a type of planthopper; they are capable of jumping and can be quite fast.

Spotted lanternflies develop through a process called incomplete metamorphosis. This means that the female lays eggs, which will hatch to reveal “nymphs,” immature insects that vaguely resemble the adult. They gradually get larger during the growing season, eventually developing their wings and becoming adults. SLF starts off black with white dots, and then before becoming adults, develop red markings.

*How did it get to Kentucky?* - The spotted lanternfly is a non-native insect that is from East Asia. The first confirmed infestations were found in Pennsylvania in 2014. Following that discovery, the pest has steadily made progress in infesting other states, such as New Jersey, Ohio, Delaware, New York, Connecticut, Maryland, and West Virginia. In 2021, an infestation was confirmed in Switzerland County, Indiana (directly across the Ohio River from Gallatin County, Kentucky). Further movement in Indiana has been confirmed in 2022 and 2023. In 2022, there was also confirmation of SLF in Cincinnati, OH, with the problem growing in 2023.

In late summer of this year, sites of SLF were con-



Figure 1: Adult spotted lanternflies are distinct looking insects; their fore wings are half spotted and half reticulated, while the back wings are a mixture of black, white, and red. On the left, the wings are open and showing all of the color; on the right is how the insect is most likely to be encountered– with the wings closed over its back (Photos: Pennsylvania Department of Agriculture, Bugwood.org).

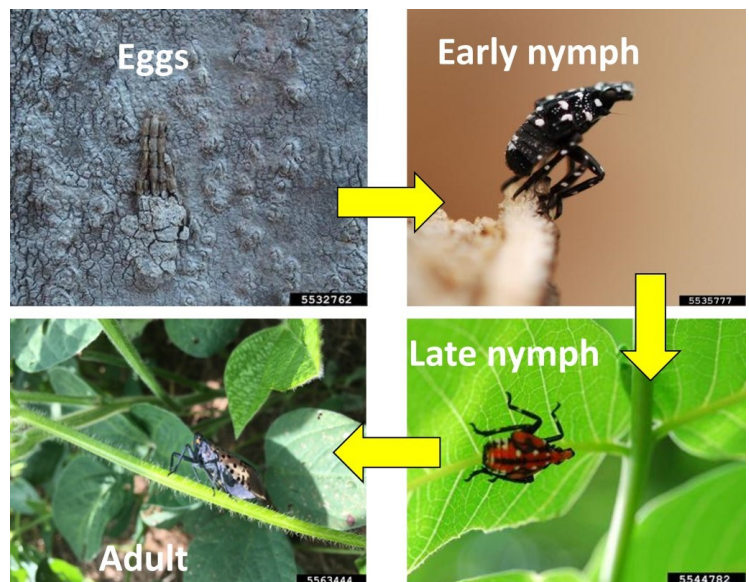


Figure 2: Spotted lanternflies start as eggs, which look like they are covered with brown-grey spackle, and then they develop through spotted nymphal stages before maturing into the adult form (Photos by Lawrence Barringer, Pennsylvania Department of Agriculture, Bugwood.org).

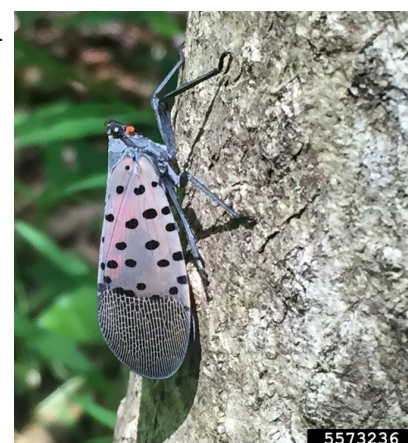


Figure 3: Spotted lanternflies feed on tender growth as nymphs before moving on to feed on the trunk and branches of trees as these bugs get larger and stronger (Photo by Emelie Swackhamer, Penn State University, Bugwood.org).

firmed in Illinois and Tennessee, as well. Just when it seemed that the insect might be in every state that touches Kentucky (but not actually in Kentucky), the local infestation was also discovered. Thus far, the number of insects discovered in Kentucky doesn't rival the infestations you might see images of online or in news reports from states in New England. It is possible that the Gallatin County population arrived via natural movement from Indiana. SLF can jump and fly, and their natural spread can take them 3 to 4 miles from an infested site in a given year. It is also possible that they were accidentally brought into the state on infested goods or on a car, truck, or other means of transport.

*What does it do?* - This pest is known to feed on more than 70 plant species, including specialty crops like grapes, apples, peaches, and hops, as well as trees such as maple and black walnut amongst other hardwoods, and fruit crops. Their preferred host for a portion of their life cycle is the tree of heaven (another non-native/invasive species). SLF is classified as a true bug, part of the order Hemiptera. They feed using piercing sucking mouthparts. As they feed, they excrete honeydew, a sugary fecal material that accumulates on nearby plants and surfaces and can attract black sooty mold fungi. Honeydew can also be slippery for people and unfortunately can attract stinging insects looking to feed on it. Another unique problem is that beekeepers near SLF infestations report that their bees will forage so heavily on the honeydew that they end up with honey made from SLF fecal material rather than nectar.

Finally, females lay their eggs on natural and unnatural surfaces alike. Eggs are being laid right now as autumn settles in, and they will overwinter in that stage. While they use trees, the cryptic and hard-to-see egg cases have also been found on automobiles, trains, lawn furniture, firewood, stones, and many other substrates. It's possible that Kentuckians who travel to Gallatin County or to Cincinnati, OH could pick up hitchhiking female lanternflies that will come back to uninfested parts of Kentucky and lay eggs there.

*What can people do to help?* - Kentuckians should be on the lookout for this pest. Report suspicious looking bugs and egg cases to the Office of the State Entomologist at [reportapest@uky.edu](mailto:reportapest@uky.edu). When making a report, please include an image or a sample of the suspect, otherwise it will be difficult to confirm the problem. It is also important to include geographic information. It is true that this is a difficult pest to eliminate, but with the help of citizens monitoring for populations, there is hope that their spread can be slowed to allow communities more time to prepare.

Figure 6: While the SLF is a unique looking insect, there are some other species that can be mistaken for it at a quick glance. These are just a few that have been submitted to the University of Kentucky over the last year (Photo: UK Department of Entomology).



Figure 4: A mass of spotted lanternfly eggs has been laid on this vehicle. The eggs will hatch the following spring if not removed (Photo courtesy of WPMT Fox 43).




Figure 5: Be on the lookout for the weird looking adults and for the egg masses spackled onto surfaces, as seen here. Don't bring home any unwanted hitchhikers and help us by reporting odd sightings! (Photo by Richard Gardner, Bugwood.org)


## Spotted lanternfly lookalikes

**While SLF is unique looking, there are some insects that resemble it!**


Some moth species have similar looking under-wings. They will be fuzzy and lack the other designs SLF has.



Ornate bella moth




White lined sphinx moth




Pink underwing moth


Other insects may have spots or stripes but not quite the same mixture as the SLF.




Harlequin bug



Boxelder bug



Large milkweed bug



Leopard moth

# Crop Rotation – Soil Health Gift That Keeps on Giving

By: Dr. John Grove, UK Agronomy/Soils Research & Extension

One basic soil health concept is that of plant diversity – a diversity of plant species grown in your fields will benefit soil health. Crop rotation is a well applied example of that soil health concept. The impacts of crop rotation on weeds, diseases and insects are numerous and help to explain how rotation raises yield of corn and soybean. I remember that in the 1980s, Johnsongrass control in soy-bean benefited the following corn crop. Take-all disease has long prevented growing wheat after wheat. Soybean cyst nematode reduces our ability to grow soybean after soybean. Corn rootworm can hinder continuous corn production.

When changes in weed, disease and insect pressure don't explain the 'rotation effect', changes in soil chemical (pH), physical (aggregation/tilth), and fertility (available N, P and S) properties are often talked about. But the 'rotation effect' can occur in the absence of all the previously described causes/mechanisms – this means that the effect is probably due to differences in soil microbiology that are induced by rotation versus monocrop cultivation. The differences in soil microbiology associated with this phenomenon are not well understood, but a buildup in mycorrhizal fungi is suspected by some researchers (Johnson et al., 1992; Hendrix et al., 1995).

What does this mean in Kentucky? Before I came to Princeton, I used to manage (Dr. Hanna Poffenbarger has that pleasure now) a grain crop rotation research trial at the Spindletop research farm near Lexington. Besides continuous corn, continuous soybean, and the 2-year corn-wheat/double crop soybean rotation, there was a 4-year corn-corn-soybean-soybean rotation. All crop rotation components were grown every year. I'm going to use those yield results to illustrate some long-term observations.

Corn benefits a great deal from rotation. Figure 1 illustrates the 'rotation effect' in the context of corn grain yield response to fertilizer N. In this figure, three corn rotation components are shown: 1st year corn after 2 years of soybean, 2nd year corn after 1 year of corn and 2 years of soybean, and continuous corn. Corn yield rises and then levels off as the N rate rises. The 'rotation effect' is shown at the far-right side of Figure 1, where 1st year corn exhibited greater maximum yield potential (203 bu/acre) than 2nd year corn (193 bu/acre) and continuous corn (191 bu/acre). Interestingly, the larger por-

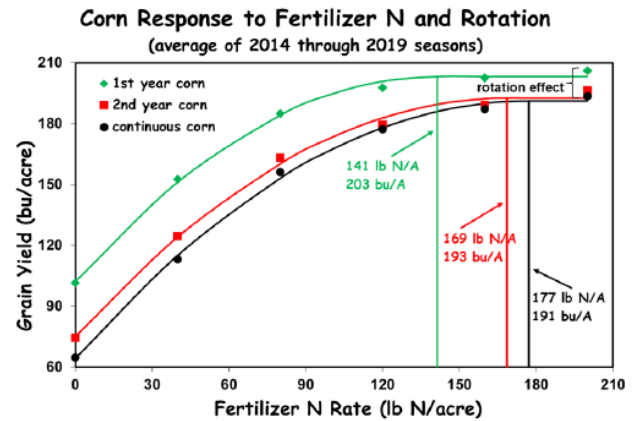


Figure 1. Corn grain yield response to fertilizer N rate and crop rotation. 2014-2019 Lexington, KY

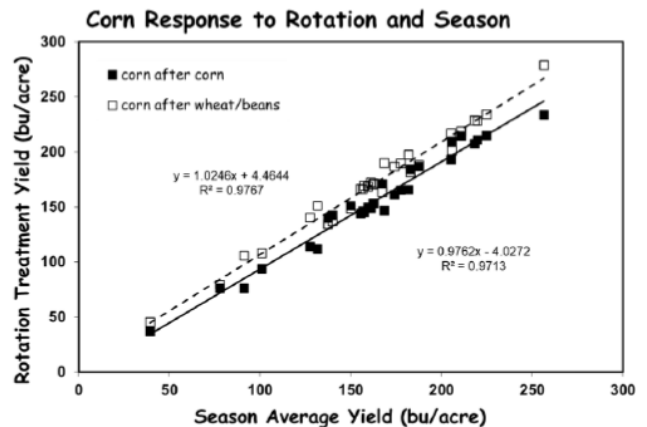


Figure 2. Corn grain yield response to season/production year and crop rotation. 2014-2019 Lexington, KY .

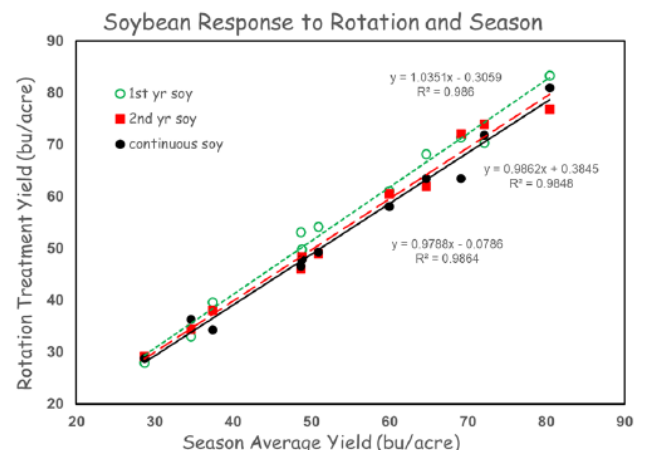


Figure 3. Soybean grain yield response to season/production year and crop rotation. 2014-2019 Lexington, KY.

tion of the 'rotation effect' was lost with 2nd year corn, whose maximum yield potential was not very different from that for continuous corn. And as noted by many, more fertilizer N was needed to achieve maximum yield in the corn after corn systems; 141, 169 and 177 lb N/acre for the 1st year, 2nd year and continuous corn, respectively. That said, the greater corn after corn fertilizer N requirement did not overcome the 'rotation effect'.

In this long-term field study, the continuous corn and corn-wheat/double crop soybean systems have been around for the longest time, over 25 years. Corn yields in each of these systems, as related to the seasonal/yearly average yield in the trial, are shown in Figure 2. The negative impact of continuous corn was generally apparent across all seasons – good, average, and bad – though not all. There were years where continuous corn outyielded corn after wheat/double crop soybean. The impact was greater in the better seasons. In a 50 bu/acre season the yield loss is nearly 11 bu/acre. In a 250 bu/acre season the yield loss is around 21 bu/acre.

For those of you considering an expansion in soybean acres next spring - full season soybean is not immune to the 'rotation effect'. Figure 3 exhibits the 1st year, 2nd year, and continuous full season soybean yield as related to the seasonal/yearly average yield for the 11 years that all 3 rotation components were present. This long-term field study area does not have soybean cyst nematode (I regularly took soil samples for cyst nematode detection). Again, there were some years when soybean after soybean outyielded soybean after corn. However, the general yield trends indicate that soybean after soybean yield potential was inferior to that for soybean after corn and that the rotation effect was larger with a greater seasonal yield potential. Again, 2nd year soybean yield potential was not very different from that for continuous soybean.

The 'rotation effect' is one of the earliest known manifestations of soil health – reported in ancient Roman agricultural texts. Most of us understand the benefits of crop rotation without knowing exactly how/why the 'rotation effect' occurs. The 'rotation effect' is derived from the soil, likely a change in soil microbiology brought on by changing the crop species production sequence and thereby improving soil health and increasing grain crop productivity. Most grain producers are promoting soil health every production season.

Hendrix, J.W, B.Z. Guo, and Z.-Q. An. 1995. Divergence of mycorrhizal fungal communities in crop production systems. *In* The Significance and Regulation of Soil Biodiversity. Eds. H.P. Collins, G.P. Robertson, and M.J. Klug. pp. 131-140. Kluwer Academic. The Netherlands.

Johnson, N.C., P.J. Copeland, R.K. Crookston, and F.L. Pflieger. 1992. Mycorrhizae: Possible explanation for yield decline with continuous corn and soybean. *Agron. J.* 387-390.



## Winterizing Horse Tack

- Most horse owners are not as actively riding in the winter months, thinking about winterizing your tack can help to prolong your equipment.
- Place all saddles, bridles, general tack, etc. in a dry place for the winter away from the elements.
- Oiling any leather before storing away will help to prolong the longevity of your more valuable pieces of tack.
- One idea would be to store away in some rubber totes and cover with a lid; this will provide you with winter care protection and keep everything all in one place.



PRESORTED  
STANDARD  
US POSTAGE PAID  
GRAYSON, KY  
PERMIT #94

Carter County  
94 Fairground Drive  
Grayson, KY 41143

RETURN SERVICE REQUESTED

## DECEMBER 2023

# CARTER COUNTY AGRICULTURE & NATURAL RESOURCES NEWSLETTER

### WHAT'S INSIDE:

Upcoming Events	Pg 1
Beekeepers Meeting	Pg 2
Beef Webinars	Pg 2
No-Till Drill Clinic	Pg 2
Small Ruminant Quality Care	Pg 2
Winter Door Swag Workshop	Pg 3
Beef Quality Care & Assurance	Pg 3
Private Pesticide Applicators	Pg 3
Spotted Lanternfly	Pg 4-5
Crop Rotation	Pg 6-7
Winterizing Horse Tack	Pg 7

