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

Cooperative Extension Service
Clinton County
2601 Business 127 N.
Albany, KY 42602-9813
(606) 387-5404

Inside This Issue:

Upcoming Events in Agriculture:

Clinton County Fair.....June 18th - 25th Fairgrounds
CAIP cost-share Applications available .....June 24th CC EXT. Office
CAIP cost-share Applications Due by 4:00pm.....July 15th CC EXT. Office
Twin Lakes Cattle Assoc. Mtg.....July 26th TBA
Kentucky State Fair.....Aug. 18th - 28th Louisville, KY

Summer has definitely arrived, crops up to this point are looking great, Spring hay harvest was better than expected given the cooler temperatures early. I have included some information on poison hemlock identification and control measures that can help limit the spread of this weed into pastures and hay fields. The local CAIP cost-share program will begin on June 24th. Producers can pick up applications at the Extension office from June 24th-July 15th, the deadline to turn in applications is Friday July 15th. As a reminder producers will need to have an updated Ag Water Quality plan prior to submitting your CAIP application, call the Clinton Co. Soil Conservation Office at 606-387-5976 or the Clinton Co. Extension Office for assistance in completing your KY Ag water quality plans.

Colby Guffey
Clinton County Agent for Agriculture and Natural Resources

KADF
KENTUCKY AGRICULTURAL DEVELOPMENT FUND
Sponsored by: Twin Lakes Cattleman's Association

Clinton County Extension Office
2601 N. Hwy 127
Albany, KY 42602
606-387-5404
or
606-688-4492

Visit https://kyagr.com/agpolicy for more details or directions.

COUNTY AGRICULTURAL INVESTMENT PROGRAM (CAIP)

Applications will be available for Clinton County's CAIP to assist farmers in making important on-farm investments.

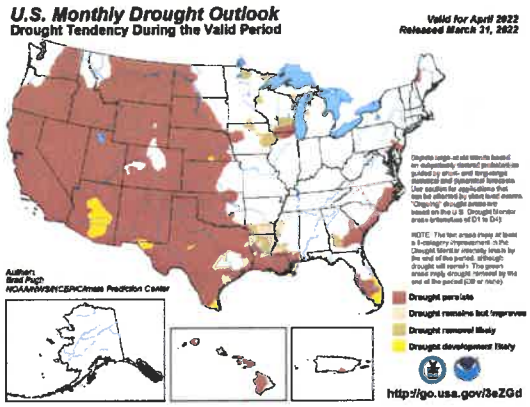
Application Period:
Friday, June 24 - July 15, 2022
No applications will be accepted after 4:00 p.m. on July 15, 2022

Application Availability:
Clinton County Extension Office
Monday - Friday (8:00 a.m. - 4:00 p.m.)
(Office closed July 4)

For more Information:
Contact Steve Peddicord at 606-688-4492 or email speddicord@windstream.net
No applications will be mailed.

All applications are scored based on the scoring criteria set by the Kentucky Agricultural Development Board.

Be Mindful of Heat Stress to Maintain Stocker Calf Gains



Dr. Jeff Lehmkuhler, University of Kentucky, Department of Animal & Food Sciences

As I am writing this, bluegrass has flowered, and I've seen fescue plants with flowers emerging. This spring has been a bit cool slowing grass growth, but warmer temperatures will certainly begin to kick grass growth into high gear within the next couple of weeks. Precipitation and soil moisture continues to be a struggle in the western half the United States as shown in the Monthly Drought Outlook figure from the National Drought Monitoring website. These continued drought conditions will continue to limit forage growth in these regions.

Forage availability is a key driver of stocker calf performance followed by forage quality. As we move through the spring months and begin to see temperatures increase, forage growth slows. Previous research demonstrates that the photosynthesis of plants is negatively impacted by increasing temperatures. Photosynthetic rates of tall fescue can be reduced when temperatures reach 86F/77F degrees Fahrenheit, day/night. Areas in Kentucky had eight days in May during 2021 that had daytime high temperatures of 86 or higher. Several days in June, July and August are normally going to be 86 F or warmer. These warmer temperatures slow forage growth of our perennial cool-season forages. More importantly, research has demonstrated that soil surface temperatures can have a larger effect on photosynthesis than air temperature. Close grazing or mowing exposes more soil to direct sunlight increasing soil surface temperature. Dr. Teutsch's research with tall fescue at the Princeton Extension and Research Center demonstrated that clipping forage weekly to 1" versus 4.5" height weekly increased plant crown sensor daily maximum temperature by 10 degrees Fahrenheit. Close clipping led to an increase in warm-season annual forages such as crabgrass due to the temperature stress on the cool-season forage. Reducing stocking density or implementing a managed grazing system to better manage forage residual heights may help cool-season forages be more persistent.

Be mindful of feeder calves that are not shedding winter hair coats. Studies show that lower hair coat scores, better shedding, improve daily gains during the grazing season. Several factors may be involved with shedding of winter hair including fescue alkaloids, genetics, plane of nutrition, and others. Recently, researchers from the southeast reported breed differences in hair coat scores when grazing tall fescue with Charolais-sired calves having less hair than Hereford-sired calves. Calves that don't shed will be more susceptible to heat stress. Ensure stocker calves always have access to clean water. As temperatures increase water intake will increase creating more demand on your water system. Ensure the floats and valves are in working order, that tanks are clean and not fouled with fecal contamination. Spring- and pond-fed tanks may accumulate sediment and should be cleaned out routinely.

Shade should be available during periods of heat stress. University of Missouri research demonstrated that stocker steers grazing Kentucky 31 tall fescue gain 0.3 pounds per day more when they had access to shade compared to those that did not have shade. Other studies have shown added performance when cattle have shade access during periods of high temperatures. Shade can either be natural from trees or man-made using structures with shade cloth. Shade cloth should have a minimum of 50% of light exclusion.

As forage quality and availability declines in mid-summer combined with increased temperatures, cattle performance may dip. To combat this, supplementation can increase the plane of nutrition of stockers sustaining higher performance. Strategies will be dependent on feed prices, target levels of gain, marketing windows, and other factors. A higher protein supplement, 20-28% crude protein, targeted a low rate of supplementation near 0.5% of body weight can increase protein intake to combat declining protein in the forage. If there is a need to increase supplementation rates to achieve either higher rates of gain or stretch forage, a low starch, highly digestible fiber coproduct feedstuff that is 14-16% crude protein can be utilized. Using commodity blends containing corn at 50% or less with soyhulls, distillers grains, corn gluten feed and other quality coproducts can be offered to boost energy and protein intakes of grazing cattle. Research would suggest at higher feeding rates of supplements that have minimal impacts on ruminal microbes every pound of supplement fed will lower forage intake by about ½ pound. Point is that at 0.5% to 1.5% of body weight supplementation levels, forage substitution won't be 1:1 with the supplement fed.

Consider these management factors for maintaining stocker gains during the summer. Take a few minutes to evaluate your current management and see if there are opportunities to adjust management to maintain or increase gains during the heat of the summer. Be sure to maintain animal health, keep internal parasites in check, utilize implants if your market allows, consider feeding an ionophore to combat coccidiosis and improve energy utilization from forages. Best of luck this summer and the markets appear to have some optimism looking at the futures prices. Consult with your veterinarian, feed dealer and county Extension agent for additional information.

Spongy Moth Traps Have Been Deployed

By Jonathan L. Larson, Entomology Extension Specialist

Spongy moth, formerly known as the gypsy moth, is a pest that we don't want to get established in Kentucky. To that end, a national effort known as Slow the Spread has been helping to monitor for and eliminate emerging populations of this key forest pest. Without their efforts, Kentucky would already have breeding populations of spongy moths, but thanks to their work, we are still free of this pest for the most part. Spongy moth can feed on more than 500 species of trees, but oaks are their favorites.

In order to continue this trend though, we have to be vigilant for spongy moth incursions. We must be wary of Ohio, Indiana, and both West Virginia and regular Virginia as possible sites of invasion. To best accomplish this, an array of pheromone traps is deployed across the state to monitor for male moths wondering into the Bluegrass.

Figure 1: *Spongy moth traps are triangular in shape and can be orange or green. They are most often attached to trees with staples and occasionally with zip ties. (Photo: Joe Collins, Kentucky Office of the State Entomologist).*

What might you see?

Pheromone traps for spongy moth are either orange or green. They are sometimes called delta or triangle traps due to their shape. They are usually stapled or zip-tied to trees in out of the way areas. Inside of these traps is a string that contains a pheromone that simulates a female moth. Around these strings will be a glue-covered area so that males that fall prey to the trick will get stuck.

What should you do?

Absolutely nothing. These traps aren't something that you would need to deploy at your home; they are a part of a partnership between the USDA and the Kentucky Office of the State Entomologist.

In the past, the Kentucky group has found traps pulled down, cut up, and even shot with shotgun blasts. When these traps are discovered, they should be left alone. Without them, we may miss an incursion of spongy moths, which could allow the pest to get a toehold in Kentucky and affect our large timber industry. Please leave the traps alone and know that they are there to help. The traps are usually deployed between May and August of any given year.

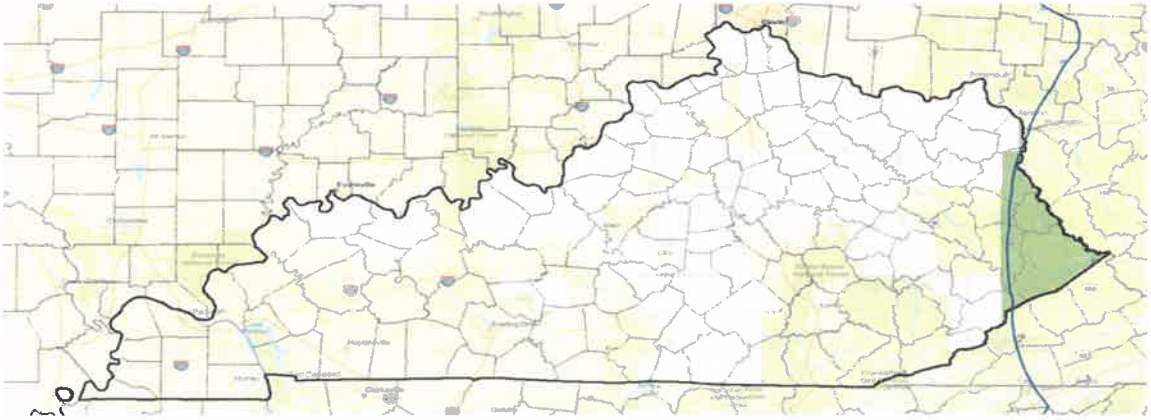


Figure 2: *Counties in Kentucky with a pink hue are areas where traps may be deployed to help monitor for spongy moth in the Bluegrass. (Photo courtesy of Carl Harper, Office of the State Entomologist).*

Be aware of poison hemlock dangers to livestock

Source: Michelle Arnold, UK extension ruminant veterinarian; J.D. Green, UK extension weeds specialist

In recent months, evidence of poison hemlock is widespread in Kentucky. Poison hemlock is toxic to a wide variety of animals including birds, wildlife, cattle, sheep, goats, pigs, horses and to humans.

People are usually poisoned when they eat hemlock mistaken for plants such as parsley, wild carrot or wild anise. Although, cattle seldom eat hemlock, they will if no other forage is available or if it is incorporated in hay or silage. A common question is how much do cattle need to eat to kill them. Unfortunately, the answer is not clear cut. There is considerable variation in the toxic alkaloid content of the plant depending on stage of growth, season, moisture, temperature, time of day and geographical region (southern plants are more toxic than northern plants). The alkaloids have two major effects: rapid, sometimes fatal effects on the nervous system, and birth defects in calves and pigs. Cattle have died by eating as little as 0.2-0.5 percent of their body weight in green hemlock.

Although this plant is often seen along roadways, abandoned lots, fencerows and other non-cropland sites, in more recent years, it has expanded out into grazed pasture lands and hay fields. Poison hemlock is classified as a biennial that reproduces only by seed. It is capable, however, of completing its lifecycle as a winter annual in Kentucky if it germinates during the fall. Flowers and new seed are typically produced in late May and June. Plants emerge as a cluster of leaves that form a rosette. Poison hemlock is most noticeable at this stage of growth in late fall through early spring with its parsley-like leaves which are highly dissected or fern-like. The individual leaves are shiny green and triangular in appearance.

As the plant begins to send up flower stalks, the leaves are alternately arranged on the main stem. Each individual leaf is pinnately compound with several pairs of leaflets that appear along opposite sides of the main petiole. As the plant matures, poison hemlock can grow upwards to about 6 to 8 feet tall. At maturity, the plant is erect, often with multi-branched stems, and it forms a deep taproot. Poison hemlock has smooth, hollow stems with random purple spots along the lower stem that help distinguish it from other similar plants. The flowers, when mature, are white and form a series of compound umbels (an umbrella-shaped cluster of small flowers) at the end of each terminal stalk. Although poison hemlock is often associated with areas that have moist soil conditions, it can also survive in dry sites.

Symptoms of poisoning can occur within 30 minutes to two hours of ingestion depending on the animal, quantity consumed and other ecologic factors. Toxicity varies depending on stage of plant growth, location and environment. Poison hemlock foliage has an unpleasant mouse urine-like odor, detectable when near the plant or when a stem or leaf is crushed, so livestock generally avoid it. Signs of acute poisoning include:

nervousness, trembling, muscle weakness, incoordination

salivation (slobbering)

initial stimulation or excitement followed by depression

dilation of the pupils

weak heartbeat

musty, mousy odor to breath and in the urine

prolapse of the third eyelid across the cornea may cause temporary blindness

death by respiratory failure, due to paralysis of respiratory muscles

Poison Hemlock in the seed production stage, make note of these areas to prepare for herbicide treatment this fall.

Although acute disease is a primary concern, an equally serious problem is subacute intoxication of pregnant livestock that causes deformed bones and joints in calves and pigs. For this to happen, cows must eat the plants for an extended period of time during the first trimester of pregnancy. The susceptible stage of gestation for maternal exposure for cattle is from 50-75 days for skeletal defects to occur. These alkaloids continuously reduce fetal movement during tissue formation, resulting in crooked legs, deformed necks and spines. Less commonly, cleft palate results from lack of fetal movement in the head and neck regions at 30-50 days gestation, resulting in the tongue preventing normal palate closure during embryo development.

All parts of the plant, including the seeds, contain the toxic alkaloids. Ingestion of fresh, green plant material may quickly produce signs of intoxication within an hour and last for several hours. Seeds and dried plant material contain the highest concentrations of the most troubling alkaloid. Toxicity may be somewhat reduced in dried plants due to volatility of the alkaloids, but the potential for toxicity still exists, particularly when a sufficient quantity is consumed in dried hay. Seeds are highly toxic and can be a source of poisoning when they contaminate cereal grains fed to livestock. Use extreme caution before feeding animals hay or grain known to contain poison hemlock.

Diagnosis is based on history of plant ingestion, clinical signs and chemical analysis for presence of alkaloids in rumen contents. No specific treatment for poisoning exists. If acute poisoning does not progress to respiratory failure and death, the prognosis for full recovery is good. Avoid overexcitement and stress that may exacerbate clinical signs and result in death.

Public health is a concern when dealing with poisoned animals because of the possibility of alkaloid residues in meat. Elimination of plant toxicants through the milk is a minor route of excretion but may be important when consumed by a calf or a human.

The principle strategy for poison hemlock control is to prevent seed production which can be a challenge since a fully mature plant is capable of producing 35,000 – 40,000 new seeds. It is too late to use herbicide control methods after plants have produced flowers. Therefore, you should use mechanical control efforts such as mowing or cutting down individual plants just before peak flower production to avoid or reduce the amount of new seed being produced.

Make note of areas heavily infested with poison hemlock and begin to look for emergence of new plants in the fall. During the late fall, November, or early spring, March, is the best time of year for herbicide treatment. In grass pastures and hayfields herbicide products containing 2,4-D can be effective when applied to young, actively growing plants that are in the rosette stage of growth. Spot treatments with products containing 2,4-D, triclopyr, or glyphosate can also be used depending on the location.

Beefy Stuffed Peppers

1 cup uncooked, whole wheat couscous
1 small tomato, diced
½ cup garbanzo beans
1 teaspoon dried Italian seasoning
¼ teaspoon ground black pepper
1 teaspoon salt
½ cup low fat shredded mozzarella cheese
4 large bell peppers
½ pound lean ground beef
1 tablespoon chopped green onion
1 tablespoon minced garlic

Cook couscous according to package directions. **Preheat** oven to 350 degrees F. **Combine** cooked couscous, tomato, beans, Italian seasoning, pepper, salt and mozzarella cheese in large bowl; set aside. **Remove** the tops, seeds and membranes from peppers. **Cook** peppers in boiling water for 5 minutes; **drain** upside down on paper towels. **Cook** beef until lightly browned in skillet. **Add** minced garlic and green onions to beef and sauté until soft. **Drain** fat. **Toss** beef mixture into the couscous mixture. **Stuff** bell peppers evenly with mixture. **Place** in a lightly greased 9 x 9 inch baking dish. **Bake** for 15-20 minutes or until peppers are tender and cheese is melted.
Yield: 4 servings
Nutritional Analysis: 280 calories, 6 g fat, 2.5 g saturated fat, 35 mg cholesterol, 790 mg sodium, 36 g carbohydrate, 7 g fiber, 6 g sugar, 21 g protein

Buying Kentucky Proud is easy. Look for the label at your grocery store, farmers' market, or roadside stand.