UPCOMING MEETINGS AND EVENTS:

February 18—Regional Hemp Production Meeting—Bath County Extension –8:00am--4:00pm
February 12-15—Farm Machinery Show—Louisville, KY
February 25—Bath County Cattleman Meeting—6:30 p.m.
March 10—CAIP informational meeting—6:00pm—Bath County Extension office
March 26—Regional Tobacco Production/GAP Meeting—Sharpsburg—6:00pm

REGIONAL HEMP GROWERS MEETING

BATH COUNTY EXTENSION FACILITY

FEBRUARY 18, 2020

REGISTRATION  $20.00  RSVP REQUIRED NO LATER THAN FEBRUARY 12TH (674-6121)
REGIONAL TOBACCO MEETING
PRESENTED BY: BATH, FLEMING, NICHOLAS, & MONTGOMERY COUNTY UK COOPERATIVE EXTENSION OFFICES

March 26, 2020
6:00PM-8:00PM
SHARPSBURG COMMUNITY CENTER
7781 W TUNNEL HILL RD
SHARPSBURG, KY

PLEASE REGISTER BY: 3/20/2020

CALL YOUR EXTENSION OFFICE AT 606-674-6121 TO REGISTER!

PROGRAM

6:00PM GAP TRAINING
   DR. BOB PEARCE/ GAP Connections

7:00PM DINNER
   Dr. Bob Pearce

7:00PM DISEASE UPDATE

7:30PM MARKET UPDATE

Sponsored By: The Burley Tobacco Growers Cooperative Association
Spring-Calving Herd
Timely Tips
Dr. Roy Burris, Beef Extension Professor, University of Kentucky

Get ready for calving season this month!
Have calving equipment, supplies and labor ready for the spring calving season. Some supplies which may be needed are: eartags and applicator (put numbers on eartags now), tattoo pliers and ink, record book, scales for calf weights, iodine for calves' navels and colostrum supplement. Calving equipment (puller and chains, etc.) and facilities should be ready and clean.

Overall condition of the cow herd should be evaluated. Cows losing weight now are more likely to have weak or dead calves. These cows will likely be a poor source of colostrum milk for the newborn calf. Feed cows, if necessary to keep them in good body condition.

Heifers may begin head-start calving in early February. Move them to a clean, accessible pasture, away from cow herd and near facilities so that calving assistance can be given. Cows may start calving later this month. Signs of calving are relaxation of pelvic ligaments, enlargement and swelling of the vulva, and enlargement of the udder. Expect calving difficulty if (1) calf's head and two feet are not visible, (2) only the calf's tail is visible, and (3) the cow has been in labor for 1½ hours. Be sure calf is being presented normally before using calf puller. Recognize situations that are beyond your capability and seek professional help as early as possible. Calves that aren't breathing should receive assistance. Try sticking a straw in nostril to stimulate a reflex or try alternate pressure and release on rib cage. Commercial respirators are also available. Calves should consume colostrum within 30 minutes of birth to achieve good immunity.

Record birthdate, cow I.D., and birthweight immediately (use your Beef IRM calendar). Identify calf with eartag and/or tattoo. Registered calves should be weighed in the first 24 hours. Male calves in commercial herds should be castrated and implanted as soon as possible.

Separate cows that calve away from dry cows and increase their feed. Increase feed after calving to 25-27 pounds of high quality hay. Concentrate (3-4 lb. for mature cows and about 8 lb. for first-calf heifers) may be needed if you are feeding lower quality hay. Supplementation may have a beneficial effect on date and rate of conception. The most important time to feed a beef cow is after calving. Thin cows don't come into heat very soon after calving. We must have cows in good condition, if we plan to breed them early in the season for best pregnancy rates, especially on high-endophyte fescue pastures.

Sub-zero weather can mean death for newborn calves. During extremely cold spells, bring the cow(s) into a sheltered area as calving approaches to protect the calf. Be prepared to warm-up and feed newborn, chilled calves. Calving in mud can also cause problems.

Watch for scours in newborn calves. Consult your veterinarian for diagnosis, cause, and treatment. Avoid muddy feeding areas so that cows' udders won't become contaminated and spread scours. Don't confine cows to muddy lots.

Replacement heifers should be gaining adequately to reach target breeding weights by May 1. Be sure that their feeding program is adequate for early breeding.

Start looking for herd sire replacements, if needed.
General

Increase feed as temperature drops. When temperature falls below 15 degrees, cattle need access to wind-breaks. For each 10 degree drop below 15 degrees, add three pounds of hay, two pounds of corn, or six pounds of silage to their rations.

Provide water at all times. Watch for frozen pond hazards. If cattle are watering in a pond, be sure to keep ice “chopped” to keep cattle from walking on the ice and, possibly, breaking through. Keep automatic waterers working.

You should be feeding a mineral supplement with adequate magnesium to prevent grass tetany (~ 15% Mg) now. The Hi-mag UK Beef IRM mineral can be used now.

Control lice. Watch for signs such as rubbing.

Begin pasture renovat. You can overseed clover on frozen or snow-covered pastures

Forage Seeder Calibration at a Glance

Planting too much seed increases establishment costs.

Planting too little seed results in thin stands, increased weeds, and lower yields.

Seeding charts can vary greatly from actual seeding rate.

Seeders should be calibrated under field conditions whenever possible.

The area covered and amount of seed dispensed must be known for calibration.

**Seeding rate = amount of seed ÷ area covered**

Area covered (acres) = seeder width (ft) x distance traveled (ft) ÷ 43,560

Determining amount of seed (always tare scale for weighing container):

- **Collection**: Seed is collected for a known area.
- **Difference**: The difference between the original amount of seed in the seeder and the amount remaining for a known area.
- **Run out**:Seeder is run until known quantity of seed runs out and area is determined. This is the least precise method.

For more detailed information on calibrating forage seeding equipment, visit [http://pubs.ext.vt.edu/418/418-121/418-121.html](http://pubs.ext.vt.edu/418/418-121/418-121.html) or contact your local Virginia Cooperative Extension office and ask for Publication 418-121, Calibrating Forage Seeding Equipment.

For more information on frost seeding contact your local extension agent or visit Kentucky Forages at [http://forages.ca.uky.edu/](http://forages.ca.uky.edu/). A YouTube video on *Frost Seeding Clover* can be viewed at [https://youtu.be/dmBBBaLVg-Y?list=PLrq6psn95pUxr2iC0Mxn93wcYPxTJvWfI](https://youtu.be/dmBBBaLVg-Y?list=PLrq6psn95pUxr2iC0Mxn93wcYPxTJvWfI).
Tall Fescue and its endophyte - Implications for your farm

Dr. Jimmy Henning, Livestock Forage Specialist, University of Kentucky

The story of Kentucky 31 tall fescue reads like a soap opera. Found on a Menifee County Kentucky hill side in 1931, it quickly became a rival to Kentucky bluegrass as the most important grass in Kentucky. Its yield and persistence made it look unbeatable, but its animal performance numbers were sometimes poor or worse. The decision by the University of Kentucky to go forward with the release of Kentucky 31 was filled with about as much drama as you will ever find in an academic setting.

We now know the poor animal performance AND the persistence of that early fescue was due to the presence of a fungus inside the plant (the endophyte; ‘endo’ for in plus ‘phyte’ for plant). When the endophyte is present, that plant is said to be ‘infected.’ And when infected plants grow, the fungus produces compounds that result in the poor animal performance. These compounds are known as alkaloids, and ergovaline is the one used to assess fescue toxicity in the laboratory.

Early surveys in Kentucky found the majority of fescue did contain the endophyte of tall fescue. The scope of this problem led to massive amounts of research about the endophyte of tall fescue and how to mitigate its effect on livestock across the fescue belt.

The following is a synopsis of our current understanding of this pasture grass and the toxic endophyte.

- The endophyte grows inside the plant, between the cells, but is never seen externally. There are no visual indicators to tell if tall fescue is infected.
- The endophyte is physically present in the stem bases, but the toxic compounds spread throughout the plant.
- The least toxic portion of the plant is the green, leafy tissue. The most toxic portion is the seed, with stem bases being intermediate. Managing to keep pastures leafy, not overgrazing, and preventing seedhead production are all effective strategies to manage the negative effects of the tall fescue endophyte.
- Ergovaline levels (the indicator of fescue toxicity) fluctuate seasonally and are highly variable year to year. Concentrations are highest in May/June and September/October. Toxin levels drop after the fescue experiences the cold temperatures of late fall and winter. In one Central Kentucky field, ergovaline numbers dropped 80% from October to December.
- Ergovaline levels are lower in hay than the standing forage from which it was made (another very positive thing).
- The toxic alkaloids cause constriction of the external blood vessels in cattle (vaso-constriction) leading to heat stress. Cattle eat less, gain less and breed less. The negative economic effects of infected tall fescue are significant, totally millions annually across the Southeast.

- Most Kentucky pastures contain tall fescue, but fields are seldom 100% tall fescue. The presence of other species buffer the effects of the endophyte – a very good thing. The diversity of our pastures and our milder summers mean that we suffer somewhat less than states to the south. However, toxic tall fescue is the single biggest agronomic drag on animal performance in Kentucky and must be mitigated for economic viability.

- Interseeding with clovers is the number one way to offset the effect of the endophyte of tall fescue. Clovers improve the protein and energy content of the pasture and will contribute nitrogen to the system from plant decomposition or from the manure and urine deposited from cattle consuming clover.

- Recent research by the USDA-ARS forage research unit showed that clover, especially red clover, will directly reduce the vaso-constriction in cattle consuming infected fescue. Fortunately, red clover is extremely well adapted and relatively easy to establish into existing tall fescue pastures.

- The endophyte is only spread by infected seed. Endophyte-free varieties are available.

- Early endophyte-free tall fescue varieties (such as Kentucky’s ‘Johnstone’) did not prove as persistent as Kentucky 31 with the endophyte.

Grazing tolerant varieties of endophyte free tall fescue are available. For a full report on their persistence under heavy grazing, consult University of Kentucky Progress Report PR-735, Cool-Season Grass Grazing Tolerance Report (http://www2.ca.uky.edu/agcomm/pubs/PR/PR735/PR735.pdf).

The Kentucky 31 brand put our state on the tall fescue map worldwide. The endophyte present in those early seedlots contributed to its persistence but also its current limitations on pasture performance. But just when you think you understand the toxic endophyte of tall fescue, along comes a non-toxic endophyte. Really. But that is a subject for the next column. See you then.

Happy Foraging!
From Jan 18 Farmers Pride
Venison Sloppy Joes

- 1 pound ground venison
- 1 onion, chopped
- 1 green bell pepper, chopped
- 2 stalks celery, chopped
- 2 tablespoons brown sugar
- 1/4 cup water
- 1/4 cup vinegar
- 2 tablespoons lemon juice
- 8 ounces low-sodium condensed tomato soup
- 1 tablespoon Worcestershire sauce
- 1 tablespoon prepared mustard

Mix all ingredients in a medium saucepan. Cook over medium heat for approximately 30 minutes. Serve on whole grain bun.

Yield: 6 servings

Adapted from Wild Game: From Field to Table, Sandra Bastin, PhD, RD, Extension Food and Nutrition Specialist. Revised July 2007

<table>
<thead>
<tr>
<th>Nutrition Facts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Serving size</strong></td>
</tr>
<tr>
<td><strong>Amount per serving</strong></td>
</tr>
</tbody>
</table>

| **Calories** | 180 |
| **% Daily Value** |%
| **Total Fat** | 3g | 4% |
| **Saturated Fat** | 1g | 5% |
| **Trans Fat** | 0g |%
| **Cholesterol** | 65mg | 22% |
| **Sodium** | 180mg | 8% |
| **Total Carbohydrate** | 17g | 6% |
| **Dietary Fiber** | 1g | 4% |
| **Total Sugars** | 10g |%
| **Includes 4g Added Sugars** | 8% |
| **Protein** | 20g |%

| Vitamin D | 0mcg | 0% |
| Calcium | 50mg | 4% |
| Iron | 3mg | 15% |
| Potassium | 331mg | 8% |

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.
<table>
<thead>
<tr>
<th>Variety</th>
<th>Resistance To</th>
<th>Comments</th>
<th>Harvest</th>
<th>Stores Until</th>
<th>Skin Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pristine</td>
<td>VR</td>
<td>Good quality for season, not as tart as Lodi, makes excellent applesauce</td>
<td>mid-July</td>
<td>short storage</td>
<td>Light yellow with red blush</td>
</tr>
<tr>
<td>Williams Pride</td>
<td>VR</td>
<td>Good quality for season, corkspot frequently observed, subacid, yellow flesh</td>
<td>mid-July</td>
<td>short storage</td>
<td>70-80% dark red</td>
</tr>
<tr>
<td>Redfree</td>
<td>VR</td>
<td>Firm, summer apple, juicy</td>
<td>early Aug., Oct.</td>
<td>90-100% dark red on yellow</td>
<td></td>
</tr>
<tr>
<td>Dayton</td>
<td>VR</td>
<td>Similar to Prima</td>
<td>mid-Aug., Sept.</td>
<td>Up to 90% bright medium red</td>
<td></td>
</tr>
<tr>
<td>Liberty</td>
<td>VR</td>
<td>Fruit similar to Macoun, crisp, juicy, yellowish flesh, tart at harvest</td>
<td>late Aug., Dec.</td>
<td>90% dark red stripes on green yellow</td>
<td></td>
</tr>
<tr>
<td>Nova Easygro</td>
<td>VR</td>
<td>Fruit similar to Cortland, fair quality</td>
<td>early Sept., Dec.</td>
<td>80% dark red on green yellow</td>
<td></td>
</tr>
<tr>
<td>Spartan</td>
<td>MR</td>
<td>Firm McIntosh type, needs thinning to develop size</td>
<td>early Sept., Jan.</td>
<td>Dark red to pale red depending on weather</td>
<td></td>
</tr>
<tr>
<td>Jonafree</td>
<td>VR</td>
<td>Fruit similar to Jonathan but less acid</td>
<td>early Sept., Dec.</td>
<td>90% red stripes</td>
<td></td>
</tr>
<tr>
<td>Pixie Crunch</td>
<td>—</td>
<td>Small, sweet flavored, super crisp, kids' apple</td>
<td>early Sept., Dec.</td>
<td>Deep red</td>
<td></td>
</tr>
<tr>
<td>Macfree</td>
<td>VR</td>
<td>Similar to McIntosh, mealy under hot conditions</td>
<td>mid-Sept., Dec.</td>
<td>75% medium red over green yellow</td>
<td></td>
</tr>
<tr>
<td>Priscilla</td>
<td>VR</td>
<td>Tart, firm, somewhat coarse textured, crisp, juicy, small fruit size</td>
<td>mid-Sept., Nov.</td>
<td>70-90% dark red blush over yellow green</td>
<td></td>
</tr>
<tr>
<td>CrimsonCrisp</td>
<td>MR</td>
<td>Medium-sized red fruit, firm, crisp, tart, stores very well</td>
<td>mid-Sept., March</td>
<td>95% red</td>
<td></td>
</tr>
<tr>
<td>Enterprise</td>
<td>VR</td>
<td>Sprightly, subacid, slightly aromatic and spicy, crisp, fine-grained juicy flesh, stores well</td>
<td>mid-Oct., Feb.</td>
<td>Washed, 90% light to medium red</td>
<td></td>
</tr>
<tr>
<td>GoldRush</td>
<td>S</td>
<td>Fruit very crisp, firm, tart at harvest and sweetens up after storage, very susceptible to black rot. Will store for 11 months</td>
<td>mid-Oct., April</td>
<td>Deep yellow with red blush</td>
<td></td>
</tr>
<tr>
<td>Sundance</td>
<td>VR</td>
<td>Excellent quality with fruity flavor like mild pine-apple, fruit does not drop</td>
<td>mid-Oct., March</td>
<td>Yellow, occasionally russets in stem cavity</td>
<td></td>
</tr>
</tbody>
</table>

AS = apple scab, CR = cedar apple rust, FB = fire blight, PM = powdery mildew.
VR = very resistant, R = resistant, MR = moderately resistant, S = susceptible, — = insufficient information.

Note: All apples require cross-pollination by a different variety. Winesap and Sir Prize cannot serve as pollinizers because they have sterile pollen.

1 Resistance to diseases other than scab has not been fully evaluated and may differ in some locations from that reported here.
2 Produces high-quality apples in Kentucky.
3 Although these cultivars are resistant to cedar apple rust, they are susceptible to cedar quince rust.
Table 8. Spray schedules for pest control on apples and pears.

<table>
<thead>
<tr>
<th>Plant Stage¹</th>
<th>Insects and Diseases</th>
<th>Examples of [Organic] Pesticides Required²</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dormant</td>
<td>scale</td>
<td>[dormant oil]</td>
<td>Check label carefully for dormant vs. delayed dormant rates on apple vs. pear. Do not spray dormant oil when temperature is below 40°F (5°C) or likely to drop below 40°F within 24 hours. Do not mix bactericide with oil.</td>
</tr>
<tr>
<td></td>
<td>fire blight</td>
<td>[fixed copper]</td>
<td>Copper sulfate is not the same as fixed copper and should not be mixed with oil.</td>
</tr>
<tr>
<td>Green tip to half-inch green</td>
<td>scale</td>
<td>[dormant oil]</td>
<td>See above. Last chance to apply oil on apples, if not applied in dormant spray.</td>
</tr>
<tr>
<td></td>
<td>scab</td>
<td>Captan, Mancozeb, thiophanate-methyl + Captan, myclobutanil + Captan, [fixed copper; sulfur]</td>
<td>No spray needed. Oil, fixed copper, and myclobutanil can be mixed together.</td>
</tr>
<tr>
<td>Tight to open cluster</td>
<td>scab</td>
<td>Same as green tip</td>
<td>No spray needed. Using fixed copper past this point is likely to cause fruit russetting.</td>
</tr>
<tr>
<td>Pink</td>
<td>aphids, tarnished plant bug, stink bug (if present)</td>
<td>Multipurpose tree spray mixture, [Pyrethrum, Surround, maltion]</td>
<td>[citrus peel oil, garlic oil]</td>
</tr>
<tr>
<td></td>
<td>scab, rust</td>
<td>Same as green tip but must include myclobutanil, Mancozeb, [fixed copper, sulfur]</td>
<td>myclobutanil, Mancozeb [fixed copper, sulfur]</td>
</tr>
<tr>
<td>Bloom</td>
<td>scab, rust, powdery mildew</td>
<td>Same as green tip but must include myclobutanil, Mancozeb, [fixed copper]</td>
<td>No spray needed. Do not use insecticide during bloom.</td>
</tr>
<tr>
<td></td>
<td>fire blight</td>
<td>[Streptomycin]—provided sanitation pruning has been done</td>
<td>All dead twigs and branches must have been pruned out while trees were dormant before considering chemical use now.</td>
</tr>
<tr>
<td>Petal fall</td>
<td>plum curculio, pear psylla, plant bugs, leafrollers</td>
<td>Multipurpose tree free spray mixture, [Pyrethrum, Surround, maltion]</td>
<td>Surround for plum curculio.</td>
</tr>
<tr>
<td></td>
<td>scab, rust, fruit rots, sooty blotch</td>
<td>Same as green tip but must include myclobutanil, Mancozeb, [fixed copper, sulfur]</td>
<td>myclobutanil, Mancozeb [fixed copper, sulfur]</td>
</tr>
<tr>
<td>First cover</td>
<td>codling moth, plum curculio, San Jose scale crawlers</td>
<td>Malathion, [Pyrethrum, Surround, multiple spray sprays, Spinosad]</td>
<td>Surround for plum curculio. Spinosad for codling moth.</td>
</tr>
<tr>
<td></td>
<td>scab, rust, fruit rot, sooty blotch</td>
<td>Same as green tip but must include myclobutanil, Mancozeb, [sulfur]</td>
<td>myclobutanil, Mancozeb [sulfur]</td>
</tr>
<tr>
<td>Second cover</td>
<td>codling moth, plum curculio, San Jose scale crawlers</td>
<td>Malathion, [Pyrethrum, multiple spray sprays, Spinosad]</td>
<td>Spinosad for codling moth.</td>
</tr>
<tr>
<td></td>
<td>scab, rust, fruit rots, sooty blotch, leaf spots</td>
<td>Same as green tip, but must include myclobutanil, Mancozeb, [sulfur]</td>
<td>myclobutanil, Mancozeb [sulfur]</td>
</tr>
<tr>
<td></td>
<td>mites (if present)</td>
<td>Vendex, insecticidal soap</td>
<td></td>
</tr>
<tr>
<td>Third cover</td>
<td>codling moth, pear psylla</td>
<td>Malathion, [Pyrethrum, multiple spray sprays, Spinosad]</td>
<td>Spinosad for codling moth.</td>
</tr>
<tr>
<td></td>
<td>scab, fruit rots, sooty blotch</td>
<td>Captan, thiophanate-methyl + Captan, [sulfur]</td>
<td>See label for Captan use.</td>
</tr>
<tr>
<td>Remaining covers⁴</td>
<td>codling moth, leafhoppers, pear psylla</td>
<td>Malathion, [Pyrethrum, multiple spray sprays, Spinosad]</td>
<td>Spinosad for codling moth.</td>
</tr>
<tr>
<td></td>
<td>fruit rots, scab, sooty blotch</td>
<td>Captan, thiophanate-methyl + Captan, [sulfur]</td>
<td>See label for Captan use.</td>
</tr>
</tbody>
</table>

¹ See pages 18 and 19 for illustrations of plant floral stages.

Dormant: Early spring before buds swell. Green tip to half-inch green: When blossom buds show ½ inch green. Tight to open cluster: When fruit buds are visible. Pink: Just before blossoms open. Bloom: When 20 to 60% blossoms are open. Petal fall: When last petals are falling. First cover: Seven days after petal fall. Second cover: Two weeks after first cover spray. Third cover: Two weeks after second cover. Remaining covers: Spray every two weeks.

² Growers must read the pesticide label for proper rates of chemical to use. Some materials are effective against some pests and not others. Choose materials needed to control the most important pests in your fruit planting. See Table 5 for information on mixing small quantities of pesticides.

³ Although cleared for use on apples, Captan is not labeled for pears. Materials in brackets are approved for organic production.

⁴ Check label for waiting days to harvest. Tables 6 and 7 also give waiting days to harvest.

Note: There are several formulations of multipurpose fruit sprays. Be sure to check the label to determine which are organic formulations.
University of Kentucky
A Grower’s Guide to Kentucky Hemp Production
February 18, 2020

Topics
Regulatory and Field Testing
Production Systems
Site Selection and Soils
Budgets and Risk Management
Cultivar Information
Fertility
Planting
Pest Risks and Management
Harvest
Harvest Equipment

Registration
Pre-registration required $20
RSVP by February 13th
606-674-6121 or Bath.ext@uky.edu
Lunch included
Space is limited

Location
Bath County Extension Office
2914 E. Hwy 60
Owingsville, KY 40360
8am to 4pm

Featured Speakers
Doris Hamilton, KY Dept of Ag
Tyler Mark, UK Ag Economics
Jonathan Shepherd, UK Ag Economics
Nicole Gauthier, UK Plant Pathology
Raul Villanueva, UK Entomology
Ric Bessin, UK Entomology
Tim Stombaugh, UK Ag Engineering
Sam McNeil, UK Ag
University of Kentucky
A Grower’s Guide to Kentucky Hemp Production

**Registration Information**
Contact county Bath County office at 606-674-6121
Bath.ext@uky.edu
Pre-registration is required
Space is limited.
Deadline for registration Feb.13th, 2020

**Cost $20**
Make checks payable to Bath County Extension Office

Mail registration to:
Bath County Extension
2914 E. Hwy 60

<table>
<thead>
<tr>
<th>Name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Phone Number</td>
<td></td>
</tr>
<tr>
<td>Field Location (County)</td>
<td></td>
</tr>
<tr>
<td>Did you grow hemp in 2019?</td>
<td></td>
</tr>
<tr>
<td>How many acres?</td>
<td></td>
</tr>
<tr>
<td>Do you plan to grow hemp in 2020?</td>
<td></td>
</tr>
<tr>
<td>How many acres?</td>
<td></td>
</tr>
</tbody>
</table>