



**DIVISION OF AGRICULTURE**  
**RESEARCH & EXTENSION**  
*University of Arkansas System*

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## **Faulkner County Agriculture News**

### **River Valley Row Crop Tour**

The River Valley Row Crop Tour will be held **Tuesday August 13, 2019 starting at 4:00 pm at The Barn (Schaefer's shop) in Lollie.** The agenda is as follows:

4:00 – Meet at the Barn for registration

4:10 – Enlist Herbicide Demonstration

4:45 – Heligen Demonstration

5:30 – Liberty Link/E3 Variety Demonstration

6:00 – Mary Beth Groce, Faulkner County Family and Consumer Science Agent

6:15 – Supper

### **Flood Recovery Meeting**

Arkansas farmers affected by the spring's record-breaking flooding will be able to learn about available options for recovery efforts at a meeting August 15 at the Conway County Fairgrounds.

The meeting begins at 9 a.m. at the Multi-Purpose Building at the fairgrounds in Morrilton, near the city park.

“This outreach meeting brings together several agencies that can offer varying aspects of recovery help,” said Kevin Van Pelt, Conway County extension agent for the University of Arkansas System Division of Agriculture. “We want all of our affected producers to know what’s out there for them.”

The agenda will include updates on countywide projects from Conway County Judge Jimmy Hart, and a question-and-answer panel.

The meeting is presented by the U.S. Department of Agriculture, Natural Resource Conservation Service, Farm Service Agency, Conway County Conservation District, Arkansas Natural Resource Commission, the Arkansas Forestry Commission and the Cooperative Extension Service.

Here's the meeting agenda:

- 9 a.m. - Introduction and overview - Cindy Neal, Natural Resources Conservation Service, moderator
- 9:10 a.m. - Update on countywide projects, Jimmy Hart, Conway County judge
- 9:20 a.m. - USDA Program Availability, Carol Hoyt, Farm Service Agency – Loans; Robert Evans, FSA – Programs; Tiffany Williams, NRCS.
- 10:10 a.m. - Flood recovery for ag producers: Jennifer Caraway, Miller County extension – Forages, Kevin VanPelt, Conway County extension agent - Cropland
- 10:30 a.m. - Q & A and panel discussion with Mike Sullivan, NRCS state conservationist and David Curtis, FSA state director.

For information about the meeting, contact the Conway County Extension Office at (501) 977-2146.

## **Nitrates and Prussic Acid**

### **Nitrates**

All plants contain some nitrate, but excessive amounts are likely to occur in forages which have been grown under conditions of excessive fertilization and/or stress. The buildup of nitrates in soil brought on by excessive fertilization with poultry litter or animal manure is a common cause of nitrate accumulation in plants. Commercial fertilizers aren't likely to cause excessive nitrate accumulation in plants when recommended application rates and practices are followed. However, plant species and adverse environmental conditions before harvest affect the concentration of nitrates even more than available nitrogen in the soil. Direct ingestion of fertilizers that contain nitrates can be toxic to livestock.

The nitrate content is usually highest in young plants and decreases as the plant matures. However, at high levels of soil nitrate or under conditions of growth stress, the plant nitrate content may be high at maturity. The highest levels of nitrates occur just before flowering and decline rapidly after pollination and seed formation. The highest concentration of nitrate accumulates in the lower third of the plant stalk or stem. It is progressively diluted toward the top of the stem. Very little nitrate is found in the flowers or seed.

Recommendations for preventing nitrate toxicity are as follows:

1. Follow recommendations for nitrogen fertilization, and be careful not to exceed 4 tons of poultry litter yearly per acre on cool season grasses. The risk will be minimized by spreading litter uniformly and limiting application to 2 tons per acre per application.
2. When a crop is grown under conditions that cause nitrate accumulation, delay harvest of the crop until conditions improve to permit nitrate content to drop to a safe level.
3. Consider making silage of drought damaged forage. The ensiling process reduces the nitrate level 40 to 60 percent.

4. If high levels of nitrate have accumulated in plants, raise the cutter bar and leave more stem, the portion of the plant with the highest concentration of nitrate, in the field.
5. Have suspected forage tested before feeding to cattle.
6. Dilute toxic forage by mixing it with nontoxic forages and/or energy feeds such as molasses or corn. Use forage nitrate analysis to determine dilution rates. Energy feeds, such as shelled corn, when fed daily at a minimum of 2 pounds per head, will offset production losses as long as the average forage nitrate concentration does not exceed 1,500 ppm.
7. Feed a nutritionally balanced ration. Iodized salt and vitamin A or green feed supplementation lessen the toxicity of nitrates.
8. Adapt cattle slowly to elevated levels of nitrate. Don't give hungry animals a full feed. Never exceed maximum recommended levels of nitrate intake.
9. Feed suspect forage in small amounts several times a day rather than all at one feeding.
10. Be aware that forage regrowth and volunteer plants are highly suspect following nitrate fertilization and drought.
11. Observe animals closely for signs of toxicity, and call a veterinarian immediately if symptoms are observed.

### **Prussic Acid**

The amount of prussic acid found in plant tissue varies among species. Of all the plants grown in Arkansas, those belonging to the sorghum category are most likely to contain potentially toxic levels. Grain sorghum contains the most, followed by johnsongrass, sorghum sudan hybrids and then pure sudangrass. However, johnsongrass may be the plant of most concern since it grows wild throughout the state and infests many areas that are grazed. Close grazing for several years usually eliminates johnsongrass from pastures. Millet is free of the toxin. Prussic acid may be produced by a few other plant species. Wild cherry trees can produce toxic levels, and prussic acid poisoning occurs most often when animals consume wilted leaves after trees have been damaged by storms or pruning.

The amount of prussic acid is higher in young plants than in older ones, and the prussic acid content of leaves is higher than that of stems. Upper leaves contain more than the lower ones. Prussic acid concentration decreases as the plants become taller and more mature. Usually, sorghum type plants 18 to 24 inches tall are less likely to contain high concentrations of the toxin. Immature plants and regrowth following haying or grazing contain the highest levels. Drought and frost are closely associated with high levels of prussic acid. Plants growing under stressful conditions and those that have received more than 75 pounds of nitrogen per acre in one application may contain more toxins.

1. Do not allow animals to graze fields with succulent, young, short growth. Graze only after plants reach a height of 18 to 24 inches.
2. Do not graze drought damaged plants in any form, regardless of height, within four days following a good rain. It is during this period of rapid growth that accumulation of prussic acid in the young tissue and of nitrates in the stems is most likely to occur.

3. Do not graze wilted plants or plants with young regrowth. Do not rely on drought damaged material as the only source of feed. Keep either dry forage or green chop from other crops available at all times. Uneven growth as a result of drought can best be utilized as silage or hay.
4. Do not use frost damaged sorghum as pasture or green chop during the first seven days after the first killing frost. Delay pasturing for at least seven days or until the frosted material is completely dried out and brown colored. Do not rely on frosted material as the only source of feed. Do not graze at night when frost is likely.
5. Do not turn hungry cattle onto a pasture of sorghum, sorghum sudan hybrid or johnsongrass. Fill them up on hay or other forage first, and begin grazing in the late afternoon.
6. An option for using potentially toxic forage is to harvest it as hay or silage. Prussic acid levels decline in stored forages. Well cured hay is safe to feed, and if forage likely to have high prussic acid is ensiled, it is usually safe to feed three weeks after silo fill.

### **Corn Earworms in Soybeans**

Corn earworms are starting to show up in soybeans around the county. They seem to be hitting the younger soybeans more than the older fields. During vegetative growth, soybeans can stand a lot of feeding. It isn't recommended to make an insecticide application until there is at least 40% defoliation before bloom and 25% defoliation after bloom. Where these worms do the most damage is on podding beans. Once they destroy a pod, that bean is gone. When finding worms in beans that have started to pod, follow the dynamic chart listed below. The price of soybeans plus the price of treatment will determine how many worms you need to be finding per 25 sweeps to trigger a treatment application.

Crop value (\$/bu)	Larvae/25 sweeps						
	Control costs (\$/acre)						
	8	10	12	14	16	18	20
6	6.5	8.2	9.8	11.4	13.1	14.7	16.3
7	5.6	7.0	8.4	9.8	11.2	12.6	14.0
8	5.0	6.1	7.4	8.6	9.8	11.0	12.3
9	5.0	5.4	6.5	7.6	8.7	9.8	10.9
10	5.0	5.0	5.9	6.9	7.8	8.8	9.8
12	5.0	5.0	5.0	5.7	6.5	7.4	8.2
13	5.0	5.0	5.0	5.3	6.0	6.8	7.5
15	5.0	5.0	5.0	5.0	5.2	5.9	6.5

One of the options for treating corn earworms is Heligen which is a nucleopolyhedrovirus. 1.6 ounces per acre has shown to be very effective on small corn earworms. The key to treating with Heligen is to target the very small worms. It will take time for the virus to kill the worms, but they do get sick and don't eat as much until they die. This nice thing about Heligen, is the residual that is left in the field. Every infected worm becomes a virus factory, which then spreads to new hatches.

## **Text and Email Updates**

If you would like to sign up for ag text alerts from the Extension Office you can go to [www.uaex.edu/faulkner](http://www.uaex.edu/faulkner) and click the **sign up for text link** which is located on the main page.

You can also text the message **uaex FaulkCrop** or **uaex FaulkBeef** to the number **313131**

I am also sending out a Faulkner County Weekly Agriculture Update email. I send this out every Friday and if anyone wants to sign up, they can email me at [klawson@uaex.edu](mailto:klawson@uaex.edu) and I will add you to the list. This update can also be found on our website under the newsletter section.

Sincerely,



Kevin Lawson

County Extension Agent – Staff Chair, Faulkner County

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