

FHD Extension News

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FAIR SEASON IS UPON US—MARK YOUR CALENDARS

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Tri-County Fair

Held in Herington July 8-10, 2023

This fair is open to all 4-H members across the state who wish to participate.

Chase County Fair

Held in Cottonwood Falls July 20-28

For a Full Schedule, contact the Extension Office

| | | |
|--------------------|---------|--|
| Sunday, July 23 | 5 PM | 4-H and Open Horse Show |
| Monday, July 24 | 8:30 AM | Dog Show |
| | 1 PM | Food Sale Begins |
| Tuesday, July 25 | 8:30 AM | 4-H & Open Class Swine, Sheep & Goat Show |
| | 6:30 PM | 4-H & Youth Carnival |
| | 7 PM | Hyway 14 Band |
| Wednesday, July 26 | 8:30 AM | 4-H & Open Class Beef Show |
| | 8:30 AM | 4-H & Open Class Rabbit & Poultry Shows |
| | 2 PM | Showmanship Finals |
| Thursday, July 27 | 11AM | Exhibits Released |
| | 4:30 PM | Stanley Stout Memorial 4-H Livestock Auction |
| | | Ice Cream Social |
| | 5:30 PM | BBQ |
| | 6:30 PM | Awards & 4-H Gift Basket winners announced |
| | 7:00 PM | Public 4-H Fashion Revue |

Morris County Fair

Held in Council Grove July 22-31, 2023

For a Full Schedule, contact the Extension Office

| | | |
|--------------------|---------------|--|
| Saturday, July 22 | 9 AM | Dog Show |
| Tuesday, July 25 | 7 PM | Fashion Revue and Talent Showcase |
| Wednesday, July 26 | 9 AM | Cat and Hand Pet Show |
| | 12 PM | Rabbit Show |
| Thursday, July 27 | 9 AM | 4-H and Open Horse Show |
| Friday, July 28 | 5-8 PM | Check in Exhibits |
| Saturday, July 29 | 9 AM | Swine Show |
| | 3 PM | Dairy Cattle and Dairy Goat Show |
| | 5 PM | 4-H Food Auction |
| | 6 PM | Bucket Calf and Beef Show |
| Sunday, July 30 | 8:30-10:30 AM | Community Breakfast—Sponsored by MR Co Farm Bureau |
| | 9:30 AM | Youth Led Church Service |
| | 2 PM | Poultry Show |
| | 6 PM | Sheep and Meat Goat Show |
| Monday, July 31 | 9 AM | Round Robin Showmanship |
| | 6 PM | Buyer Appreciation Meal |
| | 7 PM | Awards |
| | 7:30 PM | Livestock Sale |
| | 8 PM | Release of Indoor Exhibits |

K-STATE RAPID RESPONSE CENTER

<https://www.rrc.k-state.edu/>

Rapid Response Center



Have you checked out the resources on the website for the Rapid Response Center? This website houses information on :

Local Foods—farmers markets, direct marketing for meat products, gardening, etc.

Food Preservation—canning, freezing, pickling, recipes, safety in food preservation, etc.

Canning information is broken down by type of product, pH levels, type of preservation

Food Preparation—eating on a budget, safety in food preparation, average cost of foods, recipes, etc.

Food Safety—basics, safety considerations in organic products, etc.

Human Nutrition—my plate, recipes for health, physical activity, etc.

You Asked It! - the monthly newsletter focused on answering food safety questions

Judging At Fairs—any questions, concerns, and details about evaluating foods

Publications—any publications available on a variety of food topics



Agriculture and Natural Resources

Herbicide Applications and High Temperatures

Warmer temperatures are here and it seems we will continue to see the warmer-than-normal temperatures statewide. If you are planning herbicide applications, here are some things to consider when applying herbicides during hot weather.

- Heat or drought stress slows plant growth processes.** This is especially important for systemic herbicides such as glyphosate and grass-killing herbicides like clethodim (Select) or quizalofop (Assure). As temperatures increase above 85°F, many plants begin to slow or stop metabolic processes that move herbicides throughout the plant. Notable exceptions to this rule are HPPD-inhibiting herbicides like Callisto or Balance Flexx. Palmer amaranth plants are able to overcome applications of these herbicides when applied at high temperatures (90°F and greater).
Management: In general, applying systemic herbicides early in the morning, after plants have had a chance to recover from heat stress, will give the best chance for the herbicide to reach the active site and effectively kill weeds.
- Leaves change in response to heat.** In order to prevent water loss, plant cuticles become waxier in response to heat or drought stress. The greater wax content makes it more difficult for water-based spray solutions to penetrate the plant. In addition, the leaf angle of many plants changes in response to heat or drought stress (Figure 1). Often, this results in less herbicide contacting the leaf surface to enter the plant.
Management: Using maximum labeled rates of herbicides and surfactants can help get more spray solution into the plant, increasing effectiveness. Spraying during the cooler parts of the day will reduce the impact of altered leaf angle.
- Crop response to foliar-applied, non-translocated herbicides is greater in hot temperatures.** When applied in hot, humid conditions, contact herbicides, such as Cobra, Liberty, or Reflex will likely result in greater foliar injury to crops, but also greater weed control.
Management: If possible, postpone the application of these herbicides if temperatures are over 90°F. If weed size requires immediate herbicide application, reduce the rate of herbicide and adjuvant, and apply later in the day, when the air temperature will decrease after application.
- Herbicide volatility increases with high temperatures and low humidity.** Herbicides in group four, such as dicamba and 2,4-D are prone to volatility, which means the herbicide becomes a vapor and can move long distances with slight breezes. Volatility of these herbicides increases as temperature rise above 60°F and is greatest at temperatures above 90°F.
Management: Avoid applying these herbicides when temperatures are over 90°F. This may occur during morning or late afternoon hours when temperature inversions are likely to occur. Herbicides should not be sprayed during inversions when small spray droplets can become trapped in a layer of cooler air near the earth's surface. Use larger spray droplets to reduce evaporation, which can be accomplished by reducing spray pressure or increasing the nozzle orifice size.

The use of trade names is for clarity to readers and does not imply endorsement of a particular product, nor does exclusion imply non-approval. Always consult the herbicide label for the most current use requirements.

By: Sarah Lancaster, K-State Extension Weed Science Specialist

Management Considerations for August 2023

By Jason Warner, Ph.D., Extension Cow-Calf Specialist

Cow Herd Management

- For spring-calving cow herds:
 - ⇒ Monitor BCS through late summer, particularly on young females.
 - * Use the BCS Record Book from KSRE to record scores!
 - ⇒ 2–4-year-old females and thin females will respond most to early-weaning.
 - ⇒ If you plan to early-wean:
 - * Develop your plan for feeding and marketing calves.
 - * Prepare weaning/receiving pens and waterers in advance.
 - * If feeding early-weaned calves, test your forages and have your ration plan and ingredients in place 2-3 weeks prior to weaning.
- For late-summer and early-fall calving cow herds:
 - ⇒ Evaluate cows for BCS and adjust your plan to ensure mature cows are ≥ 5.0 and 2-4 year old females are ≥ 6.0 at calving.
 - ⇒ Review your calving health protocols as needed.
 - ⇒ The final 60 days prior to calving represents the last opportunity to add BCS economically.
 - ⇒ Have calving equipment cleaned and available to use as needed.
- Closely manage free-choice salt and mineral programs through late summer.
 - ⇒ Record date and amount of salt and mineral offered and calculate herd consumption on a pasture or group basis.
 - ⇒ Adjust how you are offering product to cattle if needed to achieve target intake.
 - ⇒ If consumption is 2X the target intake, then cost will be too!
- Continue to monitor bulls and their activity throughout the breeding season.
 - ⇒ If bulls are BCS ≤ 5.0 after breeding, consider supplementing to regain BCS going into fall.
 - ⇒ Monitor BCS, particularly on young bulls.
 - ⇒ Schedule breeding soundness exams for bulls used for fall service.

Calf Management

- If creep feeding calves, closely monitor intake and calf condition/fleshiness.
- Monitor calves for summer respiratory illness.
- Schedule any pre-weaning vaccination or processing activities.

General Management

- Evaluate grass growth and adjust your grazing plan as needed.
- Employ multiple strategies, chemistries for late-season fly/insect control.
- Begin taking inventory of harvested forages for fall feed needs.
 - ⇒ Use the forage inventory calculator (<https://www.agmanager.info/hay-inventory-calculator>).
- If planning to harvest corn silage, prepare your pile/bunker site and equipment.
 - ⇒ If using a custom harvester, communicate with them well in advance.
 - ⇒ Closely monitor whole plant moisture levels.
 - ⇒ Have silage tarps in place and ready to cover once harvest is complete.
- Use the Management Minder tool on KSUBeef.org to plan key management activities for your cowherd for the rest of the year.
- With high feeder calf prices, consider price risk management tools.
 - Visit with your local FSA and extension office if you plan to utilize CRP acres for emergency forage use or for information on other assistance programs.

Upcoming Events



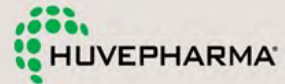
Ranch Management Field Days 2023



MUSHRUSH RED ANGUS
August 10 | Chase County

Registration starts at 3:30pm

Thank you to our sponsors:



More information to follow!

Turf & Ornamentals Field Day

Thursday, August 3, 2023

K-State Research & Extension Center

35230 W. 135th

Olathe, KS

This field day program is designed for all segments of the turf and ornamentals industry — lawn care, athletic fields, golf courses, nursery, landscape, and grounds maintenance. Included on the program are research presentations, problem diagnosis, and commercial exhibits. There will be time to see current research, talk to the experts, and get the answers to your questions.

- ⇒ Registration Deadline: July 25th
- ⇒ \$35 per person (includes lunch)
- ⇒ Information & Link to register: <https://www.kansasturfgrassfoundation.com/>
- ⇒ Pesticide recertification credit hours for commercial pesticide applicators

Topics

- Fine Fescue and Tall Fescue Trials
- Turf & Ornamentals Disease & Insect Update
 - New Zoysia Cultivar
- Weed Control Update & Pruning
- Turf and Landscape Equipment

Plant analysis for testing nutrient levels in corn (P.1 of 4)

By Dr. Dorivar Ruiz Diaz– Nutrient Management Specialist
From Agronomy eUpdate June 29th 2023, Issue 963

Plant analysis is an excellent in-season “quality control” tool. It can be especially valuable for managing secondary and micronutrients that do not have high-quality, reliable soil tests available, and for providing insight into how efficiently you are using applied nutrients.

Plant analysis can be used by Kansas farmers in two basic ways: for diagnostic purposes, and for monitoring nutrient levels at a common growth stage. Diagnostics can be done any time and is especially valuable early in the season when corrective actions can easily be taken. Monitoring is generally done at the beginning of reproductive growth.

General sampling guidelines:

- Plants are less than 12 inches tall: Collect the whole plant; cut the plant off at ground level.
- Plants more than 12 inches tall and until reproductive growth begins: Collect the top fully developed leaves (those which show leaf collars).
- After reproductive growth starts: Collect the ear leaves (below the uppermost developing ear), samples should be collected at random from the field at silk emergence.



Figure 1. Corn sampling during different growth stages. Photos by Dorivar Ruiz Diaz, K-State Research and Extension.

Plant analysis for testing nutrient levels in corn (P.2 of 4)

By Dr. Dorivar Ruiz Diaz– Nutrient Management Specialist
From Agronomy eUpdate June 29th 2023, Issue 963

Plant analysis for diagnostic sampling

Collecting specific plant parts is less important when sampling for diagnostic purposes than obtaining comparison samples from good and bad areas of the field.

Plant analysis is an excellent diagnostic tool to help understand some of the variation among corn plants in the field. When using plant analysis to diagnose field problems, try to take comparison samples from both good/normal areas of the field, and problem spots. This can be done at any growth stage.

Along with taking plant tissue samples, collecting a soil sample from both good and bad areas is also helpful when doing diagnostics. Define your areas, and collect both soil and plant tissue from areas that represent good and bad areas of plant growth. Soil samples can help define why a problem may be occurring. The soil sample may find certain nutrient levels are very low in the soil, helping to explain why a deficiency is occurring. However, other factors can also cause nutrient problems. Soil compaction, or saturation of soils for example, often limits the uptake of nutrients, especially potassium, which are otherwise present in adequate amounts in the soil.

Plant analysis for nutrient monitoring

For general monitoring or quality control purposes, plant leaves should be collected as the plant enters reproductive growth. Sampling under stress conditions for monitoring purposes can give misleading results and is not recommended. Stresses such as drought or saturated soils will generally limit nutrient uptake, and result in a general reduction in nutrient content in the plant.

How should you handle samples and where should you send the samples?

The collected leaves should be allowed to wilt overnight to remove excess moisture, placed in a paper bag or mailing envelope, and shipped to a lab for analysis. Do not place the leaves in a plastic bag or other tightly sealed container, as the leaves will begin to rot and decompose during transport, and the sample won't be usable. Most of the soil testing labs working in the region provide plant analysis services, including the [K-State Testing Lab](#). For questions about the plant tissue testing services at the K-State Testing Lab, email soiltesting@ksu.edu or call 785-532-7897.

What nutrients should be included in the plant analysis?

In Kansas, nitrogen (N), phosphorus (P), potassium (K), sulfur (S), zinc (Zn), chloride (Cl), and iron (Fe) are the nutrients most likely to be found deficient. Recently, questions have been raised concerning copper (Cu), manganese (Mn), and molybdenum (Mo), though widespread deficiencies of those micronutrients have not been found in the state. Normally the best values are the “bundles” or “packages” of tests offered through many of the labs. They can be as simple as N, P, and K, or can be all the mineral elements considered essential to plants. K-State offers a package that includes N, P, K, Ca, Mg, S, Fe, Cu, Zn, and Mn.

Plant analysis for testing nutrient levels in corn (P.3 of 4)

**By Dr. Dorivar Ruiz Diaz– Nutrient Management Specialist
From Agronomy eUpdate June 29th 2023, Issue 963**

What will you get back from the lab?

The data returned from the lab will be reported as the concentration of nutrient elements, or potentially toxic elements, in the plants. Units reported will normally be in “percent” for the primary and secondary nutrients (N, P, K, Ca, Mg, S, and Cl) and “ppm” (parts per million) for most of the micronutrients (Zn, Cu, Fe, Mn, B, Mo, and Al).

Most labs/agronomists compare plant nutrient concentrations to published *sufficiency ranges*. A sufficiency range is simply the range of concentrations normally found in healthy, productive plants during surveys. It can be thought of as the range of values optimum for plant growth. The medical profession uses a similar range of normal values to evaluate blood work. The sufficiency ranges change with plant age (generally being higher in young plants), vary between plant parts, and can differ between hybrids. A value slightly below the sufficiency range does not always mean the plant is deficient in that nutrient. It is an indication that the nutrient is relatively low. Values on the low end of the range are common in extremely high-yielding crops. However, if that nutrient is significantly below the sufficiency range, you should ask some serious questions about the availability and supply of that nutrient.

Keep in mind that any plant stress (drought, heat, soil compaction, saturated soils, etc.) can have a serious impact on nutrient uptake and plant tissue nutrient concentrations. A low value of a nutrient in the plant does not always mean the nutrient is low in the soil and the plant will respond to fertilizer. It may be that the nutrient is present in adequate amounts in the soil but is either not available or not being taken up by the plant for a variety of reasons. Two examples are drought, which can reduce plant uptake of nutrients and cause low nutrient values in the plant, and high-pH soils, which can cause low iron availability.

On the other extreme, levels above “sufficiency” can also indicate problems. High values might indicate over-fertilization and luxury consumption of nutrients. Plants will also sometimes try to compensate for a shortage of one nutrient by loading up on another. This occurs at times with nutrients such as iron, zinc, and manganese.

Table 1 (on the next page) gives the range of nutrient contents considered to be “normal” or “sufficient” for corn seedlings below 12 inches tall and for the ear leaf of corn at silking. Keep in mind that these are the ranges normally found in healthy, productive crops.

Plant analysis for testing nutrient levels in corn (P.4 of 4)

By Dr. Dorivar Ruiz Diaz– Nutrient Management Specialist
From Agronomy eUpdate June 29th 2023, Issue 963

Table 1 gives the range of nutrient contents considered to be “normal” or “sufficient” for corn seedlings below 12 inches tall and for the ear leaf of corn at silking. Keep in mind that these are the ranges normally found in healthy, productive crops.

Table 1. The range of nutrient contents considered “normal” or “sufficient” at two growth stages in corn.

| Nutrient | Unit | Whole Plant <12” tall | Corn Ear Leaf at Green Silk |
|-----------------|------|-----------------------|-----------------------------|
| Nitrogen (N) | % | 3.5-5.0 | 2.75-3.50 |
| Phosphorus (P) | % | 0.3-0.5 | 0.25-0.45 |
| Potassium (K) | % | 2.5-4.0 | 1.75-2.25 |
| Calcium (Ca) | % | 0.3-0.7 | 0.25-0.50 |
| Magnesium (Mg) | % | 0.15-0.45 | 0.16-0.60 |
| Sulfur (S) | % | 0.20-0.50 | 0.15-0.50 |
| Chloride (Cl) | % | Not established | 0.18-0.60 |
| Copper (Cu) | ppm | 5-20 | 5-25 |
| Iron (Fe) | ppm | 50-250 | 20-200 |
| Manganese (Mn) | ppm | 20-150 | 20-150 |
| Zinc (Zn) | ppm | 20-60 | 15-70 |
| Boron (B) | ppm | 5-25 | 4-25 |
| Molybdenum (Mo) | ppm | 0.1-10 | 0.1-3.0 |
| Aluminum (Al) | ppm | <400 | <200 |

Summary

In summary, plant analysis is a good tool to monitor the effectiveness of your fertilizer and lime program and is a very effective diagnostic tool. Consider adding this to your toolbox.

Article available online from Agronomy eUpdate at: https://eupdate.agronomy.ksu.edu/article_new/plant-analysis-for-testing-nutrient-levels-in-corn-551-4

For additional information on nutrient management, please reach out to one of our Extension Offices (Council Grove: 620-767-5136, Cottonwood Falls: (620) 273- 6491) or Dr. Dorivar Ruiz Diaz (ruizdiaz@ksu.edu)

Vegetables Produce Flowers But Not Fruit

By Dr. Cynthia Domenghini

From Kansas State University Horticulture Newsletter, July 4th, 2023, No.26



There are several reasons why healthy vegetable crops produce flowers and no fruit. Most squash, cucumbers and melons have separate male and female flowers on each plant. Usually, male flowers appear first in the season. Female flowers have a swollen area beneath the petals while male flowers have a narrow base. Check your plants to see if both flower types are present.

If male and female flowers are present, observe the area for pollinators. If few to no pollinators are present, vegetables with separate male and female flowers may not produce fruit. Using a paintbrush, you can pollinate the flowers by transferring pollen from a male flower to the stigma of the female flower. Mark that flower and notice if it is the only one that sets fruit. If this is the case, the problem is likely a lack of pollinators.

Pollinator activity can be inhibited by the weather. They are less active on cold or rainy days. Use of insecticides can also harm pollinators. If using herbicides, apply them in the evening when the flowers have closed for the day.

High temperatures can cause some vegetables to drop their blossoms prematurely. Tomatoes will stop producing fruit in temperatures above 95 degrees F. Production will resume once temperatures decrease. Ensure plants are receiving adequate water during this time.

Applying nitrogen promotes vegetative growth. However, excessive amounts can inhibit flower and fruit production. Follow fertilizer recommendations to avoid this.

If you have questions about this article or general horticulture, please reach out to one of our Extension Offices (Council Grove: 620-767-5136, Cottonwood Falls: (620) 273- 6491).

Flint Hills District Ag Producer Email List—We want YOU!

Hello Again!

Chelsea and I are continuing to create an email list of agricultural producers in Morris and Chase Counties in order to be able to share about events that have a quick turn-around time. Sometimes we receive information about events after our newsletter goes out and having an email list would provide us with a way to quickly get information out to people!

If you're interested in signing up for the email list or know of others who would be interested, please reach out to us by email or by calling one of the Extension Offices.

-Abby

Abby's email: agettinger@ksu.edu; 620-767-5136

Chelsea's email: chelse1@ksu.edu; (620) 273- 6491

Do you have program ideas? Send them our way!

Not only do we answer questions as they come into the office, but we can also work to coordinate a presentation or workshop that provides a deeper amount of information on a topic.

So! Do you have a natural resource-related, horticultural, or agricultural topic that you're interested in that you think others in the community would enjoy learning about, as well? Or, is there a hands-on skill you would like to learn more about? Let us know and we might have an expert in that area who would be able to provide instruction. The internet has been a part of sharing so many good resources, but I think one of the best parts of Extension is being able to have real people who can help you figure out a situation that is more complex than what you read about online or who can assist you in taking what you know about a hands-on skill and help you improve or apply it in real life. So, please feel free to reach out with your ideas!

-Abby

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K-STATE
Research and Extension



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