Issue 1034

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Extension Agronomy

eUpdate

01/09/2025

These e-Updates are a regular weekly item from K-State Extension Agronomy and Kathy Gehl, Agronomy eUpdate Editor. All of the Research and Extension faculty in Agronomy will be involved as sources from time to time. If you have any questions or suggestions for topics you'd like to have us address in this weekly update, contact Kathy Gehl, 785-532-3354 kgehl@ksu.edu, or Dalas Peterson, Extension Agronomy State Leader and Weed Management Specialist 785-532-0405 dpeterso@ksu.edu.

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1. Crabgrass could serve as an alternative cattle forage

In eastern Kansas, pasture is the most important livestock feed source. In systems with cool-season forages, a lack of forage may occur during the summer. Because cool- and warm-season grasses have different photosynthetic mechanisms, one option to extend the grazing season is to have pastures with warm-season forage grasses, such as crabgrass (*Digitaria* spp.), that produce most of the forage during hot months.

Crabgrass is a forage introduced to the United States in 1849. It is an annual species, but due to its high capacity to produce seeds, which allows reseeding, it is considered a perennial forage. Crabgrass is considered a weed by many producers, but it can be a beneficial option to feed cattle because of its high yield and palatability. Its forage quality is higher than other warm-season grasses, such as bahiagrass and bermudagrass. Crabgrass has a clump-type growth habit and, due to the presence of stolons (stems growing horizontally, which can produce roots), spreads aggressively. It can also be used as a cover crop.

Pasture Establishment

Crabgrass should be seeded in a clean area in spring when there is little chance of frost. Seeds should be drilled no deeper than ¼ inch. Seeds planted below ½ inch may result in a poor pasture stand. The seeds can also be broadcast, but it is recommended to cultipack after seeding to improve seed-soil contact and reduce loss due to heavy rainfall.

A good stand (dense and healthy) can be achieved by seeding 4 to 6 pounds of pure live seed per acre. With adequate moisture, seed germination begins when the soil temperature reaches 55°F for four to five consecutive days. Pasture establishment can be sped up through nitrogen fertilization when the seeds have germinated, and tillers are in the early stages. Nitrogen input improves tillering and, consequently, reduces runoff and controls weeds.

Weed Control

Controlling weeds is essential as weeds will compete with crabgrass for water, nutrients, and sunlight. The best way to control weeds is to stimulate growth by maintaining adequate soil fertility levels, which will result in a rapid establishment and soil cover. The faster the pasture is established, the less chance weeds have to grow. If crabgrass is growing well, shading (lack of sunlight) will limit weed emergence and development. In addition, adequate harvest management helps to control weeds by avoiding overharvesting. When the stubble heights are lower than 3 to 4 inches, the plant reserves may be compromised, reducing the capacity and the velocity of regrowth. Lower stubble height may result in thinner stands where weeds will find room to emerge.

Herbicides can also be used to control weeds in association with harvesting management. Before using any herbicide, always consult the label for application restrictions and instructions, such as recommendations about rates, timing, and grazing restrictions. Only allow grazing after the grazing restriction period has ended. These recommendations can be found in the K-State publication Chemical Weed Control for Field Crops, Pastures, Rangeland, and Noncropland, available online at https://bookstore.ksre.ksu.edu/pubs/chemweedguide.pdf.

Fertilization and Harvesting Management

Soil fertility directly affects forage production and quality. It is important to highlight that fertilization should be done based on soil test results. Thus, the first step is to take representative soil samples to support an adequate fertilization program. Contact your local extension agent for instructions about soil sampling and tests.

During the establishment phase, phosphorus is the most important nutrient. Phosphorus stimulates root development and tillering, accelerating the pasture establishment and reducing the chance of runoff, erosion, and weed infestation. In an established pasture, nitrogen is the most important nutrient as nitrogen increases forage yield and improves quality. Potassium enhances the nitrogen effect and needs to be taken into consideration in southeast Kansas, where potassium soil levels are commonly lower.

Harvest management is another factor that drives both forage production and quality. When forage plants are harvested, it stimulates the production of new leaves that have higher photosynthetic potential and nutritive value. In a rotational stocking system, the pasture should be grazed when the canopy height is not more than 12 inches to maintain high forage quality. Ideally, the best condition to graze a crabgrass pasture is when the canopy reaches 6 to 8 inches in height. At the same time, keeping the stubble height not lower than 3 to 4 inches is essential. The same recommendation can be used to define hay harvesting.

Combining fertilization and harvesting management may be an interesting option to improve forage yield and quality. A 2-year (2020 and 2021) study was conducted in Columbus, Kansas, to evaluate how five combinations between two harvest managements (harvested once or twice; H1 and H2, respectively) and three nitrogen rates (0, 100, and 200 lb/acre; N0, N100, and N200, respectively) affect the agronomic performance of two crabgrass varieties ('Mojo' and 'Quick-N-Big').

For Mojo, forage production was higher when two harvests were combined with nitrogen fertilization (100 or 200 pounds of nitrogen per acre). For the Quick-N-Big, nitrogen fertilization increased the forage production in both years regardless of the harvesting management (Figure 1a). The total digestible nutrients (TDN) varied little between treatments, with values ranging around 50% for Mojo and 51% for Quick-N-Big (Figure 1b).

In both varieties, crude protein increased when the pasture was harvested twice and was higher as more nitrogen was applied (Figure 1c). The positive effect of nitrogen fertilization and two harvests on the forage production and crude protein resulted in a higher crude protein production per acre, mainly when two harvests were combined with 200 pounds of nitrogen per acre (Figure 1d).

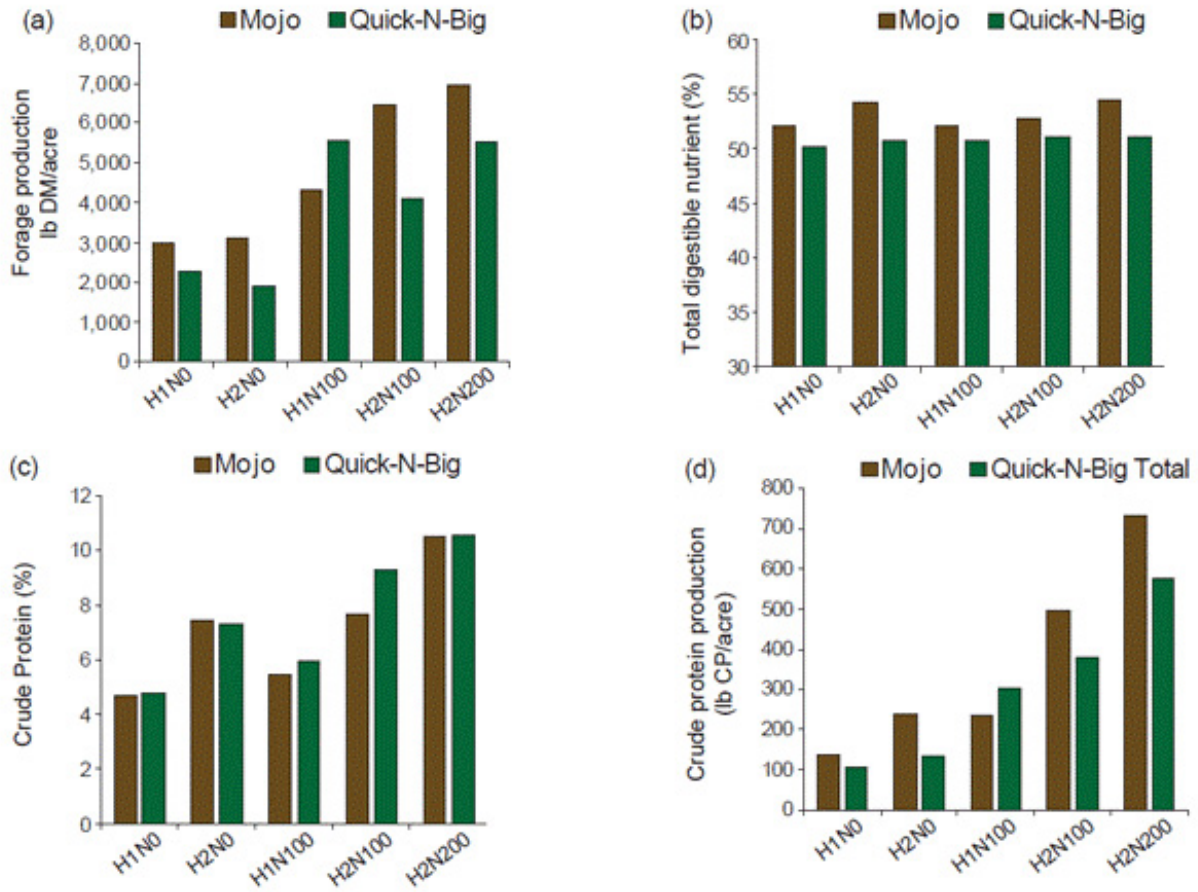

Figure 1. Effect of N fertilization and harvest management on forage production (a), total digestible nutrients (b), crude protein (c), and crude protein production (d) in 'Mojo' and 'Quick-N-Big'.

Harvesting management and nitrogen fertilization can increase forage production and improve forage quality; however, fertilizer prices must be considered. Keeping the cost of fertilizer in mind, the best management would be applying 100 pounds of nitrogen per acre with two harvests during the growing season. Nitrogen losses from mineral fertilizers are always a concern in forage systems, and split-applying nitrogen is an alternative to increase nitrogen-use efficiency. Thus, it is safe to apply 50 pounds after each harvesting, avoiding major losses due to weather constraints. This combination resulted in the lowest cost per ton of forage produced and still had a good quality.

This article is based on the K-State Research and Extension publication *MF3644 Crabgrass: An Alternative Cattle Forage*. An online version of the publication is available at https://www.bookstore.ksre.ksu.edu/pubs/MF3644.pdf, and copies can be ordered from the K-State Research and Extension Bookstore at https://bookstore.ksre.ksu.edu/

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2. The 2025 K-State Chemical Weed Control Guide is available online

In case you missed it…one of the most popular K-State Research and Extension publications is here! The 2025 K-State Chemical Weed Control Guide includes suggestions and guidelines for chemical weed control for field crops, pastures, rangeland, and noncropland, including product application rates and approximate prices. Please consult your local K-State Research and Extension agricultural agent for crops not listed.

How can I access the online version?

The online version of the 2025 K-State Chemical Weed Control Guide is available at:

https://bookstore.ksre.ksu.edu/pubs/SRP1190.pdf

You can also use the camera app on a mobile device and scan the QR code below to be directed to the 2025 Weed Control Guide.

When viewing the file in a web browser or in Adobe, bookmarks can be accessed to guide you to the first page of every section (options vary per program settings and device type).

How can I order copies?

Online orders for the 2025 Chemical Weed Control guide will be accepted and processed in mid-January after the books are printed. Orders can be placed using this link: https://bookstore.ksre.ksu.edu/item/2025-chemical-weed-control-for-field-crops-pastures-rangeland-and-noncropland_SRP1190

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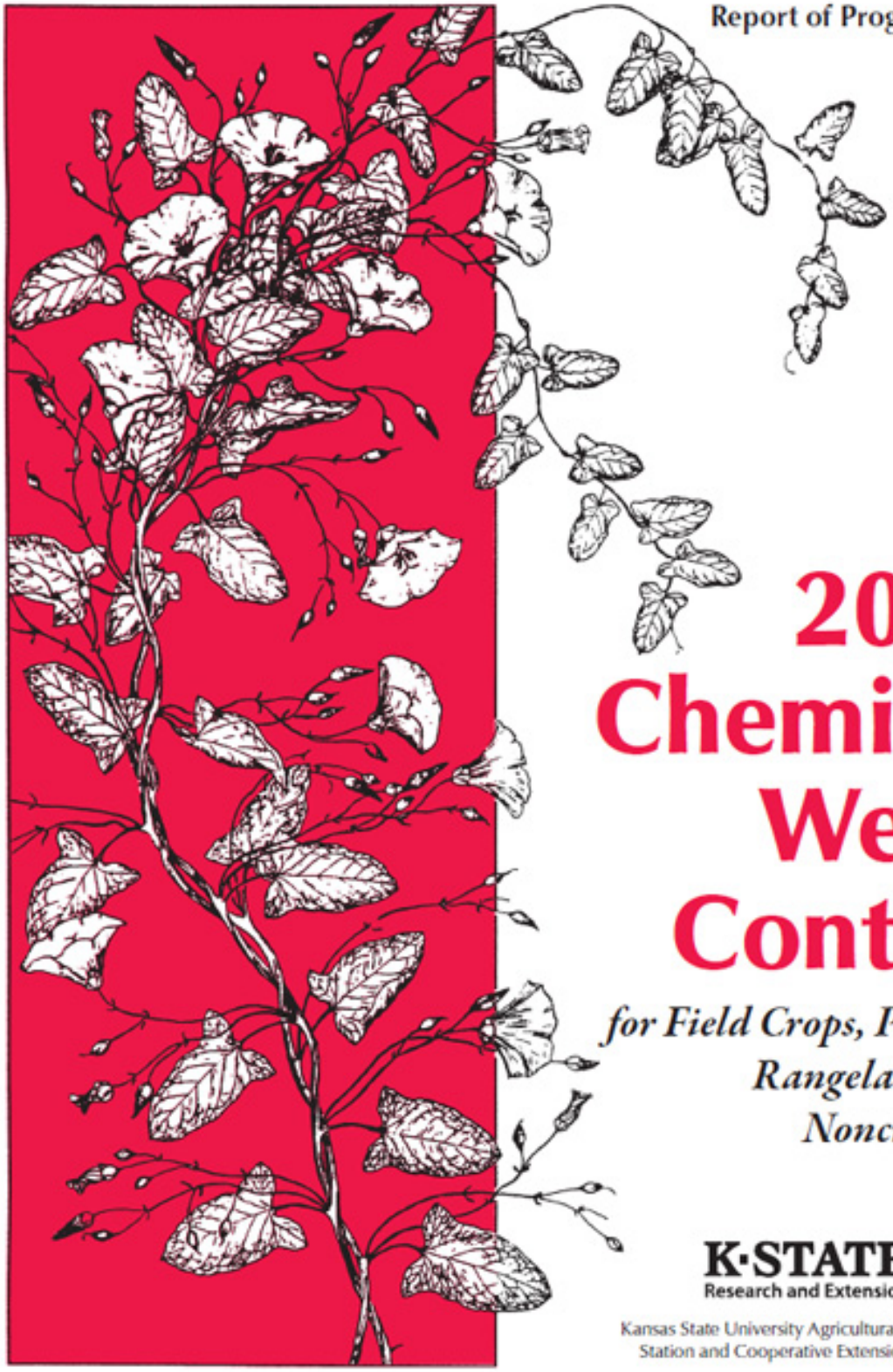

2025 Chemical Weed Control

for Field Crops, Pastures, Rangeland, and Noncropland

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3. K-State's Testing Ag Performance Solutions (TAPS) hosts its inaugural banquet

Kansas State University will host the first Kansas TAPS Banquet in Dodge City, Kansas, on January 18, 2025, marking a significant milestone for this producer-led farm management competition. Since its launch in October 2023, Testing Ag Performance Solutions (TAPS) has made remarkable progress in addressing water challenges and promoting sustainable irrigation practices, engaging 34 competition teams with 98 contestants from 8 states in its inaugural year. This exciting event will reveal the winners of the 2024 TAPS program and unveil the upcoming 2025 competition, expanding the program to include a new site in Garden City.

The event is open to producers, industry professionals, educators, students, and community members. It's a unique opportunity to engage with groundbreaking agricultural research and learn about practical, real-world solutions to today's farming challenges. Attendance is free, but an RSVP is requested for an accurate meal count. You can register online at https://tinyurl.com/24KSUTAPSAwards.

Event Details

Date and Time: January 18, 2025
5:00 PM – Social
6:00 PM – Meal
7:00 PM – Awards

Location: Boot Hill Casino and Resort Conference Center, Dodge City, Kansas.

Agenda Highlights:

- Recognition of 2024 TAPS winners in four award categories:
  - Overall Most Profitable
  - Most Profitable at or Below Q-Stable
  - Highest Input Use Efficiency
  - Greatest Grain Yield
- Reveal the 2025 Garden City TAPS competition, marking a significant program expansion.
- Networking opportunities for producers and agricultural stakeholders.

Cash awards will be presented to the winners of each category, honoring their exceptional performance in farm management and decision-making during the 2024 competition.

What is TAPS?

The Testing Ag Performance Solutions (TAPS) program is an innovative real-world farm management competition that combines research and hands-on experience to enhance agricultural productivity and sustainability. TAPS bridges foundational study and practical application to address the evolving needs of today's farmers and delivers on K-State's land grant mission to deliver practical research-backed education that contributes to the well-being of Kansans. Through this program, participants make critical management decisions—such as crop insurance, planting date and population, hybrid selection, irrigation, nitrogen application, and grain marketing—on replicated test plots.

Results are scaled to represent 2,000-acre farms, giving participants a realistic understanding of their

decisions' financial and agronomic outcomes. This structure provides meaningful insights into managing at-scale farming operations, making TAPS a valuable tool for farmers and industry professionals.

Addressing the Challenges of Tomorrow

TAPS plays a pivotal role in addressing one of Kansas agriculture's greatest challenges: the decline of the Ogallala Aquifer. TAPS empowers participants to explore innovative solutions and improve input-use efficiency by promoting sustainable water management and holistic decision-making.

"TAPS isn't just about making decisions—it's about seeing the ripple effects of those decisions on farm profitability and sustainability," says Daran Rudnick, Director of Sustainable Irrigation at K-State. "This program opens up a space for producers to experiment with new technologies, network with peers, and take-home lessons that can transform their operations."

Thanks to the collective efforts of faculty and extension specialists from K-State's Agronomy and Bio and Ag Engineering departments, Western Kansas Research-Extension Centers, and KCARE, TAPS has quickly become a catalyst for interdisciplinary research and outreach. Partnerships with over 30 community organizations, including seed companies, technology providers, and government agencies, have been instrumental in advancing TAPS' mission.

For more information or to register for the banquet, please visit https://www.k-state.edu/taps/ or contact Renee Tuttle at rstuttle@ksu.edu or (620) 805-9045.


YOU'RE INVITED
2024
KSUTAPS
Awards Banquet
Join us for an exciting evening of celebration as we honor the winners of our inaugural farm management competition and express our gratitude to the incredible sponsors who made it all possible!
Saturday
18 January, 2025
5 PM Social
6 PM Meal
7 PM Awards
Boot Hill Casino & Resort Conference Center
Dodge City, Kansas
RSVP Requested by January 10:
https://tinyurl.com/24KSUTAPSAwards

4. Cover Your Acres Winter Conference, January 21-22 in Oberlin

K-State Research and Extension will host the 22nd annual Cover Your Acres Winter Conference for crop producers and consultants on January 21 and 22. The conference will take place in the traditional in-person format at the Gateway Civic Center in Oberlin, KS.

Cover Your Acres is a producer-driven meeting focused on new ideas and research-based updates in crop production in northwest Kansas and the Central High Plains region.

The conference, which typically draws more than 400 attendees from Kansas and other states, highlights the latest technology, methods, and conservation practices to improve crop production in the region. This year's conference will feature university specialists and industry representatives discussing what's driving profitability in northwest Kansas farms.

Session topics and speakers

- **Determining equitable lease arrangements** – Mark Wood and Glenn Conover
- **Dryland rotation agronomics and economics** – Lucas Haag
- **Make your plan: Weed Management 2025** – Jeanne Falk Jones
- **The best bets to place your fertilizer dollars**– Dorivar Ruiz Diaz
- **Improving dryland cropland with manure** – Dave Poss
- **Ogallala Aquifer – Facts, folklore, and what is Q-stable** – Brownie Wilson
- **Evolution of wheat viruses/End user-focused wheat production** – Allan Fritz
- **Machinery economics – When to keep, when to trade** – Brady Brewer
- **Forage production management and economics** – John Holman

The same programs will be offered on both days of the conference. Participants attending both days will find catching most or all programs easier. On Tuesday evening, the sessions are followed by a social where attendees can visit with industry representatives and conference speakers while enjoying hor d'oeurves.

Online registration is open. The fee is $60 for Tuesday, January 21, $55 for Wednesday, January 22, or $80 for both days. **After January 15**, and for walk-ins, the cost is $80 per day. The conference fee includes lunch, morning and afternoon refreshments and educational materials. The program will offer several continuing education unit (CEU) credits for Certified Crop Advisors and 1A for Commercial Applicators credit.

Major sponsors for the conference include AKRS Equipment, Hoxie Implement Co., SurePoint Ag Systems, Lang Diesel, and 4G Farm and Sales.

To view the conference details, lodging accommodations, and online registration, visit www.northwest.ksu.edu/coveryouracres. For questions, call 785-462-6281.

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5. Don't miss the 2025 Kansas Corn and Soybean Schools

For the second year, Kansas Corn and Kansas Soybean are partnering with K-State Research and Extension to offer the Kansas Corn and Soybean Crop Schools. These full-day winter learning sessions will feature informative presentations for both crops.

The schools will cover several issues and opportunities for growers and are tailored to each region. Topics include weed control, insect resistance, fertility management, disease management, late-planting seasons, economics, and farm policy. Full agendas for each location are included below. Morning refreshments and a hot lunch are provided at these in-person schools. CCA and Commercial Pesticide Applicator credits have been applied for.

Each program will start at 9:00 AM (check-in at 8:30 AM) and conclude at 3:00 PM.

January 14 (Tuesday)
Geiger Ag, 1758 Coronado Rd., Highland, KS 66035

8:30 a.m.	Registration opens
9:00 a.m.	Welcome - Kansas Corn & Kansas Soybeans
9:10 a.m.	"Agronomics for corn & soybean", Dr. Rachel Cott and Luiz Felipe Almeida, K-State
10:00 a.m.	"Summary on disease updates" – Dr. Rodrigo Onofre, K-State
10:50 a.m.	Break
11:10 a.m.	Summary on fertility" – Dr. Dorivar Ruiz Diaz, K-State
12:00 p.m.	Lunch (updates from both KS Corn & Soybeans)
1:10 p.m.	"Herbicide strategies" – Dr. Sarah Lancaster, K-State
2:00 p.m.	"Ag Economics" - Tim Strunk, Tyner Insurance Group
3:00 p.m.	Wrap up

January 15 (Wednesday)
Southeast Extension and Research Center, 25092 Ness Rd., Parsons, KS 67357

8:30 a.m.	Registration opens
9:00 a.m.	Welcome - Kansas Corn & Kansas Soybeans
9:10 a.m.	"Soil health and crop agronomics", Dr. Gretchen Sassenrath, K-State
10.00 a.m.	Summary on fertility" – Dr. Dorivar Ruiz Diaz, K-State
10:50 a.m.	Break

11:10 a.m. "Herbicide strategies" – Dr. Sarah Lancaster, K-State

12:00 p.m. Lunch (updates from both KS Corn & Soybeans)

1:10 p.m. "Summary on disease updates" – Dr. Rodrigo Onofre, K-State

2:00 p.m. "Southeast Kansas Farm Profitability & Tax Strategies" – Dillon Rapp, KFMA

3:00 p.m. Wrap up

January 16 (Thursday)
AGCO, W. Lincoln Blvd. #8807, Hesston, KS 67062

8:30 a.m. Registration opens

9:00 a.m. Welcome - Kansas Corn & Kansas Soybeans

9:10 a.m. "Agronomics for corn & soybean," Dr. Rachel Cott and Luiz Felipe Almeida, K-State

10.00 a.m. Summary on fertility" – Dr. Dorivar Ruiz Diaz, K-State

10:50 a.m. Break

11:10 a.m. "Herbicide strategies" – Dr. Sarah Lancaster, K-State

12:00 p.m. Lunch (updates from both KS Corn & Soybeans)

1:10 p.m. "Summary on disease updates" – Dr. Rodrigo Onofre, K-State

2:00 p.m. "Wrapping arms around Corn & Soybean Markets," Ted Nelson, StoneX

3:00 p.m. Wrap up

January 17 (Friday)
Buffalo Bill Cultural Center, 3083 US-83, Oakley, KS 67748

8:30 a.m. Registration opens

9:00 a.m. Welcome - Kansas Corn & Kansas Soybeans

9:10 a.m. "Agronomic focus with on-farm profitability", Dr. Chad Godsey, Godsey Precision Ag

10.00 a.m. Summary on fertility" – Dr. Dorivar Ruiz Diaz, K-State

10:50 a.m. Break

11:10 a.m. "Herbicide strategies" – Dr. Sarah Lancaster, K-State

12:00 p.m. Lunch (updates from both KS Corn & Soybeans)

1:10 p.m. "Summary on disease updates" – Dr. Rodrigo Onofre, K-State

2:00 p.m. "Corn and Soybean markets," Dr. Dan O'Brien, K-State

3:00 p.m. Wrap up

Registration for all locations is open at https://kscorn.com/Schools/. These are free events, but please register by January 9 if possible.

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