

# McPherson County

K-STATE RESEARCH AND EXTENSION NEWS

September 2024



Photo Credit: KSRE McPherson County

## Family & Community Wellness

CHUCK LAUGHLIN  
COUNTY EXTENSION AGENT  
FAMILY & COMMUNITY WELLNESS

### McPherson County Calendar – Online

The McPherson County Calendar is here for public events, seminars, business sponsored events, etc. throughout the county.

There is NOT a functionality to add personal events (i.e. specific business internal meetings, garage sales, sale of personal items, etc.).

Calendar events will be added on a batch process so they will not show up immediately.

To ensure the accuracy of information for your event, calendar items must be entered through the link and will not be taken via phone or email.

View the list of events at <https://www.mcpherson.k-state.edu/>



### Ready to take 2025 Events!

Visit <https://tinyurl.com/MCAddEvent> or scan the QR code

<http://>



Enter **PUBLIC** Event Information. Information like event time, location and purpose help users navigate events much easier!



Upload A Flyer or A Graphic (if applicable)



Sit back and relax!



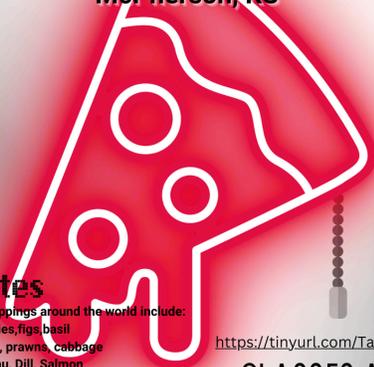
SCAN ME



# TEACH & TASTE

## Pizza Pot Pie

September 11, 2024  
6:30 PM  
McPherson County Extension Office  
600 W. Woodside  
McPherson, KS




**Brain Bites**  
Favorite pizza toppings around the world include:

- Italy: anchovies, figs, basil
- Japan: Squid, prawns, cabbage
- Australia: Emu, Dill, Salmon
- Brazil: Boiled eggs, stroganoff, broccoli
- Costa Rica: Coconut and shrimp
- Israel: Corn and Yogurt

<https://tinyurl.com/TandTSeptember24>

**CLASSES ARE FREE**

K-STATE Research and Extension | McPherson County

Kansas State University Agricultural Experiment Station and Cooperative Extension Service K-State Research and Extension is an equal opportunity provider and employer.

## Teach & Taste – September

September will include a special bonus feature so be sure to sign up and join us to see what it's all about!

<https://tinyurl.com/TandTSeptember24>

## The Science of Freezing Food by Karen Blakeslee



**Photo: Newell Brands, Inc.**

Freezing food is an easy way to preserve high quality food with maximum nutritional value. But food in the freezer doesn't last forever as changes will occur during storage.

Freeze food as soon as possible after harvest to stop chemical compounds, called enzymes, that cause deterioration and spoilage. Enzymes are naturally in foods and must be inactivated to stop loss of color and nutrients, as well as flavor changes. Blanching vegetables is an important step to inactivate enzymes. In fruit, color changes are prevented by using pure ascorbic acid (vitamin C) or a commercial ascorbic acid mixture such as Fruit Fresh®.

Because of high water content in fruits and vegetables, texture changes occur. Water expands when it is freezing, which ruptures food cell walls. Freezing food quickly will help reduce texture damage. Don't overload the freezer with unfrozen food and keep the freezer as cold as possible, at least 0°F or below.

Over time, food loses moisture during freezing which leads to freezer burn. Use packaging designed for freezing to reduce this problem.

Freezing does not kill bacteria; it only slows it down. When food thaws, any bacteria present will become active again. Always inspect food and packages carefully before use.



### First FRIDAY e-CALL

Global Exporting- Discovering New Markets  
Laura Lombard, Director, International Division,  
Kansas Department of Commerce

**Join Us September 6, 2024**  
9:30-10:30 am CT

Register Today  
<https://ksre-learn.com/ecall>

K-STATE  
Research and Extension

### Remote Work Wednesdays



Remote Work and Building Culture: Lessons Learned  
Brent O'Connor  
Director of Engineering  
Canopy

**Join Us September 11, 2024**  
Noon - 1:00pm

Register Today  
<https://ksre-learn.com/remote-work>



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## **Business Builder Grant Opportunity**

**by Karen Blakeslee**

## **APPLY NOW! Business Builder grants**



**\$5,000-\$50,000**

**Deadline October 15**

[heartlandfoodbusiness.org/business-builder](http://heartlandfoodbusiness.org/business-builder) →

A new grant opportunity called the Business Builder grant was recently announced by the USDA through the Heartland Regional Food Business Center. The grant will support local and regional food enterprises across the supply chain, from suppliers to buyers.

This program is designed to promote business expansion, job creation, business capacity building, and increase local products in the local market throughout the Heartland Region, including Kansas. Please share this opportunity with partners, entrepreneurs, and others across Kansas who may benefit.

The grant provides the chance to be awarded \$5,000 to \$50,000 that can be used for consultants, staffing for projects, supplies, equipment and more! The deadline for applying for this grant is Oct 15, 2024, and estimated awards will be announced in early 2025.

Contact Chuck Laughlin with any questions.

## **Drying Foods at Home**

**by Karen Blakeslee**

Drying, or dehydrating, foods at home can help extend the shelf-life of seasonal produce, preserve more nutrients in foods, and help provide shelf-stable foods that are easy to store. Interest in drying foods has increased with more affordable equipment options.

One method that has gained momentum is freeze drying foods at home. This method uses a specialized piece of equipment that uses a combination of vacuum pressure and heat to dry food. The first stage freezes food to -40°F which converts moisture to ice crystals. Then, under vacuum, the trays of food are heated to convert ice crystals to a steam vapor. This vapor is removed and 90 to 95% of the moisture leaves the food. This process can take hours to days depending on the food.

The cost of home freeze dryers can range from \$2,400 and up depending on vendor, model, accessories, etc.

While freeze drying produces very dry food product, it does not kill bacteria. So, it is important to handle food safely to prevent contamination or cross-contamination. It is also important to read the instruction manual for the equipment to learn about specific guidelines and safe operating procedures.



## **Preserving Tomatoes after a Fall Frost or Freeze**

**by Karen Blakeslee**

Tomato plants may still produce fresh tomatoes into the Fall season. But, if the tomato vine is dead or killed by a frost or freeze, those tomatoes are not safe for canning. The pH, or acidity, changes in this situation to increase the pH above 4.6. Therefore, the safest choice to preserve these affected tomatoes is by freezing or dehydrating. Unripe, or green, tomatoes can be preserved just like ripe tomatoes. So when canning them they still require acidification.



Here are some ideas to can green tomatoes.

Pickled Green Tomato Relish

Pickled Sweet Green Tomatoes

Piccaililli

Fall Garden Relish

Rummage Relish

Oscar Relish

Green Tomato Pie Filling

Tomatillo Green Salsa—may use green tomatoes instead of tomatillos

Spiced Green Tomatoes

## How to scan a QR Code from an image on a smartphone?

QR codes have quickly become a part of everyday life. How many times do you get a QR code in your email or on social media on your phone and sit there asking yourself how do I view the link when I can't scan it from my phone?

Well, try this...

### iOS

1. Take a screenshot of the QR code.
2. Open the picture/screenshot on your phone gallery.
3. Touch the **live text detection icon** on the bottom right corner of the image.
4. Touch the QR Code and a box will popup showing "Open in Safari" (or whichever browser you have set as default on your device).



2024 Calendars are available at the McPherson County Extension Office. Come by and pick up your copy while supplies last.

**The 2025 Calendar is in process. You can start entering your 2025 events using the online calendar link anytime.**



To schedule time with Chuck follow the link below or scan the QR code.

<https://calendly.com/claughlin-ksu/meeting-with-chuck>

### County Connection E-News

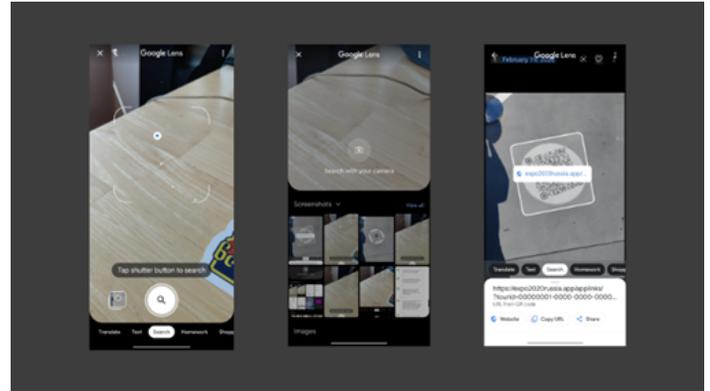
To register to receive updates on upcoming events, calendar updates, webinars, senior and military discounts available, county resource phone numbers, as well as tips and tricks to make life easier.

### Android

Here's how to do it in 2 ways–

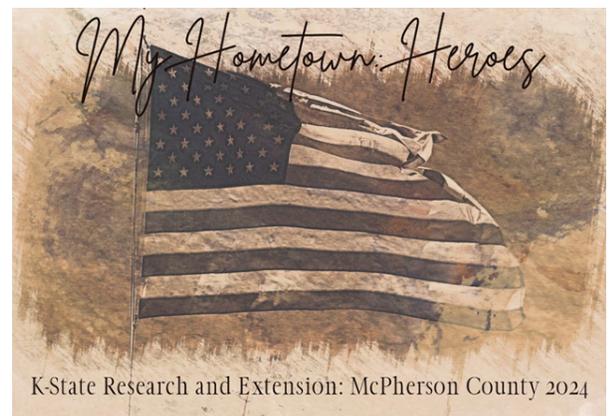
With Google Lens:

- Launch the Google Lens application
- Choose the image from the gallery
- A popup link will appear once the app detects the QR Code
- Click the link to be redirected to the website or content



On phone gallery:

- Open the picture on your phone gallery
  - On the top right corner, tap the Google Lens icon
  - A link will appear once it detects the QR Code
- ⚡ Pro tip: If you took a quick photo and can't scan the QR Code, try to sharpen the image online to fix the blur.



County Connection Sign-Up



<http://eepurl.com/iicSFn>

# 4-H YOUTH DEVELOPMENT

SHYANNE JONES  
COUNTY EXTENSION AGENT  
4-H YOUTH DEVELOPMENT

## September 2024

- 9/3-4 – Static State Fair Entries need to be delivered to extension office
- 9/17-18 – Static State Fair Entries need to be picked up from the extension office
- 9/25-27 – Shyanne will be out of office, so plan ahead with your record book questions
- 10/1 - Record books, Pin applications, Key Awards, I Dare You's, Family of the Year Nominations due to extension office
- 10/1 - Enrollment begins!
- 10/1 - Digital copies for calendar selected photos due to Shyanne!
- 10/2-4 Projects selected for County Courthouse display are brought to the extension office
- 10/3 - 4-H Council, 7pm @ Extension office

### Get Published

**Have project news or reports of fun 4-H happenings? Please email or bring in any articles to Lauralee at [Lhelm@ksu.edu](mailto:Lhelm@ksu.edu) by September 23rd to get them into the Newsletter.**



### Photography Project:

If you were selected to have your photo be in the 2025 Extension Calendar, you need to submit digital copies of your photo to Shyanne by **OCTOBER 1st!**



### GUIDE TO SURVIVING McPHERSON COUNTY 4-H!

Some helpful hints to prevent common problems we've faced this year:

**[MP 4-H Survival Guide.docx](#)**

### YOUTH ENTREPRENEUR SIDEWALK SALE

The Ark Antiques and Flea Market will host a Sidewalk Sale on October 12th from 11am – 1pm with a booth fee waived for those 18 and under. Those of you who sell arts and crafts, photography, etc., this is a great opportunity to get your name out!

To register:

**[www.thearkmcperson.com/outdoor-market](http://www.thearkmcperson.com/outdoor-market)**



### National 4-H Conference and Youth 4-H Youth Leadership Council Applications

**Submitted by Beth Hinshaw**

The Youth Council Application and National 4-H Conference Application will be combined again this year, with applicants indicating if they are applying for one or both opportunities.

Any Kansas 4-H member between the ages of 14 and 18 before January 1, 2025, may apply as a Council Rep, and those 15-18 before January 1, 2025, may apply for National Conference.

This year's KYLF delegation will elect representatives from the four extension program areas (NE, NW, SE, SW) for one-year terms on the council. Up to 6 National Conference Delegates will be selected through an interview prior to KYLF and they serve a two-year term on council.

Application information for the State 4-H Youth Leadership Council and National 4-H Conference is on the web and the deadline to apply is October 1, 2024.

**State 4-H Youth Leadership Council: <https://www.kansas4-h.org/4-h-programs/teen-leadership-opportunities/youth-leadership-council/index.html>**

**National 4-H Conference: <https://www.kansas4-h.org/events-activities/conferences-events/national-4-h-conference/index.html>**





## **4-H Judge Recruitment**

### **Interested in Judging?**

Adults interested in judging county and state 4-H projects, including animal exhibits (livestock, horse, dog, rabbit, etc. shows), static exhibits, communications and 4-H Day events, are invited to register for the Kansas 4-H Judges Database. By completing the online judges registration process, you are agreeing to be screened according to the Kansas 4-H Code of Conduct and policy. Once the screening process is complete, your information will be made available to local extension units. Staff interested in hiring you to judge will contact you directly.

### **CLICK HERE TO REGISTER**

**[https://kstate.qualtrics.com/jfe/form/SV\\_b449nE1Noa4NfBY](https://kstate.qualtrics.com/jfe/form/SV_b449nE1Noa4NfBY)**

This 4-H Judge Registration system is open until September 30th, 2024 at 11:59 PM and will re-open again on July 1, 2025.

### **4-H Judges**

4-H events and fairs are often used to provide youth with opportunities to have their work judged against a set of standards. The evaluation of an exhibit should be a positive and motivating part of the total 4-H experience. To plan, practice, and present a finished product is to “learn by doing.” The exhibit is not an end in itself, nor does it illustrate all of the learning that has taken place during the 4-H year.

An important goal of 4-H is to teach skills to young people that they can use now, as a youth, and in later life. Standards of excellence help 4-H’ers to evaluate the skills they are learning. Standards of excellence can be useful for products (skirts, cookies, tomatoes, livestock, etc.) and skills (speaking, decision making, demonstrating, etc.).



### **48 Hours of 4-H 2024** **Submitted by Beth Hinshaw**

We hope every Extension Unit will join us this fall in seeing just how much we can give back to our communities! The weekend after National 4-H Week is the perfect opportunity to set up a service project. Invite your friends, clubs, adult volunteers, and 4-H Alums too!

When: October 12-13, 2024

Who: 4-H Members, 4-H Clubs, Friends, Adult Volunteers, Parents, 4-H Alumni

***It's time to make plans for your club to participate.***

**48**

**K-STATE** |   
Research and Extension

**#484H**



# AGRICULTURE & NATURAL RESOURCES

SHAD MARSTON  
COUNTY EXTENSION AGENT  
AGRICULTURE AND NATURAL RESOURCES



With fall just around the corner, our thoughts/plans change for the closing months of the year. No matter what form of Agriculture you are in, September is a time to start preparing for the colder months to come. Wheat producers are adapting their ground for the important fall planting of Hard Red Winter Wheat and all that it entails. On the other hand, row crop farmers are gearing up for the fall harvest of corn, soybeans and milo. While the livestock producers start plans to wean spring born calves and make all the preparation planning it takes to care for their livestock during the hard winter months. Successful producers make sure their operations can complete all fall activities. That includes field work and replenishing winter feed supplies before the unpredictable weather comes in winter. As for the others, now is the time to capitalize on the fall beauty of gardens and flower beds. September is also the best time to fertilize our cool-season grasses, aerate our yards and seed or over-seed our lawns. Updating lawns this time of year will make a big impact come next spring and summer. Gardeners, remember to replant cool season vegetables that can extend your gardening fun for the next couple of months. Be on the lookout for attractive flowers and trees this time of year, as they reach their peak and can be enjoyed by all. No matter what your projects are for the fall, K-State Research and Extension is here to answer any of your challenges with researched based, unbiased information. Stop in our office and look through the many isles of fact sheets over endless topics on subjects of Agriculture. Remember, we are here to help you. *Shad*

## Horticulture News

### September is a great time to Fertilize your lawns by Shad Marston

A healthy lawn adds value to your home and improves the quality of the environment. Vigorously growing lawns filter out air pollution, slow movement of chemicals and fertilizers into surface water, prevent soil from washing away, and release life-sustaining oxygen. Most lawn grasses require some fertilizer every year to keep them strong and actively growing. Appropriate amounts help maintain turf vigor, but too much fertilizer can cause problems. For cool-season lawns, most of the fertilizer should be applied in the fall. Fescue, bluegrass and ryegrass benefit most from fall-applied nitrogen applications. September is the most important time. N applied during September helps thicken the stand, and encourages development of a healthy root system. A November application (at about the time of the final mowing of the season) helps the turf build food reserves. This enables the lawn to green up earlier in the spring, without encouraging the excessive shoot growth that often accompanies early spring N applications. Fertilize your warm-season grasses in late spring and /or summer. This is just the opposite of cool-season grasses. Fertilizing these grasses too early encourages growth of cool-season weeds. The best time to fertilize bermudagrass and zoysia grass would be to wait until next year between May and August, and buffalo grass then in June. Choose a slow-release nitrogen fertilizer for spring and early fall applications and a quick-release nitrogen fertilizer for late fall. Do not apply fertilizers that contain weed killers or insecticides unless they are needed.

#### Figuring out how much fertilizer to apply:

The secret to a healthy lawn is applying the correct amount of fertilizer. The most common application is 1 pound of actual nitrogen per 1,000 square feet (width X length = Sq. Ft.), which can be determined using the table below. First, know the nitrogen content of the product you are using. Nitrogen is the first number in the three-numeral ratio on the product label. For example, a 23-6-3 fertilizer product contains 23 percent nitrogen. Look for this number in the top row of the table.

In the left column, find the total square footage of the area to be fertilized. This is the total area calculated in Step 2. The numbers in the chart show the amount of fertilizer in pounds. Use this information to figure out how many pounds of fertilizer you need to cover your entire yard. For example, if you select a product containing 23 percent nitrogen and your yard is 10,000 square feet, you would need to apply 43 pounds of fertilizer.

After fertilizing, apply about a half-inch of water to move nutrients into the topsoil where they are more readily available to the grass. Do not apply fertilizer when heavy rain is expected. A drop spreader rather than a rotary spreader should be used when applying fertilizer near open water.

Lawn Fertilizer Table

Sq. Ft.	Nitrogen content of fertilizer product (%)															
	6	9	10	18	22	23	25	27	28	30	33	34	35	37	39	46
1,000	17	11	10	6	5	4	4	4	4	3	3	3	3	3	3	2
2,000	33	22	20	11	9	9	8	7	7	7	6	6	6	5	5	4
3,000	50	33	30	16	14	13	12	11	11	10	9	9	9	8	8	7
4,000	67	44	40	21	18	17	16	15	14	13	12	12	11	11	10	9
5,000	83	56	50	26	21	21	20	19	18	17	15	15	14	14	13	11
6,000	100	67	60	32	27	25	24	22	21	20	18	18	17	16	15	13
7,000	117	78	70	37	32	30	28	26	25	23	21	21	20	19	18	15
8,000	133	89	80	42	36	34	32	30	29	27	24	24	23	22	21	17
9,000	150	100	90	47	41	38	36	33	32	30	27	26	26	24	23	20
10,000	167	111	100	53	45	42	40	37	36	33	30	29	29	27	26	22

## **Kansas Forest Service Tree, Shrub Seedling Sale Opens Aug.30th**

The Kansas Forest Service's Conservation Tree Planting Program offers tree and shrub seedlings, as well as other items for use in conservation plantings.

Many other native and a few non-native species are offered through the conservation program that will thrive in Kansas and surrounding states.

The fall distribution offers only container-grown seedlings and orders are accepted from August 30th-October 15th, 2024. While, the spring distribution offers both bare root and container-grown seedlings for sale. Orders are accepted January 5 through May 1. Orders are shipped or picked up beginning in Mid-March.

Planting trees and shrubs in the fall presents several benefits over spring plantings, including less pressure from insects, disease and weeds. Additionally, seedlings planted in the fall have lower moisture demands than spring plantings and soils are typically drier in the fall as compared to wet or saturated soils in the spring, which restrict field preparation and planting activities. For more information on the Conservation Tree and Shrub program or to place an order beginning on Aug. 30, please visit [https://www.kansasforests.org/conservation\\_trees/](https://www.kansasforests.org/conservation_trees/)



*Picture taken by Shad Marston, East side of McPherson County Extension Office during a past Tree Planting Program.*

## **Farming and Ranch News**

### **Register Now For K-State Beef Stocker Field Day**



THURSDAY, SEPT. 26, 2024 • 9:30 A.M.  
KSU BEEF STOCKER UNIT • MANHATTAN, KS

Join us in celebrating our  
**25TH ANNIVERSARY**  
Register at [KSUBeef.org](https://www.asi.k-state.edu) or 785-532-1267  
**REGISTRATION FEE: \$25**  
After Sept. 13 registration is \$35

Event Sponsored By:  
K-STATE  
HUVEPHARMA

Come help us celebrate the 25th KSU Beef Stocker Field Day, which will be hosted on Thursday, September 26, at the KSU Beef Stocker Unit in Manhattan. The day will start at 9:30 a.m. with registration and coffee and will conclude with a good old-fashioned Prairie Oyster Fry and Call Hall ice cream at 4:45 p.m.  
The schedule is as follows:

- 9:30 am Registration/Coffee
- 10:00 am Introductions
- 10:15 am 25 Years: Looking back and moving forward- Dale Blasi, K-State
- 10:30 am Beef Cattle Outlook - Glynn Tonsor, K-State
- 11:15 am Beef on Dairy - Opportunities and Challenges  
David Clawson, High Plains Ponderosa Dairy  
Jason Shamburg, Kansas Dairy Development, Inc.  
Dr. Tera Barnhardt, Heritage Vet Partners  
Moderator: Wes Ishmael, Hereford World Executive Editor
- 12:30 pm Barbeque Brisket Lunch - View Posters
- 1:00 pm Coccidiosis: The Silent Thief Robbing Profits in your Stocker Operation - Joe Dedrickson, HuvePharma, Inc.
- 2:00 pm Recommendations for Managing Calves the First 30 Days on Feed - Dan Thomson, Production Animal Consultation (PAC)
- 2:45 pm Break
- 3:15 pm Future Trends in the Kansas Cattle Feeding Industry - Justin Waggoner, K-State
- 4:00 pm Rethinking Your Pasture Burning Plans: Save Time, Save Money, and Improve Range Conditions - KC Olson, K-State
- 4:45 pm Cutting Bull's Lament 2024

Pre-registration is \$25 and due by September 13. For complete details and registration, visit <https://www.asi.k-state.edu/events/stockerfieldday/>. For more information, contact Dale Blasi ([dblasj@ksu.edu](mailto:dblasj@ksu.edu) or 785-532-5427) or Katie Smith ([katiesmith@ksu.edu](mailto:katiesmith@ksu.edu) or 785-532-1267).

### **Register Here:**

**<https://www.asi.k-state.edu/events/stockerfieldday/>**

The program will include the latest practical information to help you make the most of significant changes occurring in the beef industry. We'll offer management tips to help you optimize your stocker operation and provide greater flexibility in the future. Call Shad today to sign up and plan to ride with him to the Stocker unit on Sept 26.

### **2024 MP County Pre-Plant Wheat School**

We had a wonderful turn for last month's our annual McPherson County Pre-Plant Wheat School. Producers gained knowledge on the best wheat varieties to grow, along with planting details and disease pressures we see right here in McPherson County. Specialists Lollato, Andersen- Onofre and Fritz presented an outstanding program. I would like to thank all the sponsors American AgCredit, Citizens State Bank, First Bank Kansas, Iron Horse Seed, Nutrein Ag Solutions and Terra Financial from providing the free meal. If you missed the Pre-Plant Wheat School, call the office today to get the learning module with all the information from the evening.



# Breaking the Green Bridge of the Wheat Streak Mosaic Virus

by Shad Marston

Wheat streak mosaic is one of the most economically devastating wheat diseases in Kansas and the Great Plains. Wheat streak mosaic can reduce yields by more than 80 percent when susceptible cultivars are infected with the disease as seedlings. The disease is most common in the western portion of the state, with sporadic outbreaks in central and eastern Kansas. Wheat streak mosaic is caused by the Wheat streak mosaic virus. The weeds and volunteer wheat should be dead and dry for 2 weeks within a mile or more of a field before planting the new wheat crop. Avoid early planting. Delay planting dates as long as feasible and planting wheat varieties with moderate or high levels of resistance to wheat streak mosaic is best. Planting after the "hessian fly free date" reduces the risk that the new wheat crop will emerge when the populations of wheat curl mites are large and more likely to move to new locations. Getting good control of these virus diseases starts primarily with controlling volunteer wheat, especially after the recent rainfall events. Control volunteer wheat soon in order to protect the wheat crop planted this fall.



Graphics from article:

[https://bookstore.ksre.ksu.edu/pubs/wheat-streak-mosaic\\_MF3383.pdf](https://bookstore.ksre.ksu.edu/pubs/wheat-streak-mosaic_MF3383.pdf)

Here is a very interesting article covering the concerns of long term no-till farming. Please call me for the full article and data on crop yields from 2017 -2023. *-Shad*

## Strategic Tillage in Long-Term No-Tillage Systems from KSRE

The adoption of no-tillage (NT) farming increased water use efficiency and allowed for cropping intensification, especially in semi-arid environments like western Kansas, because of greater soil water storage with more crop residue kept on the soil surface. With more residue retained in NT systems, wind and water erosion are reduced, and more organic matter accumulates in soil. However, despite these benefits, maintaining continuous NT has become increasingly challenging because of the lack of herbicide options for difficult-to-control and herbicide-resistant (HR) weeds, as well as issues with stratification of soil pH with increasing soil acidification near the surface.

The lack of effective herbicide options to control perennial grass weeds like tumble windmillgrass (*Chloris verticillata* Nutt.), tumblegrass (*Schedonnardus paniculatus*), and purple three-awn (*Aristida purpurea* Nutt.) as well as HR kochia (*Kochia scoparia* L.) and Palmer amaranth (*Amaranthus palmeri* S. Watson) pose some of the greatest challenges to long-term NT systems. With the increased costs of alternative herbicide options and increasing agricultural input costs, some farmers resort to tillage as a cost-effective strategy to manage weeds.

However, the decision to return to tillage after many years of NT management is difficult, as many farmers are concerned about losing the benefits accrued with long-term NT. Researchers at the Kansas State University Western Kansas Research-Extension Centers studied the use of strategic tillage in long-term NT fields to manage difficult-to-control and HR weeds and evaluated impacts on crop yields and soil properties over the past 8 years near Hays, KS.

### **What is strategic tillage?**

Strategic tillage is defined as a one-time tillage operation in an otherwise NT cropping system to manage challenges of long-term NT (**Figure 1**), including difficult-to-control weeds and pH stratification. Following this strategic tillage operation, the system returns to NT. The most commonly used implement for strategic tillage is the sweep plow, which is a non-inversion conservation tillage implement. Inversion-type tillage with a disk may be preferable in correcting pH stratification if needed.



**Figure 1. No-till (left) and strategic tillage (right) following tillage and fertilizer applications in fallow.**

### **Summary:**

Overall, strategic tillage of long-term NT had no negative effect on soil properties or crop yields. This could be an effective tool for farmers to manage difficult-to-control weeds. However, farmers should be mindful of best practices when implementing strategic tillage:

- Strategic tillage with a sweep plow should be timed when soil erosion risk is lowest. In western Kansas, the best time is in summer fallow ahead of winter wheat.
- Timing is critical to ensure successful control of perennial grass weeds. Tillage should be implemented with a sweep plow equipped with pickers, operated at shallow depth, on a hot, dry day with no chances for rain for several days following tillage.
- The tillage depth should be kept shallow (1-2 inches) to control perennial grass weeds (most are shallow-rooted) and prevent the burying of crop residue. Deeper tillage may only spread and bury the weed rhizomes, increasing management challenges.
- The frequency of strategic tillage will depend on the time it takes for issues to resurge after returning to NT management, though it may be six years or more between operations. More frequent tillage may result in negative impacts on soil properties and crop yields.



K-State Research & Extension  
McPherson County  
600 W. Woodside  
McPherson, KS 67460

## RETURN SERVICE REQUESTED

## AGENT CONTACT INFORMATION

Shad Marston  
County Extension Agent  
Agriculture & Natural Resources  
[smarston@ksu.edu](mailto:smarston@ksu.edu)  
Radio Every Monday:  
7:40 AM-96.7 KMPK  
8:40 AM-98.9 KMCP  
Ad Astra Radio Station

Shyanne Jones  
County Extension Agent  
4-H Youth Development  
[shyannejj@ksu.edu](mailto:shyannejj@ksu.edu)

Chuck Laughlin  
County Extension Agent  
Family & Community Wellness  
[claughlin@ksu.edu](mailto:claughlin@ksu.edu)