

# K-STATE

Research and Extension

## Sunflower Extension District #6



June 2022  
Newsletter



[www.sunflower.ksu.edu](http://www.sunflower.ksu.edu)

### Sunflower Extension District

#### Goodland Office

813 Broadway  
Room 301  
Goodland, KS 67735  
(785) 890-4880  
Fax (785) 890-4879

#### Sharon Springs Office

118 N Gardner St.  
P.O. Box 189  
Sharon Springs, KS 67758  
(785) 852-4285  
Fax (785) 852-4284

#### St. Francis Office

212 E. Washington St.  
P.O. Box 667  
St. Francis, KS 67756  
(785) 332-3171  
Fax (785) 332-3199

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## June 2022

Go to [www.sunflower.ksu.edu](http://www.sunflower.ksu.edu) for more details on these programs.

### Inside Your Newsletter...

Estimating Western Corn Rootworm Hatch and Adults.....Crop Production page  
Early Weaning as a Drought Mitigation Strategy.....Livestock page  
What is Stress?.....Family & Consumer page  
Summer Youth STEM Programs.....4-H Youth Development page



### Mark Your Calendar For K-State Wheat Plot Tours



#### Wheat Plot Tour Schedule

**June 7**

#### Wallace County

6:30 am MT breakfast at CAB  
7:30 am MT at Mai Farms  
10:00 am MT at E&H Farms

**June 7**

#### Sherman County

5:30 pm MT at F&J Farms  
Supper to follow at 4-H Building

**June 8**

#### Cheyenne County

5:30 pm CT at Hingst Farm  
Sandwiches in the field after the tour

#### Directions to the plots:

**Mai Farms** – 9 mi south of Sharon Springs on Hwy 25 to Field Road, 4 miles east and ¼ mi south

**Purvis Farms** - 3 mi west of Weskan on Hwy 40 to Road 3 and south 5.5 mi (south of intersection of Gooseberry Rd and Rd 3)

**F&J Farms** - 7 miles north of Goodland on Hwy 27, east of the scale house

**Hingst Farm** – 13 miles west of St. Francis on Hwy 36 to Road 2, 4 miles north



## Estimating Western Corn Rootworm Hatch and Adults

Degree-day models are useful tools for estimating the development of many different insects, allowing us to predict when potential pests might begin to impact a crop. In the case of the Western Corn Rootworm (WCR), degree-day calculations can be used to determine the onset of egg hatch in an area, peak egg hatch and the timing of adult emergence.

The most damaging stage of WCR is the larval stage. Freshly hatched larvae feed on root hairs and the surface of young roots. As they grow, feeding intensifies and the larvae start tunneling into larger roots and begin pruning developing tips of brace roots. Yield loss occurs when severe infestations weaken the root system, causing plants to lodge. Without adequate scouting, often times the problem is not apparent until it is too late. Having an estimate on when eggs are going to start hatching and peak in an area will ensure that scouting is done when root damage is fresh, easy to identify and, most importantly, before the damage becomes severe.

### Growing degree days for WCR egg hatch

As with all degree-day models, the base temperature, or developmental threshold, will be important for predicting rootworm hatch and emergence. Western corn rootworm eggs are laid in summer and overwinter in the soil. The following spring, a threshold soil temperature of 52°F or higher will trigger eggs to begin developing. This base temperature along with daily 10cm high and low soil temperatures are used to monitor egg hatch using the formula below (Figure 1). It is important to note that degree day calculations for egg hatch should begin starting January 1 of the current year.

Eggs should begin hatching after approximately 380 degree days have accumulated. Peak egg hatch occurs between 684-767 accumulated degree days. Examining corn roots for damage 10 to 14 days following peak hatch is recommended since feeding damage will be fresh and easier to detect.

Calculating growing degree days for western corn rootworm egg hatch:  
$$\left( \frac{(\text{Max daily soil temp @4 in} + \text{Min daily soil temp @4in})}{2} \right) - 52^\circ\text{F}$$

For example:

$$\frac{(58^\circ\text{F} + 54^\circ\text{F})}{2} = \frac{112}{2} = 56 - 52 = 4 \text{ degrees days accumulated that day}$$

**Figure 1. Formula and example calculation for determining growing degree days**

### Growing degree days for WCR adult emergence

As with egg hatch, knowing when adult rootworms might be emerging in the field will help make sure both scouting efforts and insecticide applications are timed correctly. Male and female corn rootworms emerge at different times. Peak male emergence is always prior to peak female emergence. This life strategy ensures that males will always have access to newly emerged females. If insecticide applications are to be made in order to reduce egg laying, spraying too soon when the field is predominantly occupied by male beetles will do nothing to reduce potential rootworm pressure the following season.

Using this method to estimate adult emergence is not meant to replace scouting, in fact this requires scouting to begin earlier than beetles should be emerging. The reason for this is to determine a “biofix”. Rather than simply using January 1 of the current year, the biofix is the point in time when degree days begin to accumulate and, in this case, the biofix is the date that an adult rootworm is first observed or trapped in a field. Another important difference with the adult emergence model is that air temperature data is used instead of soil temperature.

Calculating growing degree days for WCR adult emergence:  
$$\left( \frac{(\text{Max daily soil temp @4 in} + \text{Min daily soil temp @4in})}{2} \right) - 53^\circ\text{F}$$

For example:

$$\frac{(64^\circ\text{F} + 60^\circ\text{F})}{2} = \frac{124}{2} = 62 - 53 = 9 \text{ degrees days accumulated that day}$$

**Figure 2. Formula and example calculation for determining growing degree days for Western Corn Rootworm adult emergence.**

While male rootworm emergence begins before female emergence, there is overlap. Peak male emergence can be expected at approximately 118 degree days and with 505 accumulated degree days male emergence should be concluded. Peak female emergence can be expected at approximately 245 degree days and concludes at 629 degree days. Scouting will require more effort and time; if the first beetle detected is a female, the window of opportunity to use this tool has already passed.



## Early Weaning as a Drought Mitigation Strategy

Keith Harmony, a range scientist and K-State researcher out of Hays stresses that precipitation in May and June is vital for optimum forage production on pastures. Grazing research has been conducted at the KSU Agricultural Research Center—Hays since the 1940s. Using 40 years of data, researchers have studied the relationship between precipitation amount and timing to end of growing season forage production. The study suggests that forage production on shortgrass rangeland is most efficient when the precipitation in May and June is 6.25 inches or below (Harmony, 2022). This relationship is illustrated in Figure 1, which represents the relationship between May and June precipitation and forage production. This time period is crucial to production as it coincides with the physiological stages of western Kansas’ dominant rangeland grasses in which the most rapid growth occurs. Actually, 65% of the forage production during a growing season typically occurs by the end of June (Harmony, 2022).

The results of these grazing studies stress that the end of June becomes a vital time period to make decisions about how forage will be managed for the remainder of the grazing season. Understanding when a majority of the forage growth occurs on pastures, how much precipitation the area has received and when can be used as a good predictor of pasture productivity (Harmony, 2022). In short, with less than ideal conditions producers should manage pastures very carefully and make changes as needed as to preserve pasture health as much as possible.

One strategy that has been used to mitigate stressors that come with drought is weaning calves early to reduce cow nutritional needs and extend forage availability. Some research by South Dakota State University weaned calves 90 days early which resulted in a reduction of forage disappearance by 36%, otherwise 18.9 pounds per head per day. This reduction in forage

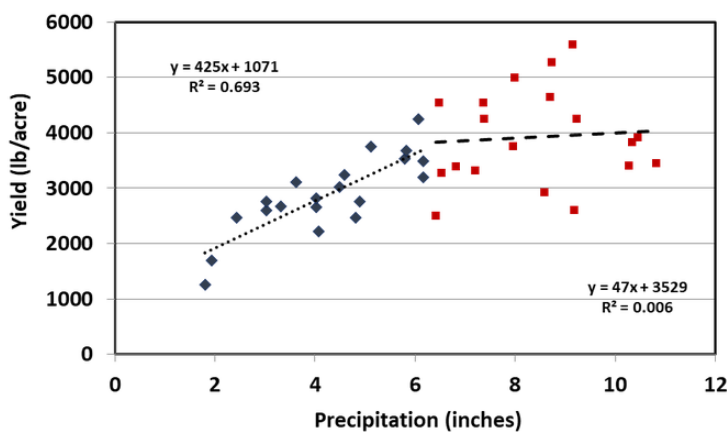
use resulted in an additional 1.1 AUM over the remaining 90 days opening up options for additional grazing (Rusche, 2021). This extension of available forage can provide options for grazing cows as well as reduce the risk of overgrazing. Furthermore, early weaning can reduce the nutritional requirements of the cow as lactation ceases. Without the demand of lactation, body conditions may improve and reduce the need to add body condition in winter before the subsequent calving season. Again another advantage for producers when feed supplies may be limited.

While it is ideal to let the cow raise the calf on a low cost feedstuff like grass in comparison to a feed ration, drought and forage availability can force producers to strategize and adjust as needed. In general, early weaned calves are more efficient compared to calves weaned at the traditional size and age. However, this calf efficiency can be expected when provided a high quality diet. Calves weaned 90 days early require a diet containing 16% crude protein and 70% TDN (Rusche, 2021). One early weaning approach is creep feeding calves while still on pasture, then sorting the cows off to wean, and finally utilizing feedstuffs such as crop residue (if available), cover crops, or grain regrowth to cut costs.

Early weaning, however comes with its own set of challenges. If drought and forage availability is a widespread problem, producers who utilize an early weaning strategy may find a flooded market when it comes time to sell calves. Furthermore, young calves in the feedlot are seen as a challenge in terms of facilities and management. Due to these difficulties selling younger calves in a flooded market and likely into a feedlot, producers are encouraged to retain calves to a more traditional size before selling when resources allow.

Beyond marketing concerns, there are also health concerns to be considered. The stress of weaning combined with some of the hottest and dustiest months of the year can encourage respiratory disease to take off. Implementing a sound vaccination program, planning around the hottest days, and cutting down on dust as much as possible are all good practices to limit risk.

In summary, drought always seems to be a looming problem requiring livestock producers to adjust as needed. Taking into account the amount and timing of rainfall received, available forage, the market, and other resources there are strategies to lighten the load. To offset these potential challenges, early weaning is best for producers that can implement a sound vaccination program, have access to other feedstuffs, and retain calves until they reach a more traditional age and weight to sell.



**Figure 1.** “The relationship of 36 years of rangeland yield and annual precipitation from October of the previous year through September of the current year at Hays, KS. The steadily increasing solid line and tightly grouped points indicate that rangeland yield increased steadily and predictably as total water year precipitation

**For more information on early weaning please visit or call the Cheyenne County Extension Office at (785)332-3171.**

**For more resources and event announcements, please follow us on Facebook at K-State Research and Extension Sunflower District.**



## What Is Stress?

Everybody experiences both good and bad stress. It can come from mental activity, emotional activity, or physical activity.

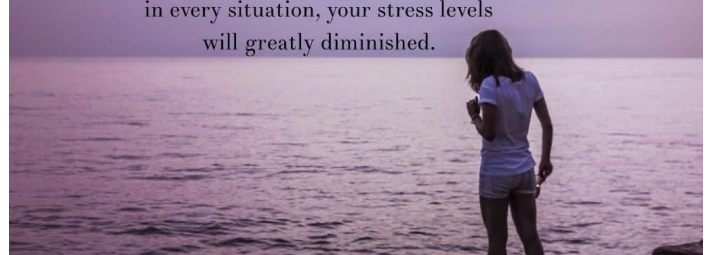
The way you interpret stress is unique and personal. For example, what may be relaxing to one person may be stressful to another. Good stress can be healthy and useful. It helps you get to an appointment on time or meet a deadline. But when stress becomes overwhelming, it becomes distress, or bad stress. Bad stress can lead to chronic stress, which can leave you feeling nervous, on-edge, and tense. It also puts you at greater risk for numerous health problems, including heart disease, sleep problems, digestive problems, depression, obesity, memory impairment, and various skin conditions, such as eczema. Learning what causes stress and different ways to cope with it helps you be more balanced and healthy throughout life.

### People who are experiencing stress overload may notice:

- anxiety or panic attacks;
- a feeling of being constantly pressured, hassled, and hurried;
- irritability and moodiness;
- physical symptoms, such as stomach problems, headaches, or even chest pain;
- allergic reactions, such as eczema or asthma;
- problems sleeping;
- drinking too much, smoking, overeating, or doing drugs; and;
- sadness or depression.

Everyone experiences stress a little differently. Some people become angry and act out their stress or take it out on others.

How we perceive a situation and how we react to it is the basis of our stress. If you focus on the negative in any situation, you can expect high stress levels. However, if you try and see the good in every situation, your stress levels will greatly diminished.



Some people internalize it and develop eating disorders or substance abuse problems. And some people who have a chronic illness may find that the symptoms of their illness flare up under an overload of stress.

### Stages of Stress

The body reacts to stress in three ways:

#### Stage 1: Alarm.

Certain hormones are pumped into the bloodstream, which speeds up the heart rate, increases respiration and slows down digestive activity. The body is ready for either fight or flight. Such a situation can lead to stress-related illness such as ulcers, headaches, backaches, palpitations of the heart, rashes and other ailments.

#### Stage 2: Resistance and Adaptation.

The body tries to repair the damage caused in stage one and bring the body back to a “normal condition.” It is only when stress is not positively dealt with that the third stage occurs.

#### Stage 3: Exhaustion.

A person’s body cannot be stressed all the time. Release must occur or illness may result.

Having realistic expectations of yourself, shifting your focus to looking at what is really important, and taking care of yourself emotionally and physically will also increase your confidence to deal with stressors. Sometimes, taking a deep breath, meditating, relaxing, or taking time to smell the roses allow you to appreciate the little things so you don’t overreact to the big things.

Throughout the lifespan, you face multiple demands, but stress should not rule your life. Learning what causes stress and different ways you can cope with it is a healthy lifestyle behavior that will reduce pressure and anxiety and influence optimal aging.





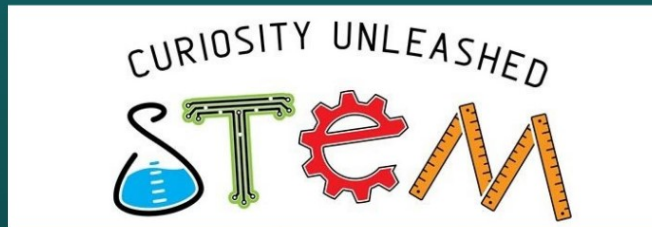
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**Sunflower Extension District and 4-H will offer a variety of summer youth STEM programs in Cheyenne, Sherman, and Wallace Counties**



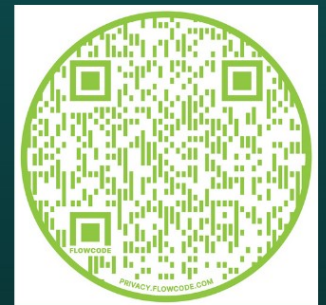
**STEM**  
activities for  
**KIDS**



**I want to learn more! Please send us information.**

Name \_\_\_\_\_  
Address \_\_\_\_\_  
E-mail \_\_\_\_\_  
Phone \_\_\_\_\_

**Return by mail to: Sherman County Extension Office  
813 Broadway, Room 301, Goodland, KS 67735  
Call 785.890.4880 to give us the information on the phone.  
Use the QR code to the right to sign up for information.**



<https://docs.google.com/forms/d/1JgjjJgMDXVquaLlws0seXglyXMEcn8CzNzIwFwCk4qA/edit>

**Contact:  
Karen Nelson, 4-H Youth Development Agent  
Sunflower District—785.890.4880  
karennelson@ksu.edu**

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**Congratulations to Domenic Baldwin and Jordyn Faulkender for receiving the Cheyenne County 4-H Scholarships. Best wishes for your futures!**

**Did You Know???**

These are just a few of the opportunities 4-H has to offer. Check them out at <https://www.kansas4-h.org/events-activities> Or contact the Extension Office at 785-332-3171

- County Fairs \* Kansas State Fair \* County Camps
- Rock Springs Camp \* 48 Hours of 4-H \* CIA Citizenship in Action
- CWF Citizenship Washington Focus \* Discovery Days
- Dog Conference \* Dog Qualifiers \* Dog Show
- Geology Field Trip \* Global Citizenship: Exchange Programs
- Horse Judging \* Horse Panorama \* Horse Qualifiers
- Horticulture Judging \* Insect Spectacular
- KVF Kansas Volunteer Forum \* KYLF KS Youth Leadership Forum
- National 4-H Conference Award Trip \* National 4-H Congress Award Trip
- Photography Shutterbug events \* Shooting Sports Qualifiers
- Shooting Sports State Matches \* SYLF SW Leadership Youth Forum

**2022 Cheyenne County Fair Theme- County Strong and Carrying On!**





## Cheyenne County

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
	<b>JUNE 1 DEADLINE</b> – County Breeding Swine, Lamb and Goat ID's		Discovery Days <span style="font-size: 2em;">→</span>			
				Prairie Day Camp		
5	6	7	8	9	10	11
		Babysitting Clinic	Deadline to order State DNA envelopes for small livestock	Fishing Clinic	Aerospace Camp	CN County Horse Show
12	13	14	15	16	17	18
		 <i>Flag Day</i>	CNCo.Registration Papers Due*State* Nominations Due Heifer, Sheep, Swine, Goat			
19	20	21	22	23	24	25
				Photo Day Camp		Survival Skills Camp
26	27	28	29	30		
		Farm to Fork				



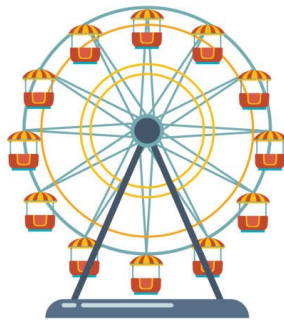
## Important Dates

- June 1 - 4.....[Discovery Days](#)
- June 2 .....Little Camp on the Prairie
- June 7.....Babysitting Clinic
- June 9.....Fishing Clinic
- June 10.....Aerospace Camp
- June 12.....Prairie Dale
- June 15.....[Small Animal Livestock Nominations Due](#)
- June 18.....Cloverbuds
- June 20.....Country Clovers
- June 23.....Photography Camp
- June 25.....Survival Skills Camp
- June 26.....Sunflower 4-H
- June 28.....Farm to Fork

Wheat Tour TBA  
 Ruelton Eager Beavers TBA

## Fair Theme:

### Carnival Lights & Country Nights



### Northwest Kansas District Free Fair, Inc.

### July 30 - August 6th Goodland, KS

All 4-H entries are due  
 Wednesday, July 13, 2022,  
 by 5:00 PM MST

Pre-Fair & Fair week information can be found  
 at the NWKS District Free Fair Website:  
<https://www.nwksfair.com/schedule/>

Fairbooks are printed and can be picked up at the  
 Extension Office.

**Missed Graduation  
 Announcement in the  
 May Newsletter.**  
 Congratulations also goes out to  
 Emily Wolf!



## May, June, & July Events



The Sunflower Extension District is  
 kicking off the summer with many  
 camps in the district.

### Little Camp on the Prairie

June 2, 2022  
 Sherman County

### Babysitting Clinic

June 7, 2022  
 Sherman County

### Fishing Clinic

June 9, 2022

Bellamy's Fishing Pond

### Aerospace Camp

June 10, 2022

Bird City, KS

### Photography Clinic

June 23, 2022

Cheyenne County

### Farm to Fork

June 28, 2022

Rexford, Colby, & back to Goodland

### Survival Skills Camp

June 25, 2022

Cheyenne County

### Livestock Learning Day

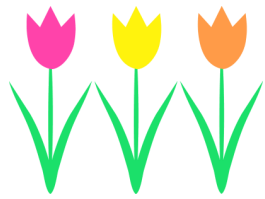
July 9, 2022

Cheyenne County



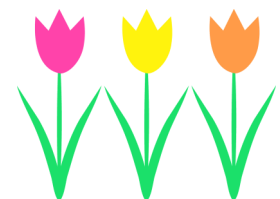
<https://www.facebook.com/sunflowerextensiondistrictshermancounty4h/>





# Sherman

## June 2022



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1.	2. <b>Little Camp on the Prairie</b> 8:00 –12:45 PM (MT) 4-H Building	3.	4.
<b><u>Discovery Days June 1-4</u></b>						
5.	6.	7. <b>Babysitting Clinic</b> 9:00—3:00 PM (MT) Wolak Building	8.	9. <b>Fishing Clinic</b> 8:00 - 1:30 PM (MT) 4-H Building	10. <b>Aerospace Day Camp</b> 11:30-4:00 PM (CT) Bird City, KS	11.
12. <b>Prairie Dale</b> 5:00 PM 4-H Building	13.	14.	15. <b><u>Small Animal Nominations Due</u></b>	16.	17.	18. <b>Cloverbuds</b> 10:00 AM 4-H Building
19.	20. <b>Country Clovers</b> 7:00 PM 4-H Building	21. 	22.	23. <b>Photography Clinic</b> 10:00 - 4:00 PM (CT)	24.	25. <b>Outdoor Survival Skills</b> 9:00—3:00 PM (CT) Cheyenne County
26. <b>Sunflower</b> 3:00 PM 4-H Building	27.	28. <b>Farm to Fork</b> 9:00 - 3:30 PM (CT) Rexford, Colby, & back to Goodland	29.	30.		



**Dates to Remember**

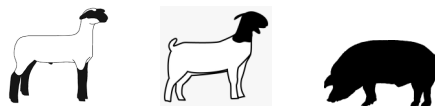
June

- 2- Little Camp on the Prairie—Goodland
- 2- Choose Health SNAP Ed Camp
- 7- Babysitting Clinic—Goodland
- 9- Fishing Clinic—Bellamy’s Pond
- 9- Choose Health SNAP Ed Camp
- 10- Aerospace Day Camp—Bird City
- 16- Choose Health SNAP Ed Camp
- 23- Photography Camp—St Francis
- 23- Choose Health SNAP Ed Camp
- 25- Outdoor Survival Skills Camp—St Francis
- 28—Farm To Fork—Goodland
- 30- Choose Health SNAP Ed Camp

July

- 4- Extension Office closed
- 7- Choose Health SNAP Ed Camp
- 8- Fair Entries Due
- 9- Livestock Learning Day—St Francis
- 22- Fair Clean-up
- 23- County Fair Horse Show
- 25-30- Wallace County Fair

**Small Animal Livestock  
Nominations due to State  
by June 15, 2022**



Wallace County



**Choose Health:  
Food, Fun, and Fitness**

Presented by Karen Jones & K-State SNAP Ed  
1:00-2:30 pm @ the CAB Building

**When:** June 2  
June 9  
June 16  
June 23  
June 30  
July 7

**Learn:** Cooking  
Games  
Nutrition  
Recipes  
Newsletters

**Call Extension Office to sign up 785-852-4285**



2022 Wallace Co Fair  
July 25-30, 2022  
“4-H Empowers You”



# June 2022

## Wallace County

Sun

Mon

Tue

Wed

Thu

Fri

Sat

			1	2	3	4
				Little Camp on the Prairie  Choose Health SNAP Ed Camp		
5	6	7 Babysitting Clinic	8	9 Fishing Clinic  Choose Health SNAP Ed Camp	10 Aerospace Camp	11
12	13	14	15 State Nominations Due for Swine, Sheep, Goat, Heifer	16 Choose Health SNAP Ed Camp	17	18
19 Father's Day	20	21	22	23 Photography Camp  Choose Health SNAP Ed Camp	24	25 Outdoor Survival Skills Camp
26 WA County Horse Show	27	28 Farm to Fork Camp	29	30 Choose Health SNAP Ed Camp		



**Sunflower Extension District #6**  
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**Sunflower Extension District #6 Offices**

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**Jeanne Falk Jones**

Multi-County Agronomist for Cheyenne, Sherman, and Wallace Counties  
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