

# Reno County Extension

## May 2017



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With

**Ag Agent  
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## White heads in wheat: Possible causes

White heads have been appearing in many wheat fields around the state this year. Sometimes the white heads are just single tillers scattered throughout part or all of a field, and sometimes they occur in small to large patches. Heads might be completely white starting from the stem, or may just have a few spikelets showing the discoloration.

There are many causes of white heads. Here are some of the most common causes and their diagnosis.

- **Premature dying** (drowning, hot dry winds, etc.). As wheat begins to mature, plants in some areas of the field may have an off-white color similar to take-all. This is premature dying could be due to drowning, hot dry winds, or some other stress. The pattern of off-colored heads will often follow soil types or topography, and may occur in large patches. The grain will be shriveled and have low test weight. Due to the recent rainfall events from mid-March through mid-May, with many areas of the state receiving more than 10 inches of rainfall in this period, several fields of wheat across south central and central Kansas are showing drowning symptoms in poorly drained areas. The area that seems to be most affected by drowning spans the region between Edwards through Sumner counties (Fig. 1).



**Figure 1. Large patches of drowned wheat in central (upper panel) and south central (lower panel) Kansas. Photos taken May 16 and 17, 2017, by Romulo Lollato, K-State Research and Extension.**

Another possible cause of white heads this spring seems to derive from the recent snowstorm event on western Kansas. The heavy snowfall broke and at least kinked several stems towards the base in the western third of the state (for a full report, please see eUpdate article "[Effects of snowfall April 29 & May 1, 2017 on Kansas wheat](#)"). Due to the broken or kinked stem, affected wheat plants cannot keep up with the atmospheric demand for water and are more exposed to heat stress. Signs of this susceptibility are starting to appear in the affected areas (Fig. 2).



**Figure 2. Wheat stem damaged by the April 29 – May 1 snowstorm near Leoti, KS. Affected plants are more exposed to heat stress and starting to show signs of abortion, such as whitening of the lower stem. This symptom will likely develop into white, aborted heads. Photo by Rick Horton, wheat producer in Wichita and Finney counties.**

- **Freeze injury to stem or crown.** Depending on the stage of growth at the time of a late spring freeze, parts or all of the heads may die and turn white.

In years when the freeze occurs about the boot stage or a little earlier, there can be injury to the lower stem, which then cuts off water and nutrients to the developing head. In years when the wheat is in the early heading stage at the time of the freeze, the freeze can damage the heads directly.

Often, wheat on north-facing slopes, on ridge tops, or in low-lying areas will be most affected by freeze injury. But freeze injury can also be so severe that it occurs throughout the fields, in no particular pattern. Crown rot is another potential problem that can be traced back to freeze injury.

When the crown is damaged by cold temperatures or a freeze, part or all of the tillers can die. If the tiller from a damaged crown forms a head, this head will almost always be white. The crown will have internal browning, and stands will usually be thinner than normal.

**Hail.** Hail can occasionally damage just a portion of a head, and cause that damaged portion to turn white. The hail impact to the heads may also remove spikelets and expose the rachis (Figure 3).



**Figure 3. The heads in this photo have had a few spikelets removed due to hail impact and have their rachis exposed. Photo by Romulo Lollato, K-State Research and Extension.**

- **Dryland root rot (also known as dryland foot rot).** This disease, caused by the *Fusarium* fungus, causes white heads and often turns the base of the plants pinkish (Fig. 4). As with take-all, dryland root rot causes all the tillers on an infected plant to have white heads. This disease is usually most common under drought stress conditions, and is often mistaken for either drought stress or take-all.



**Figure 4. White wheat head caused by *Fusarium* root rot. Detail on the right shows pink discoloration inside the stem typical of the *Fusarium* pathogen. Photo by Romulo Lollato, K-State wheat extension specialist.**

- **Head scab.** When there are periods of rainy weather while the wheat is flowering, as seen across most of Kansas this growing season, some heads may become infected with *Fusarium* head blight and turn white. The heads of some red-chaffed varieties turn a darker red when infected with scab, but the heads of most varieties turn white. Symptoms can be restricted to one or few spikelets in the head, but often times the upper half or the entire head might be affected (Fig. 5). Head scab is most common where wheat is grown after corn, or after a wheat crop that had head scab the previous year. Head scab can be identified by looking for pink spores of the *Fusarium* fungi, as well as by a darker discoloration to the rachis of the wheat head. During the current growing season, head scab has been observed in south-central and southeast Kansas, but it is probably still early to see symptoms in central

and north-central Kansas as it takes approximately three weeks from flowering for the first symptoms to appear.



**Figure 5. Wheat heads affected by head scab or Fusarium head blight. Symptoms range from one or few spikelets that turned white, to the upper half or entirety of the head. Photo by Romulo Lollato, K-State Research and Extension.**

- **Take-all.** This disease often causes patches of white heads scattered throughout the field. It occurs most frequently in continuous wheat, and where there is a moderate to high level of surface residue. Take-all is also favored by high pH soils, so a recently limed field might also show symptoms. To diagnose take-all, pull up a plant and scrape back the leaf sheaths at the base of a tiller. If the base of the tiller is shiny and either black or dark brown, it is take-all. All tillers on a plant infected with take-all will have white heads. Plants will pull up easily.

- **Sharp eyespot.** This disease is common in Kansas, but rarely causes significant yield loss. Sharp eyespot causes lesions with light tan centers and dark brown margins on the lower stems. The ends of the lesions are typically pointed. If the stems are girdled by the fungus, the tiller may be stunted with a white head. Each tiller on a plant may be affected differently.

- **Wheat stem maggot.** Wheat stem maggot damage is common every year in Kansas, but rarely results in significant yield loss. It usually

causes a single white head on a tiller, scattered more or less randomly through part or all of a field. One typical symptom of white heads caused by wheat stem maggot is that the flag leaf and lower stem are often green, and only the last internode (peduncle) and head are white. If you can grab the head and pull the stem up easily just above the uppermost node, the tiller has probably been infested with wheat stem maggot. Scout for symptoms of chewing close to the base of the plants, which could indicate that the head has died as function of wheat stem maggot (Fig. 6).



**Figure 6. White wheat head due to wheat stem maggot, characterized by a white head and peduncle but healthy and green lower stem. Detail on the right shows chewing of the base of the peduncle by the maggot. Photo by Romulo Lollato, K-State Research and Extension.**

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# GET THE *FACTS* FROM JENNIFER SCHROEDER, Family & Consumer Science Agent

## **Sorghum: An Old Player in a New World**

Sorghum is a staple food in African, Asian, and South American diets. In the U.S. it is typically found in animal feed or made into ethanol.

But sorghum is becoming a popular food item in American diets. It contains 10 grams of protein per half cup serving. It is also a good source of fiber, antioxidants and is gluten-free. It is the latter that has landed sorghum into many American diets.

Using sorghum in gluten-free foods has helped those with Celiac disease or other medically diagnosed reasons to avoid gluten. It helps increase whole grain consumption in gluten-free diets.

Sorghum also decreases insulin and glycemic responses compared to corn and rice. While sorghum has a lower glycemic index than wheat, sorghum syrup does not.

Antioxidants in sorghum help prevent cell and DNA damage. Many studies have shown the potential of sorghum to decrease certain cancer risks. While it may not be the cure to cancer, it certainly is a healthy addition to the diet.

Toss cooked sorghum into soups or salads, use in place of oatmeal for breakfast, or pop it like popcorn!

Source: [www.foodinsight.org/sorghum-gluten-freeancient-grain-fiber-antioxidants](http://www.foodinsight.org/sorghum-gluten-freeancient-grain-fiber-antioxidants)

## **Preserve It & Serve It**

The University of Georgia has a new children's guide to canning, freezing, drying, pickling and preparing snacks with preserved foods.

The book teaches the basics of preserving with boiling water canning, freezing, refrigerating, quick pickling and drying. Step-by-step methods are illustrated and several child-friendly recipes are provided for using each of the preserved foods. Activities are intended to be carried out with adult supervision. Preserved foods include

canned applesauce, canned strawberry jam, refrigerator or canned pickles, frozen berries, and dried fruit, tomato slices and applesauce rolled leather. The book is available for sale at the UGA Extension Publication Store.

## **Listeriosis in Hispanic Pregnant Women**

While all pregnant women are at risk in getting listeriosis, Hispanic women are at an increased risk due to consuming certain Hispanic foods.

Pregnant women have an altered immune system which also impacts their unborn babies. Many Hispanic dairy products are made with unpasteurized milk.

These dairy foods include Mexican soft cheeses like Queso Fresco, Panela, Asadero, and Queso Blanco. When made with unpasteurized milk, Listeria may survive and cause illness. In some cases, the mother may abort their baby.

The Food and Drug Administration has put together a community educator's guide to help educate pregnant Hispanic women of the risks. The program has many tools and materials in English and Spanish.

Learn more about this program at

[www.fda.gov/Food/FoodborneIllnessContaminants/PeopleAtRisk/ucm062993.htm](http://www.fda.gov/Food/FoodborneIllnessContaminants/PeopleAtRisk/ucm062993.htm).

## **Spend Smart. Eat Smart. App**

The Spend Smart. Eat Smart website from Iowa State University is now available as a mobile app! The brand new, free mobile app puts healthy eating and cost saving tools in the palm of your hand at the grocery store.

- Unit Price Calculator: You will never have to wonder which product is a better buy again. The calculator will do unit price calculations with ease.
- Produce Basics: Review nutrition, selection, storage, cleaning and preparation information for a wide variety of fresh produce.
- Recipe Finder: Keep track of your favorite recipes from the website.

**K-STATE**  
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# CANNING WORKSHOP



**Thursday, June 22, 2017**

**5:30 pm - 9:30 pm**

**\$15**

**South Hutchinson Community Building**

**101 W. Ave. C.**

**South Hutchinson, KS 67505**

For those who have never preserved food at home or those that need a refresher course, this workshop is for you! Sponsored by K-State Research & Extension, this one-day hands-on-workshop will help you get started in preserving food at home safely. Learn about the equipment, ingredients needed, safe handling, and processing methods. You will work with your classmates to pressure can several products. Topics included pressure canning. *Please bring a cutting board, knife, and a sack dinner.*

*Please bring your canner if you want to have your gauge tested.*

## To Register:

Send registration fee to:

The Reno County Extension Office at

2 W. 10th Ave.

South Hutchinson, KS

(620) 662-2371

jenj@ksu.edu

**RSVP & Registration Fee Due by June 20th.**

NAME \_\_\_\_\_

PHONE # \_\_\_\_\_ # ATTDG x \$15 \_\_\_\_\_

# COMMUNITY BITS AND BYTES WITH JAN STEEN

*Website links in this section are case sensitive, and have been shortened for convenience.*

## **Brain Gain**

*by Nancy Daniels, K-State Research and Extension Community Vitality Specialist [nkdaniels@ksu.edu](mailto:nkdaniels@ksu.edu)*

We've all heard of the Brain Drain, right? That's when our kids leave home, never to return to our small town. However, let's talk about Brain Gain: A research-proven trend that's been quietly happening since the 1970's where talented 30-50 year olds come back into small towns to enjoy the quality of life. In April, I hosted a call to the K-State Research and Extension agents who work in the area of Community Development. Our speaker was a marketing professional, Elizabeth Collins, President, CEO of Webcom Resources, who spoke about "How Marketing Helps Small Businesses Grow." In Atchison, Elizabeth is a Brain Gain person who is now helping her community to market themselves to the world.

*My favorite points:* The Brain Gain people are generally ages 35-55 years old. They have explored their options and now want to come to a rural community to experience "the European bicycle lifestyle"—bicycling to wherever they want, with high attachment to community and low attachment to material things.

30% of those people will come to small towns that they have no previous attachment to.

*"Resident attachment" makes residents say "this is the perfect place for me."* There are three drivers to resident attachment: 1) Openness 2) Social Offerings 3) Aesthetics

To document the research for herself, Elizabeth did a Google survey of 100 people (ages 35-55) who chose to move to a rural community or city of less than 20,000 people and found that the largest percentage (20%) did so to have the classic rural "hometown community" lifestyle. That was a higher percentage than moved because of a job or to move closer to family and friends.

If you want to hear more, this is the link to the call (<https://goo.gl/uNQf73>) and another link to her very informative PowerPoint (<https://goo.gl/07EcBT>).

We don't want you to forget that people want the great lifestyle that is easy to take for granted in small town Kansas.

## *From the May 2017 Kansas PRIDE Newsletter* **Improving Accessibility on your Facebook Page**

If you're using the power of social media platforms such as Facebook to reach customers, fans, or groups of folks with similar interests, you'll want to make sure everyone has an equal opportunity to view your content.

### *General Tips:*

- Ensure your website address is listed in the "About" section of your timeline/page. Visitors can easily access your website for more information about your organization.
- Include other ways to contact your organization, such as a phone number, email address, or mailing address.

### *Photos, Video, Audio:*

- Caption any photos, whether in posts or albums, on your Facebook page.
- When creating a new album, add captions to your photos by going to the edit input field associated with the photo. Enter the caption text and repeat the step for all additional photos in the album.
- If you host the posted photo, video, or audio on your website, you can link back to your website, not just to drive traffic to your site, but also for users to access a full caption or transcript of the media. Immediate post a comment on any media you place on Facebook, directing people back to the website for this expanded information.
- If you have a YouTube channel and are posting videos from there to Facebook, make sure you enable closed-captions. Post a direct link to the YouTube video as your status update rather than uploading the video to Facebook so that visitors will be taken to the most accessible version.

You can find more tips on making your Facebook, and other social media interactions, accessible by visiting [digitalgov.gov](http://digitalgov.gov)'s entry about this subject on their website: <https://goo.gl/uARXzQ>

*(Adapted from the University of Arkansas Extension program)*

## Conducting a Community Cleanup Fix-up Campaign

Are you tired of looking at the trash in the lot next door? A great way to get neighbors together and make some changes is to organize a community cleanup campaign.

Hosting a community cleanup campaign can:

- Improve a neighborhood's physical appearance, as well as creates a sense of community and pride among the residents.
- Create a good impression on prospective employers, professionals and others who visit the community.
- Improve the health of the community by eliminating places for insects and rodents to live.
- Provide an opportunity for residents to get involve and show immediate, visible results.

K-State Research & Extension has a publication to assist your community in organizing such a campaign. You can visit our office and pick up a printout in the Community Development section, or you can download a PDF copy of the publication from our library: <http://bit.ly/2qMeOqP>

The publication addresses topics such as organization, project goals, planning, advertising, recruiting volunteers, executing the event, and sustaining the effort beyond the actual campaign day.

### Disaster Recovery Log App

With recent talks of severe weather and potential flooding, an Extension app might be just the tool you



need to help you out with damaged property. North Dakota State University Extension has an app called the Disaster Recovery Log, which helps you to record information about damages to your home and property using text, images, and

audio. This app will help you record and recovery from damaged caused by flooding or other disaster, and it's available for free through the iOS App Store and Google Play.

Disaster Recovery Log uses the smartphone's camera feature to capture photos to illustrate damage. Users can key in descriptions of damaged items or use their smartphone's voice recorder to record an audio description of the damage. These details and photos are essential for possible insurance or government reimbursement.

Each damaged item is entered as a "Detail" organized under a "Disaster." You start by adding a "Disaster." Then you add "Details" to that "Disaster" to document your losses.

You can enter text, add photos using your camera or gallery, and add audio using your sound recorder of choosing from saved audio files.

DRL also provides NDSU Extension Service information on how to clean or deal with flood-damaged appliances and electronics; carpets and floors; clothing and fabrics; food; furniture; gardens and landscapes; home structures; household items; mold; papers, books and photos; and water.

# *Reno County Bicycle Safety Clinic*

Open to Reno County children aged 5 to 12 years. Children can bring their own bikes or are eligible for a free bicycle and helmet if they don't already have one. Bikes and helmets are limited so come early!

**Saturday, June 3rd • 8:30 - 10:00 AM**

**Simply Good Overstocks, 401 N Main, South Hutchinson**

**Bicycle Training and Certificate Required for FREE bicycle and helmet**

## *Thanks to Our Sponsors*

City of South Hutchinson  
Reno County Conservation District  
Harley's Bicycles  
Kansas Health Foundation  
South Hutchinson Chamber of Commerce

South Hutchinson Fire Department  
South Hutchinson Police Department  
Natural Resources Conservation Service  
Kansas State Research & Extension



RENO COUNTY EXTENSION  
MASTER GARDENERS



2017 Hutchinson  
Garden  
TOUR

Saturday, June 10  
9:00 to 3:00

*Ticket information at [hutchgardentour.com](http://hutchgardentour.com)*