

Conducting a Field Inspection

Part 3 of 3

Steve F. Schuler

Kansas Crop Improvement
Association

Bur Ragweed (aka woolly leaf bursage) looks like a ragweed with a covering of white hairs.



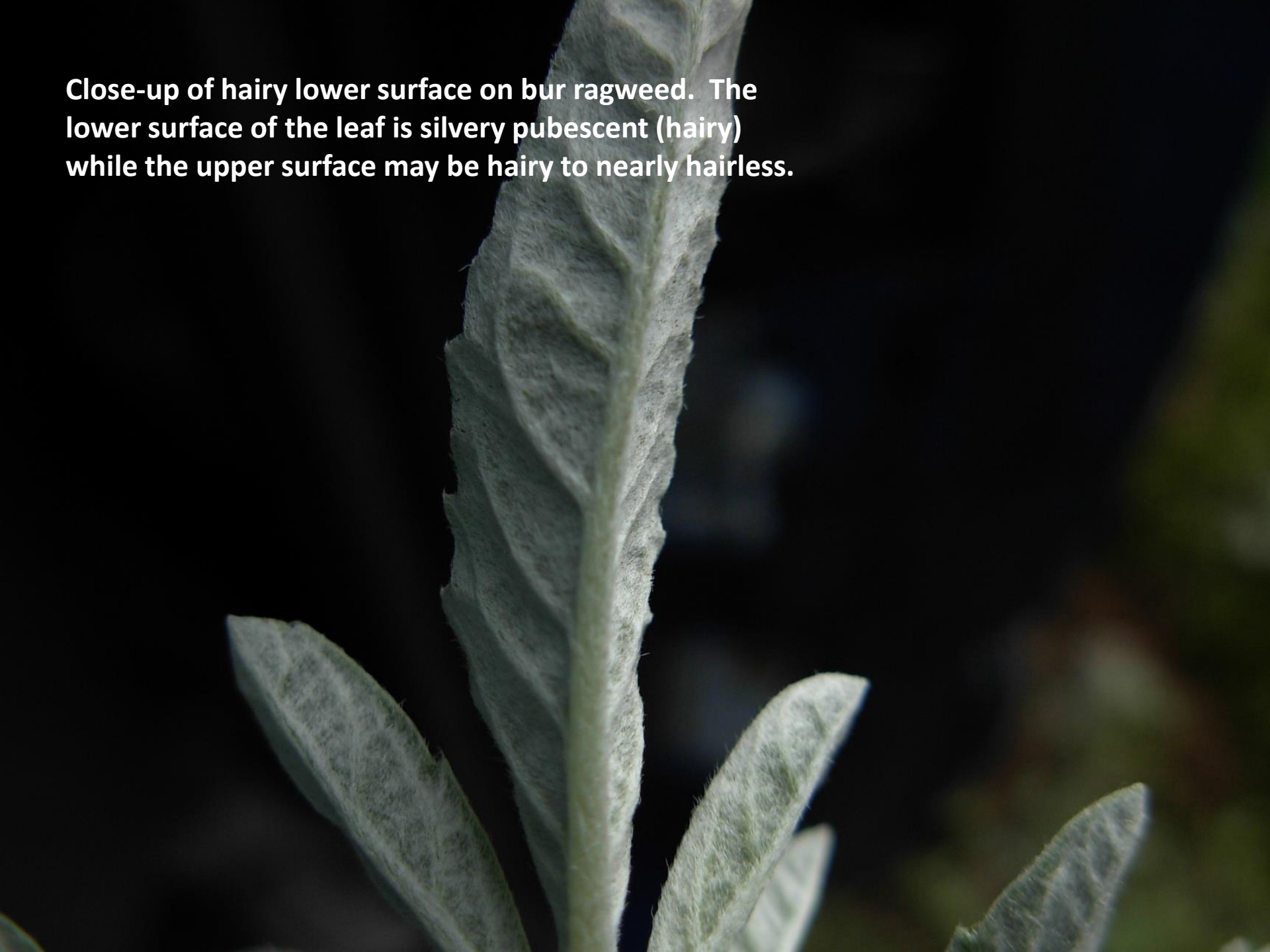
Bur Ragweed (aka woolly leaf bursage), again- prohibited weed



Bur Ragweed, again – prohibited weed



Close-up of hairy lower surface on bur ragweed. The lower surface of the leaf is silvery pubescent (hairy) while the upper surface may be hairy to nearly hairless.



Hoary Cress (prohibited weed) in Flower



Hoary Cress has a rhizome, or underground stem from which new plants arise. By carefully pulling this weed, the rhizome is easily distinguished from the tap root of other broadleaf weeds which may appear similar to the casual observer.



Hoary Cress: At this stage Hoary Cress might be mistaken at first casual glance for a weed such as pennycress or perhaps a mustard. Hoary Cress will have a rhizome, the others will not. Also, as the plants mature and flower they are distinctly different morphologically.



Penny cress – objectionable
Do not confuse with Hoary Cress



Mature Pennycress – objectionable weed



Johnsongrass and Sorghum almum are similar looking perennial sorghums. Both are prohibited weeds.



Johnsongrass

Johnsongrass and Sorghum alnum have rhizomes. Rhizomes are fleshy underground stems that give rise to new plants.



The image shows several green, jointed grass plants growing from a surface of reddish-brown gravel and sand. The plants have long, thin blades and distinct nodes. The background is a dense layer of small, rounded stones and fine soil particles.

Objectionable weed

Jointed goatgrass



Jointed goatgrass

Jointed Goatgrass is an objectionable weed with a special requirement. If found during inspection the seed must be conditioned using secondary equipment (length grader or gravity grader) in addition to the air/screen cleaner.





Cheat – note the erect spikelets.

Japanese Brome and Chess (not shown) will have drooping spikelets that are more cylindrical, and pubescence (hair) on the leaf sheaths whereas cheat will not or have less.

Japanese Brome and Cheat are objectionable weeds

Japanese Brome

Cheat

hairy sheath

Mostly hairless sheath



Downy Brome – objectionable weed. Has hairy leaf sheaths like Japanese brome but is “fluffier” than Japanese Brome.



Wild buckwheat is a vine and will climb or grow along the ground as conditions permit.





Wild Buckwheat-objectionable weed

Younger stems of **wild buckwheat** have a membranous sheath around the point of attachment of the leaf to the stem. This is an ocrea. Leaves are alternately attached to the main stem.



This is **wild garlic**. Wild onion appears similar but has flatter stems compared to garlic's rounder stems. Both plants when crushed, give off a characteristic garlicky odor.



Curled Dock – objectionable weed



Curled Dock, again



Oops, field bindweed

Some common weeds. Not a problem unless there are so many as to impede field inspection.

Giant Ragweed

Kochia

Lambsquarters



A common weed

Giant Ragweed



A common weed
Marestail



The prohibited weeds Canada Thistle, Leafy Spurge, Russian Knapweed, and Quackgrass and the objectionable weeds Morningglory, Hairy Vetch, Wild Oat, and Wild Mustard are not pictured.

These can be viewed at:

- https://www.southeast.k-state.edu/program_areas/crop_production/weeds/ppt-ks-weed-id.pdf

Disease, Insects, and Production Problems

Kansas State University's *Diagnosing Production Problems in Wheat* will provide adequate review of most problems the inspector will see in the field. If you did not receive one at training call KCIA or obtain one from the Extension Service.

You can also find it at this link:

<http://bookstore.ksre.ksu.edu/pubs/S84.pdf>



**Common
Bunt**

Common Bunt attacks only the seed, leaving sclerotia-filled kernels in an otherwise intact head.

Loose Smut attacks the whole head leaving behind only the central rachis of the spike.



**Loose
Smut**

Common bunt is also known as “stinking bunt” or “stinking smut”. This is because there is a definite fishy smell associated with this fungus.

This fungus more or less hollows out the kernel and replaces it with dark sclerotia. The seed coat may remain partially intact.

In the field, bunted heads may be recognized by the dark sclerotia protruding from the florets as in this picture.

Certification standards restrict the presence of common bunt in certified wheat, so the inspector should be vigilant as to its presence.



Loose Smut – note how the head appears to be coated with a cocoa-like powder. As this field matures, all that will remain of these heads will be the rachis, or central stem of the wheat spike.



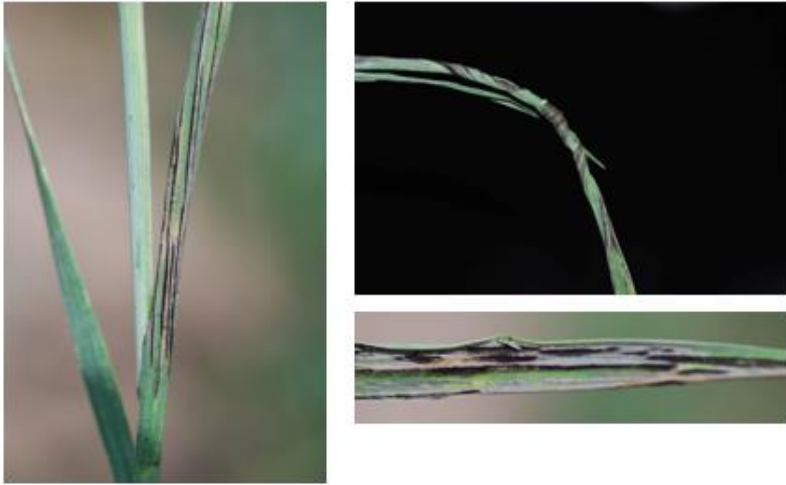
Loose Smut – as the fungus continues to eat away at the floral parts of the wheat spike, and rains and wind remove the fungal powder, all that remains of the wheat spike is the central rachis.

When conducting plant counts it is important to also keep count of these plants, as certification standards for wheat place limits on how many may be present in a field.

A sharp lookout must be maintained to see these, they will blend in very well with the surrounding wheat plants. Of course, the rachis will be the same color as the surrounding mature chaff in the field.



Flag Smut (*Urocystis tritici*)



Photos: E. DeWolf, KSU

The symptoms of flag smut are stunted plants, distorted heads, and leaves tightly wrapped around the stem. BUT, the over-riding character is the black powdery striping on the leaves.

Tightly curled or twisted leaves can be caused by several factors other than flag smut. Wheat streak mosaic virus and dry conditions can also cause this. However, there will be no black powdery stripes.

Wheat Streak Mosaic (*Tritimo virus*)



Armyworm feeding on wheat heads



Completing the Inspection Report

- View the videos *Using your myfields inspector account to prep for and report a field inspection* Parts 1 & 2 on the Inspector Training page of kscrop.org.
- The report must be completed in a clear, concise, manner.
- The report must accurately describe the field.
- The grower must be notified immediately if a field is rejected.
- Submit your report as soon as possible

Someone viewing your report should be able to:

- Confirm that the field exists and is of the correct variety.
- Confirm that isolation and/or separation, as needed is satisfactory.
- Confirm that there are no uncontrolled prohibited crops or weeds.
- Confirm by your plant counts that off-types or variants do not exceed allowable limits.

Someone viewing your report should be able to: (continued)

- Confirm that objectionable weeds are within guidelines
- Have an idea of disease or other issues

OR

If the field is rejected, clearly understand why and if the grower wishes a re-inspection.

Be sure to...

- Review the Inspector Guidelines and abide by them.
- Review the Inspection Handbook, esp. the sections on head morphology (glume characteristics), taking plant counts, and completing the report.
- Review the booklet *Diagnosing Production Problems in Wheat*.
- Visit a wheat variety plot in your area to familiarize yourself to different wheat varieties.
- Review the crop standards.
- Visit the KSU Weed Management website.
- Let me know if you have questions.