Issue 828

K-STATE Research and Extension

Extension Agronomy

eUpdate

11/20/2020

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. Control of mustards in wheat - Timely treatment is important

Too often producers do not notice mustard weeds in their wheat fields until the mustards start to bloom in the spring. As a result, producers often do not think about control until that time. Although it is still possible to get some control at that time with herbicides, mustards are much more difficult to control at that stage and often have already reduced wheat yields by then.

To minimize yield losses, mustards should be controlled by late winter or very early spring, before the stems begin to elongate (bolt; Figure 1). If mustards are present in the fall, they can be controlled with ALS-inhibiting herbicides such as Ally, Amber, Finesse, Affinity, Rave, Olympus, or PowerFlex. Huskie, Talinor, Quelex, 2,4-D, and MCPA can also provide good control of most mustards if the weeds are at the right stage of growth and actively growing, and if the wheat is at the correct growth stage. However, wheat should be fully tillered before applying 2,4-D or tillering will be inhibited. Dicamba and Starane are not very effective for mustard control.

In the late winter or early spring, blue mustard is perhaps the most difficult of the winter annual broadleaf weeds to control because it bolts very early. To be effective on blue mustard, herbicides typically need to be applied in late February or early March. Blue mustard is more difficult to control than tansy mustard with 2,4-D because blue mustard has often already bolted by the time 2,4-D can be safely applied to wheat. Thus, 2,4-D often is applied too late to be effective on blue mustard.

Figure 1. Effect of timing of blue mustard control in wheat: K-State research, 2014. Photos by Dallas Peterson, K-State Research and Extension.

Flixweed and tansy mustard should be treated when they are no larger than two to three inches across and two to three inches tall. As these plants become larger, the control decreases dramatically. Ester formulations of 2,4-D and MCPA are more effective on tansy mustard and flixweed than amine formulations. Field pennycress is easier to control than tansy mustard or flixweed. Herbicide applications made before the pennycress bolts are usually effective.

Most ALS-inhibiting herbicides control winter annual mustards very well, although there are populations of bushy wall flower (treacle mustard) and flixweed in Kansas that are ALS-resistant and cannot be controlled by these products. Alternative measures will be needed to control these populations. The best approach to control ALS-resistant broadleaf weeds is to use other herbicides or tank-mixes with 2,4-D, MCPA, Huskie, or Talinor. None of these herbicides have much residual control, so the majority of weeds need to be emerged and actively growing at the time of treatment.

Some producers commonly apply ALS herbicides with fertilizer in January or February. Unfortunately, MCPA, 2,4-D, and Huskie are most effective when applied to actively growing weeds, so application when weeds are dormant may not provide good control. As a result, if an ALS-inhibitor tank-mix with one of these herbicides is applied to dormant ALS-resistant mustards in the winter, poor control could occur.

Crop rotation with corn, grain sorghum, soybeans, cotton, or sunflowers is a good way of managing mustards as long as they are controlled in the spring prior to producing seed. Crop rotation will usually result in a gradual reduction of mustard populations in the future as the seedbank in the soil decreases.

Sarah Lancaster, Weed Management Specialist
slancaster@ksu.edu

2. World of Weeds: Downy brome

Fall is a good time to control weedy brome species, such as downy brome. This article will discuss some identifying characteristics of downy brome, as well as control measures.

Ecology of downy brome

Downy brome (*Bromus tectorum*) is native to the Mediterranean area and was introduced to New York and Pennsylvania during the late 1800's. It can be found throughout Kansas in upland settings, often in over-grazed pastures. Downy brome is a winter annual grass that typically emerges in the fall, but can also emerge in early spring (Figure 1). It produces seeds in late spring and is typically the first of the common weedy bromes to flower in spring.

Figure 1. Downy brome fall growth habit. Photo by Sarah Lancaster, K-State Research and Extension.

Identification

Key identifying features of downy brome and other weedy brome species are shown in Table 1. Seedling leaves have a clockwise twist and are covered with soft hairs (Figure 2). The closed sheath is also covered with soft hairs. The ligule is a fringed membrane (Figure 3). Mature plants can reach up to 2 feet tall with leaves up to 5 inches long. Mature leaves also have long short hairs on both

surfaces. Downy brome produces and extensive root system that reaches up to 4 feet deep and is very efficient at withdrawing water from the soil.

Table 1. Identifying features that distinguish among downy brome, Japanese brome, and cheat.

	Downy Brome	Japanese Brome	Cheat
Leaf surface	Soft, short hairs on both surfaces	Soft hairs on both surfaces	Occasional hairs
Sheath	Hairy	Hairy	Hairless to occasional hairs
Ligule	Fringed membrane	Fringed membrane, slightly pointed	Fringed membrane
Spikelet	Long awns (0.75 inches)	Awns slightly bent	Short awns (.4 inches)

Figure 2. Downy brome leaf – note the clockwise twist and hairs. Photo by Sarah Lancaster, K-State Research and Extension.

Figure 3. Downy brome ligule. Photo by Sarah Lancaster, K-State Research and Extension.

The inflorescence in an open, droopy panicle about 7 inches long. Each spikelet contains 4-8 seeds. Spikelets are tipped with an awn approximately 0.75 inches long. The awns facilitate seed dispersal by attaching to animals' coats and may cause injury to the mouths and eyes of grazing animals.

Management

There is some evidence that once established in a native area, downy brome cannot be dislodged. However, it is possible to control downy brome in winter annual crops such as wheat or canola. Control in wheat is critical, as data suggest that downy brome infestations of approximately 9 plants per square foot can reduce wheat yields 20 to 40%.

Few herbicides labeled for winter wheat will provide excellent control of downy brome. However, fall applications of herbicides such as Olympus, Outrider, or PowerFlex generally provide greater suppression than spring applications. Acceptable control of downy brome can be achieved by planting Clearfield or CoAxium varieties and applying Beyond or Aggressor, respectively.

Controlling downy brome in rotational crops is an excellent integrated management strategy. For example, grass weeds are more easily controlled in winter canola or with fall or early spring applications of glyphosate before planting a summer crop.

References:

Morrrow and Stahlman (1984), Stahlman and Miller (1990), Reddy, Stahlman, and Geier (2013)

Sarah Lancaster, Extension Weed Scientist Specialist
slancaster@ksu.edu

3. 2020 Crop Pest Management Schools are going virtual

UPDATE: K-State Research and Extension, NW Region counties/districts are hosting two **"Virtual" Crop Pest Management Schools, December 8 and December 10** starting at 7:50 AM with "online check-in" and ending at 5:00 PM.

Join us ONLINE to learn about how to control the latest pests – weeds, insects, and diseases – affecting all crops in central and western Kansas! These schools are entirely online. In order to participate, you must have a computer (desktop or laptop) or tablet with an internet connection.

Commercial Applicators can earn 1 Core Hour & 7 Hours for 1A, certified by Kansas Department of Agriculture. Certified Crop Advisors (CCA) can also earn 8 Pest Management Credits. These schools would also be an excellent educational opportunity for producers!

The cost to participate is $40. Those wishing to participate are asked to **register by Sunday, December 6, by midnight**. Simply go to: http://www.northwest.k-state.edu/events/crop-pest-mangagement-school or to any Extension Office website in the NW region or call:

Craig Dinkel, Midway Extension, 785-483-3157

Cody Miller, Phillips/Rooks Extension, 785-543-6845

Clint Bain, Golden Prairie Extension, 785-743-6361

VIRTUAL CROP PEST MANAGEMENT SCHOOL

Dec. 8 & 10, 2020

Cost to participate **$40**
Register by Sunday, December 6
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This school is conducted entirely online. Internet connection will be needed along with a device such as a laptop, desktop, or tablet

Credits Available:

Commercial Applicators:
1 Core Hour & 7 for 1A

Certified Crop Advisors:
8 Pest Management Credits

For questions please contact:

Craig Dinkel, K-State Midway District Extension Agent
(785) 483-3157 or cadinkel@ksu.edu

Clint Bain, K-State Golden Prairie District Extension Agent
(785) 743-6361 or bainc@ksu.edu

Cody Miller, K-State Phillips-Rooks Extension Agent
(785) 543-6845 or codym@ksu.edu

Sandra Wick, K-State Post Rock Extension District Agent
(785) 282-6823 or swick@ksu.edu

Jeanne Falk Jones, K-State Multi-County Agronomist
(785) 462-6281 or jfalkjones@k-state.edu

7:50 Zoom Open	
8:05 Welcome and Housekeeping	
8:15 Technology Update in Insect Control	Dr. J.P. Michaud
9:10 Those Challenging Weeds - Palmer Amaranth	Dr. Vipan Kumar
10:05 Break	
10:20 Alfalfa Management - Insects & Diseases	Dr. Romulo Lollato
11:15 Technology Update in Weed Control	Dr. Sarah Lancaster
12:10 Lunch	
12:50 Wheat Diseases	Dr. Kelsey Anderson Onofre
1:45 Application Technology	Dr. A.J. Sharda
2:40 Break	
2:55 Diseases of Row Crops (Corn, Soybeans & Grain Sorghum)	Dr. Rodrigo Borba Onofre
3:50 Kansas Regulations (Core Hour)	KDA Representative
4:45 Questions	
5:00 Adjourn	

Kansas State University is committed to making its services, activities and programs accessible to all participants. If you have special requirements due to a physical, vision, or hearing disability, or a dietary restriction please let us know when placing your RSVP. K-State Research and Extension is an equal opportunity provider and employer.

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4. Winter Forage Conference, December 10

Mark Your Calendars! The Kansas Forage and Grassland Council and Kansas State University will host their annual Winter Forage Conference from 9 a.m. to 3 p.m. on Thursday, Dec. 10, 2020, at the Great Bend Events Center – 311 10th St., Great Bend, KS 67530. The in-person event will also be available to KSFGC members via ZOOM. **You must request the Zoom link.**

Agricultural specialists will speak on a variety of topics such as pasture management involving weed control, current hay prices and statistics, insects, alfalfa information and research update.

Featured speakers include:

- Kim Nettleton, Kansas Department of Agriculture, market news
- Don Miller, Alforex Seeds
- Romulo Lollato, wheat and forages extension specialist
- Keith Harmoney, range scientist
- Walk Fick, KSU range management specialist

The event is free for current KSFGC members whose memberships extend into 2021, and registration is $25 for non-members, payable at the door. To learn more, go to https://ksfgc.org/upcoming-events/.

Everyone is encouraged to RSVP online at http://bit.ly/KSFGCam, or contact Alicia Boor by e-mail at aboor@ksu.edu or bwalton@ksu.edu, or by calling 620-793-1910. Again, don't forget to specify if you plan on attending in person or would like the ZOOM link. A fee of $15 will be added for each additional farm member who attends (to assist with meal costs).

Forage growers are encouraged to join or renew your KSFGC membership prior to December 1, at, https://www.afgc.org/i4a/ams/public/member_start.cfm?mbrAppID=9&pageID=3401, and you **MUST be a paid KSFGC member in order to get the ZOOM link.**

A limited number of free KSFGC caps will be available on a first come, first serve basis.

The Kansas Forage and Grassland Council was organized in 1988 to strengthen the forage base for the livestock industry through more efficient production and utilization. KSFGC serves to provide education and programs to strengthen the forage industry in Kansas.

Kansas State University Department of Agronomy
2004 Throckmorton Plant Sciences Center | Manhattan, KS 66506
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