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FOXTAIL (pigeongrass) CONTROL IN SMALL GRAINS – 2006
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Making the decision on whether to control foxtail in small grains is not always easy. Research has shown that low populations of foxtails often do not decrease wheat and barley yields, however; heavy foxtail infestations can cause harvest problems (especially when straight combining) and can cause dockage when the grain is delivered to the elevator.

There are some situations when the cost of a herbicide treatment for foxtail control is not justified. These situations would include:

1. When foxtail infestations are low - Less than 20 plants/ft².
2. When the foxtail emerges after the crop is in the 3- to 4-leaf stage. This is especially true for barley. Once the small grain is in the 3- to 4-leaf stage, it can usually out compete foxtail, thereby making a herbicide treatment unnecessary. However, if the foxtail population is heavy (30 plants/ft² or more) control may be needed.

Moisture stress is another factor that complicates this situation. Foxtails will cause greater yield losses under drought conditions; therefore, foxtail control is more important in droughty fields.

Making the decision on whether to apply a herbicide for foxtail control is more complicated when the foxtail is emerging with or shortly after the small grain. Some of the options to consider for foxtail control are:

1. If the foxtail infestation is heavy and is emerging with the small grain, consider harrowing or rotary hoeing as soon as possible. See the University of Minnesota Weed Science Web Site (<http://appliedweeds.coafes.umn.edu/>) for results of recent research on non-chemical control of foxtail in small grains.
2. If a harrow or rotary hoe is not an option, then consider a herbicide. If wild oats are also in the field, the herbicides of choice are Puma and Stampede – spring wheat and barley; Discover, Everest, and Silverado – spring wheat only; and Achieve – barley only.
3. If the foxtail infestation is light to moderate, then it may be possible to wait and see if the crop will be able to out compete foxtail. If foxtail is still a problem by the time the small grain is in the 4- to 5-leaf stage, then one of the approval grass herbicides can be used for control.

The following is a more in depth discussion on the control options for foxtail.

Foxtail Control:

It is important to consider all methods of foxtail control. Harrowing or rotary hoeing the field can be an effective method of foxtail control if it is done when foxtail is just emerging. Once foxtail is in the 2- to 3-leaf stage, harrowing or rotary hoeing will not give effective foxtail control. Small grains can be harrowed or rotary hoed until the 3- to 4-leaf stage with little effect on yield.

PREMERGENCE FOXTAIL CONTROL:

Treflan (trifluralin):

Treflan can be applied at 0.5 to .075 lb/A in the fall preplant incorporated or preemergence incorporated in the spring for foxtail control in spring wheat, durum and barley. Treflan can be applied preplant incorporated in the spring to barley only. Treflan in the spring should be applied preemergence and shallowly incorporated twice at right angle with a harrow. The small grain should be seeded 2 to 2.5 inches deep to permit incorporation above the seed.

POSTEMERGENCE FOXTAIL CONTROL:

Achieve (tralkoxydim):

Achieve is labeled for control of foxtail and wild oats in **barley only**. Due to crop injury potential, Achieve is **NO LONGER** labeled for use in spring wheat and durum in Minnesota. Apply Achieve to barley in the 2- to 6-leaf stage. Apply Achieve to 1- to 6-leaf wild oat. Achieve is available as Achieve SC (3.33 lbs ai/gal). Achieve use rate is 0.18 to 0.25 lbs ai/A. Use rate of product is 6.9 to 9.2 oz/A. Use the high rate when soil is dry and weeds are large. Apply Achieve in at least 10 gpa by ground or 5 gpa by air. Always add Supercharge adjuvant to the spray solution at 4 pts/100 gals of water (0.5% v/v). Ammonium sulfate at 15 lbs/100 gals of water can also be added. Numerous broadleaf herbicides can be tank-mixed with Achieve. Achieve can be tank-mixed with MCPA ester, Bronate Advanced, Buctil, Curtail M and Stinger. Achieve can be tank-mixed with 2, 4-D ester when ammonium surfactant is added. **DO NOT** tank-mix with amine formulations of labeled herbicides. **DO NOT** tank-mix with sulfonyleurea herbicides. Achieve can cause barley injury under cool, wet conditions. **DO NOT** apply Achieve to barley that has a heavy dew.

Axial (pinoxaden):

Axial is labeled for control of green and yellow foxtails, millets, wild oats, and barnyardgrass in spring wheat, durum, and barley. Apply Axial to spring wheat and barley from the 2-leaf stage up to the pre-boot stage. Apply Axial to 1 – 5 lf foxtail at a rate of 8.2 oz/A plus Adigor adjuvant at a rate of 9.6 oz/A. Adigor adjuvant is sold with Axial and one box will treat 40 acres. Apply Axial in 5-10 gpa by ground or 5 gpa by air. Axial can be tank mixed with most labeled broadleaf herbicides. Do not tank mix with dicamba containing herbicides such as Clarity. Tank mixing Axial with Curtail or Starane may decrease yellow foxtail control. Check label for rates and other restrictions. Do Not apply Axial to corn, tame oats, or rye. University of Minnesota research has shown that spring wheat, durum and barley tolerance to Axial is excellent. Research has also shown that grass weed control with Axial is excellent.

DO NOT graze livestock or feed forage or hay from treated areas for a minimum of 50 days following an Axial application. **DO NOT** apply Axial within 60 days of harvest.

Discover (clodinafop):

Discover is labeled for postemergence control of foxtail and wild oats in spring wheat and durum. Discover is **NOT** labeled for use in barley and winter wheat. Apply Discover from the 2-leaf stage until the emergence of the 4th tiller of spring wheat and durum. Apply when foxtails are in the 1- to 5-leaf stage.

Discover is sold in two different formulations – Discover and Discover NG. Discover is sold in a case that contains the herbicide and DSV adjuvant packaged in separate containers and treats 40 to 50 acres depending on the use rate. Discover must always be applied with the DSV adjuvant. **DO NOT** add any additional adjuvant. Apply Discover at 4.0 fl oz/A plus DSV adjuvant at 12.8 fl oz/A for green and yellow foxtail control. The Discover NG formulation has an adjuvant in the formulation. Use rate of Discover NG is 12.8 to 16 oz/A. Apply Discover NG at 16 oz/A for giant foxtail control. Apply at 12.8 oz/A for green and yellow foxtail control.

Discover/Discover NG can be tank-mixed with most broadleaf herbicides for green foxtail and wild oat control. However, always follow the label of the tank-mix broadleaf herbicide. For green foxtail and wild oat control, Discover/Discover NG can be tank-mixed with Starane, Starane+Sword, Bronate Advanced, Buctril, Curtail, Curtail M, Harmony Extra, Harmony GT, Harmony GT + MCPA, 2,4-D amine, MCPA amine and ester, Stinger, Curtail, Banvel and Clarity. Apply Discover/Discover NG in a minimum spray volume of 5 gpa by ground and 3 gpa by air. For yellow foxtail control, Discover/Discover NG can be tank-mixed with Bronate Advanced, Buctril and Harmony GT. Wheat injury can occur when air temperatures are below 40 degrees Fahrenheit during the period 48 hours before and after a Discover/Discover NG application. A methylated seed oil (MSO) may be applied at 0.25% v/v (2 pts/100 gals) of spray mixture for increased grass control under low moisture or high temperature stress conditions.

DO NOT graze livestock or feed forage or hay from treated areas for a minimum of 30 days following a Discover/Discover NG application. **DO NOT** apply Discover/Discover NG within 60 days of harvest. University of Minnesota research has shown that spring wheat and durum tolerance to Discover/Discover NG is good to excellent.

Everest (flucarbazone):

Everest is labeled for foxtail suppression and wild oat control in spring wheat and durum. Everest WDG is **NOT** labeled for use in barley. Apply Everest WDG from the 1- 4 leaf plus 2 tiller stage of wheat, but prior to jointing. Apply to 1- 6 leaf foxtails and wild oats. The use rate for Everest is 0.41 oz/A (0.018 a.i.oz/A) for green foxtail and 0.67 oz/A (0.027 a.i. oz/A) for yellow foxtail and wild oats. Everest can be tank mixed with 2,4-D, Ally, Buctril, Bronate Advanced, MCPA, Curtail, Curtail M, Harmony Extra, Express, and Starane.

Spring wheat and durum tolerance is fair to good. For optimum foxtail control and crop safety, Everest must be tank-mixed with a surfactant and a broadleaf herbicide listed on the label. Apply a non-ionic surfactant at 1 qt/100 gallon or 0.25% v/v. See label for rates and tank-mixing instructions. **DO NOT** tank-mix Everest with any broadleaf herbicide not listed on the label. Everest does have soil activity and re-cropping restrictions. Sugarbeets, barley, canola and potatoes should not be planted until 9 months after application. Field peas can be planted 11 months after application. See label for additional re-cropping restrictions. University of Minnesota research has shown that Everest will provide good green foxtail control and fair yellow foxtail control. Everest can cause wheat injury under adverse weather conditions.

Puma (fenoxaprop + safener):

Puma is labeled for control of foxtail and wild oats in spring wheat, durum and barley. Crop tolerance to Puma is good to excellent, with spring wheat having greater tolerance than durum or barley. Apply Puma to wheat and barley from the 2-leaf up to 6-leaf stage. **DO NOT** apply to barley after jointing. For greatest crop safety – **DO NOT** apply to wheat after jointing. Puma will control susceptible grass weeds in the 2-leaf to 2-tiller stage. Apply Puma in at least 10 gpa by ground and 5 gpa by air. Puma can be tank-mixed with numerous broadleaf herbicides, but it is important to follow label restrictions to avoid a reduction in grass control. Puma use rate is 0.33

to 0.67 pt/A. Puma at 0.33 pt/A controls green foxtail, foxtail millets, wild proso millet, and volunteer corn, at 0.4 pt/A controls yellow foxtail and proso millet, at 0.67 pt/A controls wild oat, woolly cupgrass and barnyard grass. Numerous broadleaf herbicides can be tank-mixed with Puma but it is important to follow label restrictions. For control of green foxtail, Puma at 0.33 pt/A can be tank-mixed with Buctril, Bronate, Bronate Advance, MCPA ester, Curtail M, Stinger, Starane, Express, Harmony Extra, Harmony GT, Banvel, Clarity and Tordon. Puma at 0.4 pt/A can be tank-mixed with MCPA ester, Stinger, Starane, Curtail M, Banvel, Clarity, Peak and Tordon for yellow foxtail control. Puma at 0.67 pt/A can be tank mixed with Buctril, Bronate Advance, Curtail M, Stinger, Starane, MCPA ester, Harmony Extra and Harmony GT. Puma can also be tank-mixed with Furadan, Sevin XLR Plus, Mancozeb, Tilt or Benalate. **DO NOT** apply Puma to corn, tame oat or rye. **DO NOT** apply Puma within 60 days of wheat harvest or 57 days of barley harvest. Research at the University of Minnesota has shown that Puma will provide good to excellent control of green and yellow foxtail with good crop safety. Puma will also control barnyardgrass, wild proso millet, woolly cupgrass and crabgrass at 0.4 to 0.66 pts/A.

Rimfire (mesosulfuron methyl + propoxycarbazone-sodium + mefenpry):

Rimfire is labeled for suppression of foxtails, barnyardgrass and control of wild oat (including ACC^{ase} resistant wild oat) in spring wheat and durum wheat. Rimfire will also control some broadleaf weeds such as, mustards, chickweed, redroot pigweed and volunteer canola. **Do Not** apply to barley. Apply Rimfire from emergence up to flag leaf emergence of wheat. Rimfire controls susceptible grasses from the 1-leaf to the 2-tiller stage. Rimfire can be applied at 1.75 to 2.25 oz/A. Apply in 10 gpa by ground and 5 gpa by air. Always apply with an adjuvant. Apply with a MSO at 1.5 pts/A, or NIS at 0.25 – 0.5 % v/v + UAN (1-2 qt/A) or Basic Blend at 1% v/v. Several broadleaf herbicides can be mixed with Silverado but it is always important to follow label restrictions. **Do Not** apply Rimfire within 71 days of grain harvest. See label for recropping restrictions.