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Michigan Wheat Program Wheat Field Day

## Tough talk: Roughstalk bluegrass control in winter wheat

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### Problem Statement:

Grass weed problems have become more prevalent in Michigan wheat fields over the past several years. One grass weed that has become more apparent in many Michigan wheat fields is roughstalk bluegrass (*Poa trivialis*). Roughstalk bluegrass (RSBG) is a cool-season perennial grass weed that is primarily a problem in turfgrass. This grass is common in many Midwestern states and is becoming more of a problem in hay and more recently in winter grains. This perennial grass can survive in turf year-to-year by creeping, above-ground stems, known as stolons. However, we believe that in hay and in wheat most of the spread is by seed. As roughstalk bluegrass grows it becomes 1 to 3 feet tall and often exceeds the wheat canopy once it flowers in May. However, roughstalk bluegrass really becomes apparent in winter wheat once the plants start to mature and turn a golden-brown color in June just prior to seed shed, while wheat is still green. While we have some general knowledge about the biology and growth of roughstalk bluegrass in turf, there is very little information available about how it grows in wheat.

### Research Questions:

- When does roughstalk bluegrass emerge in winter wheat in Michigan?
- What herbicides and when is the best time to apply them to manage roughstalk bluegrass in winter wheat?

### Roughstalk Bluegrass Herbicide Options Examined in 2019:

- **Osprey** (*mesosulfuron*): SOA Group: 2, Rate: 4.75 oz/A, Labeled timings: between Feekes 1 and 6, Additives: NIS + AMS, Strengths: grasses (including windgrass, annual bluegrass (that has not started to flower)). Will not control ALS-(Group 2) resistant weeds.
- **PowerFlex HL** (*pyroxsulam*): SOA Group: 2, Rate: 2 oz/A, Labeled timings: between Feekes 1.3 and 6, Additives: NIS + AMS, Strengths: grasses (including windgrass, cheat, downy brome, annual bluegrass (that has not started to flower)), chickweed, mustards, common lambsquarters. Will not control ALS-(Group 2) resistant weeds.
- **Axial XL** (*pinoxaden*): SOA Group: 1, Rate: 16.4 fl oz/A, Labeled timings: between Feekes 1.2 and 8, Additives: none, Strengths: grasses (including annual ryegrass, windgrass).
- **Axial Bold** (*pinoxaden + fenoxaprop-p-ethyl*): SOA Group: 1 + 1, Rate: 15 fl oz/A. This is a newer premixtures labeled for use in winter wheat. Labeled timings: between emergence and Feekes 8 (preboot), Additives: none, Strengths: grasses (including annual ryegrass, windgrass).
- **Osprey, PowerFlex HL, Axial XL, and Axial Bold:** were all tank-mixed with Huskie to determine if there is was increased crop injury or decreased roughstalk bluegrass control.

### 2018 Study and Results:

- In 2018, we examined Fall (Feekes 1.3) on October 10, early spring (Feekes 4) on April 26 and late spring (Feekes 5-6) on May 8 applications of Osprey, PowerFlex HL, and Axial XL for roughstalk bluegrass control in winter wheat.
- From our 2018 study we documented that a majority of roughstalk bluegrass emerged in the fall, less than 15% emerged in early spring. Roughstalk bluegrass started to head out on May 8, seed heads were visible by May 18, matured and turned a golden-brown color on June 1.
- Herbicide application influenced roughstalk bluegrass control. Across all treatments roughstalk bluegrass control was greatest from early spring applications when wheat was at Feekes stage 4 and average roughstalk bluegrass height was 2-inches.
- At this timing, Osprey or Axial XL provided the greatest roughstalk bluegrass control (>90%).
- Control was reduced dramatically when applications were made in late-spring.
- In 2018, winter wheat yield was reduced by over 50% yield loss when roughstalk bluegrass was not effectively controlled.

### 2019 Study and Results:

- Weather conditions in Fall 2018, caused planting delays and delays in growth of winter wheat. Winter wheat was planted on October 24. With the later planting date and starting with a clean seedbed, there was very little roughstalk emergence prior to the 2019 spring and overall RSBG populations were lower due to these conditions. Because of the lack of fall wheat growth, fall herbicide treatments were not applied.
- In 2019, spring herbicide applications occurred at Feekes 5 on May 15 when RSBG was 0.5 – 3 inches tall. RSBG appeared to be delayed by about two weeks in maturity this year compared with 2018. Additional late season herbicide applications are also being examined.
- At the two week evaluation, spring applications of Osprey, PowerFlex HL, Axial XL, or Axial Bold provided >90% roughstalk bluegrass control.
- Tank-mixtures with Huskie did not affect RSBG control with Osprey or PowerFlex HL, but RSBG was reduced when Axial or Axial Bold were tank-mixed with Huskie. This slight reduction in control did not occur in 2018. Current evaluations are ongoing.

### Take Home Message:

Growers should be on the lookout for roughstalk bluegrass in winter wheat. If roughstalk bluegrass is anticipated in wheat, a grass herbicide like Osprey or Axial XL/Axial Bold should be included as a component of the overall weed management program.



Roughstalk bluegrass seedling in wheat in early April.

Roughstalk bluegrass in a Michigan wheat field.

