



March 20, 2019

Michigan Wheat Program Annual Meeting

Roughstalk bluegrass control in winter wheat

Christy Sprague, Professor, Weed Extension Specialist

Problem Statement:

Grass weed problems have become more prevalent in Michigan wheat fields over the past several years. These grass species can be difficult to manage, especially since most winter wheat herbicide programs focus on managing broadleaf weeds. Many of these herbicides do not have grass activity. While there are a few different herbicide options that can be used to manage grasses in wheat, many growers do not use these herbicides until they have a problem. One grass weed that has become more apparent in many Michigan wheat fields is roughstalk bluegrass (*Poa trivialis*).

Roughstalk bluegrass 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?

Herbicide Options and Timings Examined:

- **Zidua** (*pyroxasulfone*): Site of Action (SOA) Group: 15, Timing: can be applied delayed preemergence or early postemergence. Rates examined: 1 and 2 oz/A. Zidua is labeled for use in wheat but can cause some injury under certain conditions. Zidua is not typically used as a winter wheat herbicide in Michigan.
- **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. We examined Osprey for roughstalk bluegrass control in the Fall (Feekes 1.3) on October 10, early spring (Feekes 4) on April 26 and late spring (Feekes 5-6) on May 8.
- **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. We examined PowerFlex HL applications in the Fall, early spring, and late spring.

- **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). We examined Axial XL applications in the Fall, early spring, and late spring.
- **Olympus** (*propoxycarbozone-sodium*): SOA Group: 2, Rate: 0.9 oz/A. This herbicide is not currently labeled in Michigan. We examined Olympus in the Fall (Feekes 1.3) on October 10.
- **Osprey, PowerFlex HL, and Axial XL** were all tank-mixed with Huskie and Talinor to determine if there is was increased crop injury or decreased roughstalk bluegrass control.

Results from 2018:

- 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, and matured and turned a golden-brown color on June 1.
- The time of 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.
- Roughstalk bluegrass was very competitive and resulted in over 50% yield loss when it was not effectively controlled.

Recommendations after year 1:

- Roughstalk bluegrass needs to be controlled or significant yield loss can occur.
- Early spring applications of Osprey (4.75 oz/A), or Axial XL (16.4 fl oz/A) applied to 1-2" roughstalk bluegrass provides the greatest control.
- However, if growers use fall applications they will be able to reduce RSBG populations to limit wheat yield loss.
- Later spring applications should be avoided due to poorer control and yield reductions from RSBG competition.

Take Home Message:

Growers should be on the lookout for roughstalk bluegrass in winter wheat. If roughstalk bluegrass is anticipated in wheat, Osprey or Axial XL 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.

