

Ryegrass Burndown in Row Crops Demonstration

Cooperator: Jerry Pearson

Coordinator: Dr. Tommy Butts

Location: Lollie **GPS:** 35.0495 -92.5348

Treated: March 24, 2021

Rated: April 21, 2021

Summary: Ryegrass is one of the top three weeds in Faulkner County. Ryegrass is the number one weed of wheat in-season and hay producers growing bermudagrass are seeing more problems with controlling ryegrass before the first harvest of hay. Most recently we have seen an increased problem of controlling ryegrass before planting in corn, soybean and rice fields in burndown applications. One of the reasons for this issue is that ryegrass in Faulkner County is getting more resistant to the most used burndown herbicide glyphosate. The reason for this demonstration is to look at burndown options for row crop producers to control ryegrass before planting.

Results: The demonstration was treated on March 24, 2021 with a back sprayer at 15 gallons per acre and a 10 foot boom with TeeJet AIXR nozzles.

- 9 DAT - The Gramoxone treatment showed significant burn and the plot looked initially like 100 percent control for both ryegrass and winter annual broadleaves (buttercup and curly dock). Roundup PowerMax treatments started turning color at this time also but not to the extent of the Gramoxone.
- 14 DAT – The PowerMax plot by itself had significant color change. You could find ryegrass plants that were dying and some that were still green. Select Max had started turning the ryegrass purple and growth on the plants had stopped. Leadoff had a small amount of purple on the ryegrass leaves, but the buttercup and curly dock had significant purpling. The Gramoxone plot started showing signs of greening back up and regrowth. Roundup PowerMax plus Select Max was easily the best looking treatment at this point for both ryegrass and winter annual broadleaves.
- 28 DAT
 - Roundup PowerMax had some dead ryegrass plants but regrowth had started. 40% of the ryegrass plants were controlled. This indicates glyphosate resistance was prevalent in this ryegrass population.
 - Select Max was working well by this point on ryegrass. Leaves could easily be pulled out of the whorls of plants showing death. Buttercups and curly dock made rating more difficult (as Select Max has no broadleaf activity) but 85% of the ryegrass plants were controlled.
 - Leadoff showed very little control of ryegrass. There was some purpling but little control. Buttercups and curly dock was controlled at 100%. This highlights that this ryegrass population was also ALS-inhibitor-resistant; therefore, two sites-of-action are unavailable for the effective control of ryegrass in the area.

- The Gramoxone plot was significantly greener by this point and regrowth was moving along rapidly. This highlights why the Extension recommendation is to use 2 shots of Gramoxone applied sequentially approximately 14 days apart to achieve complete control of ryegrass.
- Roundup PowerMax plus Select Max at full label rates was a good treatment for all the weeds in the plot. Ryegrass was controlled at 85% and the buttercups and curly dock were controlled at 100%.

After rating the demonstration, it was determined that two additional treatments should have been added to look at including Gramoxone followed by Gramoxone and Gramoxone plus metribuzin. Both of these treatments have been shown in university research to be beneficial in the control of ryegrass plus other winter annual broadleaves.

Treatment	Rate/Acre	Percent Control 28 DAT		
		Ryegrass	Buttercup	Curly Dock
Roundup PowerMax	1 quart	40%	100%	100%
Select Max	16 ounces	85%	0%	0%
Leadoff	1.5 ounces	10%	100%	100%
Gramoxone (2 lb material)	64 ounces	40%	100%	100%
Roundup PowerMax + Select Max	1 quart 16 ounces	85%	100%	100%

14 DAT

1 quart of Roundup PowerMax



16 ounce of Select Max



1.5 ounces of Leadoff



64 ounces of Gramoxone



1 quart of Roundup PowerMax + 16 ounces Select Max



28 DAT

1 quart of Roundup PowerMax



16 ounce of Select Max



1.5 ounces of Leadoff



64 ounces of Gramoxone



1 quart of Roundup PowerMax + 16 ounces Select Max

