

**Alion® crop safety and efficacy in Kentucky Bluegrass**  
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**Introduction**

In fall of 2023, an herbicide trial was conducted to evaluate the safety and efficacy of Alion (indaziflam) in Kentucky bluegrass grown for seed. Annual grass weeds, such as Italian ryegrass (*Lolium multiflorum*), are difficult to control in grass seed fields and infestations can reduce stand quality, longevity, and productivity. Alion controls annual grass weeds by inhibiting cellulose biosynthesis in newly germinated seedlings.

**Methods**

The study was established in a 2<sup>nd</sup>-year Kentucky bluegrass field near Rockford, WA. Treatments were applied when the Kentucky bluegrass was 3 to 5 tiller and actively growing in the fall of 2023. Treatments were applied with a CO<sub>2</sub> powered backpack sprayer and a 5 ft boom with 3 Teejet 11002VS nozzles with an effective spray pattern of 8 ft and calibrated to deliver 15 gallons per acre (GPA). The study was conducted in a randomized complete block design with 4 replications. Plots were 10 ft by 25 ft long. Treatments were assessed for crop response and weed control in the spring, 6 months after treatment. Two ½ m<sup>2</sup> subsamples were harvested from each plot to estimate yield. Data were subject to ANOVA using the Agricultural Research Manager software (Ver. 2024).

*Table 1. Treatment application details.*

Study Application		
Application Code	A	B
Date	10/12/2023	4/17/2024
Application volume (GPA)	15	15
Timing	Postemergence	Postemergence
Crop Stage	3 to 5 tillers	3 to 5 tillers
Air temperature (°F)	55	40
Wind velocity (mph, direction)	4, NNE	2, N
Relative humidity (%)	66	62

**Results**

Weed control complete for all herbicide treatments across all evaluation dates (188, 203, and 217 days after first application). Alion, regardless of rate, and Callisto at 16 oz/a are effective for controlling Italian ryegrass.

No visible crop injury (0% phytotoxicity) was observed across all treatments during the evaluation period. Both Alion and Callisto were safe for use on Kentucky bluegrass at the rates tested in this trial. Plots were harvested on July 2, 2024. Yield was similar among treatments due to low weed pressure and absence of crop injury. Germination percentage was assessed using a subset of harvested seeds. Germination for all treatments ranged 70-78% and was not significantly different among treatments. Germination rates are reported as a percentage of viable seeds that germinated under controlled conditions.

The yield and germination data indicate that the split application of Alion (1.5 oz/a) slightly outperformed other treatments, achieving the highest yield and germination rates. While Alion at 3 oz/a resulted in lower yields, it maintained germination rates comparable to other treatments, suggesting that the higher

rate might impact yield due to other factors rather than seed quality. The herbicides in this trial effectively controlled Italian ryegrass with no adverse effects on Kentucky bluegrass. These findings support their use as effective weed management tools in grass seed production systems. Future studies could explore tank mixes and longer-term effects on crop performance.

**Table 2.** Yield (lb/A) and germination (%) of Kentucky bluegrass in response to increasing rates of Alion herbicide treatments. Means were not significantly different between treatments ( $\alpha=0.5$ ).

Treatment	Rate		Timing	Yield (lb/A)		Germination (%)	
				7/2/2024	11/22/2024	7/2/2024	11/22/2024
Alion	2	oz/A	A	1208		70	
Alion	3	oz/A	A	912		74	
Alion	1.5	oz/A	A				
Alion	1.5	oz/A	B	1333		78	
Callisto	16	oz/A	A	1134		77	

### Off-Label or Experimental-Use Disclaimer

**Some of the pesticides discussed in this presentation were tested under an experimental use permit granted by WSDA. Application of a pesticide to a crop or site that is not on the label is a violation of pesticide law and may subject the applicator to civil penalties up to \$7,500. In addition, such an application may also result in illegal residues that could subject the crop to seizure or embargo action by WSDA and/or the U.S. Food and Drug Administration. It is your responsibility to check the label before using the product to ensure lawful use and obtain all necessary permits in advance.**