

Alion® crop safety and efficacy in Kentucky bluegrass

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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 (indaziflam) controls annual grass weeds by inhibiting cellulose biosynthesis in newly germinated seedlings. The objective of this study was to evaluate the crop safety and efficacy of Alion in Kentucky bluegrass grown for seed.

The study was established in a 1st-year Kentucky bluegrass field near Rockford, Washington. Treatments were applied when the Kentucky bluegrass was 3 to 5 tiller and actively growing in the fall of 2024. Treatments were applied with a CO₂ powered backpack sprayer. The spray boom had four Teejet 11002VS nozzles with 20-inch spacing and spray output was calibrated to deliver 15 gallons per acre at 3 mph. Plots were 10 ft wide by 30 ft long, arranged in a randomized complete block design with four replications. Treatments were assessed for crop response and weed control in the spring, 6 months after treatment A. Two ½ m² 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.

Application Code	A	B
Date	10/29/2024	4/17/2025
Application volume (GPA)	15	15
Timing	Postemergence	Postemergence
Crop Stage	3-5 tillers	3-5 tillers
Air temperature (°F)	42	53
Wind velocity (mph, direction)	78	28
Relative humidity (%)	6, SSW	8, N

Weed control complete for all herbicide treatments across all evaluation dates (170, 176, and 211 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 June 20, 2024. Yield was similar among treatments due to low weed pressure and absence of crop injury.

The yield data indicate that the split application of Alion (1.5 oz/a) slightly outperformed other treatments, achieving the highest yield. While Alion at 3 oz/a resulted in lower yields, 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 ¹	Rate		Timing	Yield (lb/A)
				6/20/2025
Alion	2	oz/A	A	3476
Alion	3	oz/A	A	3468
Alion	1.5	oz/A	A	3809
Alion	1.5	oz/A	B	
Callisto	16	oz/A	A	3873

¹All treatments included NIS 0.05%V/V.

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