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Imprelis 2SL Crabgrass and Broadleaf Weed Efficacy and Seedling Tolerance

Abstract

Previous studies have shown that Imprelis (aminocyclopyrachlor) 2SL has been successfully used in controlling broadleaf weeds in existing stands of turf. The objectives of this study were to evaluate various application rates and application sequences of Imprelis 2SL for control of crabgrass and broadleaf weeds, as well as seedling tolerance, in spring seedings.

Keywords

RFR A1004, Horticulture, Turfgrass

Disciplines

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Imprelis 2SL Crabgrass and Broadleaf Weed Efficacy and Seedling Tolerance

RFR-A1004

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Introduction

Previous studies have shown that Imprelis (aminocyclopyrachlor) 2SL has been successfully used in controlling broadleaf weeds in existing stands of turf. The objectives of this study were to evaluate various application rates and application sequences of Imprelis 2SL for control of crabgrass and broadleaf weeds, as well as seedling tolerance, in spring seedings.

Materials and Methods

This study was conducted at the Iowa State University Horticulture Research Station, Ames, IA. The soil for the study site was a disturbed Nicollet clay soil, with a pH of 7.25, 11 ppm P, 87 ppm K, and 3.5 percent organic matter. The study was arranged in a randomized complete block design, with four replications. Individual plot sizes measured 5 ft × 5 ft (25 ft²). The entire study area was seeded with Bedazzled Kentucky bluegrass prior to the initiation of treatments at a rate of 1.5 lb/1,000 ft².

There were four different materials used, all in different combinations and timings, for a total of 22 individual treatments, which included an untreated control plot (Table 1). There were six different timings that treatments were applied: at the time of seeding; 7 days after seeding; 14 days after seeding; 30 days after seeding; 37 days after seeding; and 44 days after seeding (Table 1). The actual dates of

treatments were May 25, June 2, June 10, June 24, July 1, and July 8. All treatments were in liquid form, and applied using a CO₂ backpack and handheld boom. The spray volume rate was equal to 3 gallons/1,000 ft². The study area was treated like a newly seeded area, irrigating multiple times per day. However, following applications, irrigation was delayed 24 to 36 hours.

Data collection was to include percentage cover of the Kentucky bluegrass, percentage cover of target weeds (crabgrass and other broadleaf weeds), and phytotoxicity, following postemergence applications. Data were to be collected 7, 14, 30, 42, 60, and 90 days after the initial application. Data were collected on June 11, June 25, July 15, August 5, and October 5, which corresponded to the desired assessment dates (Tables 2–7). Data were not collected at 7 days after initial treatment because there was no germination of Kentucky bluegrass or weeds. There was a late data collection at October 12 in order to better assess Kentucky bluegrass cover after the annual grassy and broadleaf weeds had died (Table 7).

Results and Discussion

Weed pressure was extremely high during the study. This is typical of spring seedings in Iowa. This year, weed pressure was higher than normal, however, due to an extremely wet summer and early fall.

The only data collection date that showed a difference in Kentucky bluegrass cover was July 15. The high weed infestation made it difficult to rate Kentucky bluegrass cover at that time. The final Kentucky bluegrass rating was made on October 12 after frost killed most weeds on the study area. No treated plots

exceeded an average of more than 40 percent Kentucky bluegrass cover at the end of the study. High variability among replications resulted in no significant differences among treatments on October 12.

Crabgrass control varied among treated plots on July 15, August 5, and October 5. These differences were generally due to dithiopyr and quinclorac treatments. There were some slight reductions in crabgrass in response to applications of Imprelis at seeding followed by an additional application 30 days later (Treatments 3 and 4), but they did not result in

increased establishment of Kentucky bluegrass.

Data were collected on several other weed species during the study. These included Purslane, Spurge, Clover, Dandelion, Carpetweed, and Pigweed. While there were some significant differences among treatments at some dates, these were generally not due to a reduction from the control. The best explanation for the differences in most cases were that control of other species earlier in the season, particularly crabgrass, resulted in open spaces in the plots that allowed later germinating species to infest the area.