

Long-term Control of Smooth Scouringrush with Finesse® and RT 3® in Wheat Cropping Systems Two Years After Treatment at Reardan, WA

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In 2021, we initiated a trial near Reardan, WA comparing applications of RT 3 and Finesse for control of smooth scouringrush in a wheat/fallow cropping system (Figure 1). Smooth scouringrush has been very difficult to control, especially in no-till cropping systems, as the routine herbicide applications for annual weed control in fallow have been ineffective. Previous research has shown that Finesse (chlorsulfuron + metsulfuron) can have activity on smooth scouringrush at least two years after application, and RT 3 (glyphosate) has been effective when applied at high rates and with an organosilicone surfactant. This study examines the effect of Finesse and RT 3 applied alone or in combination at different rates of RT 3 in the fallow phase of the grower's crop rotation for three years following application.



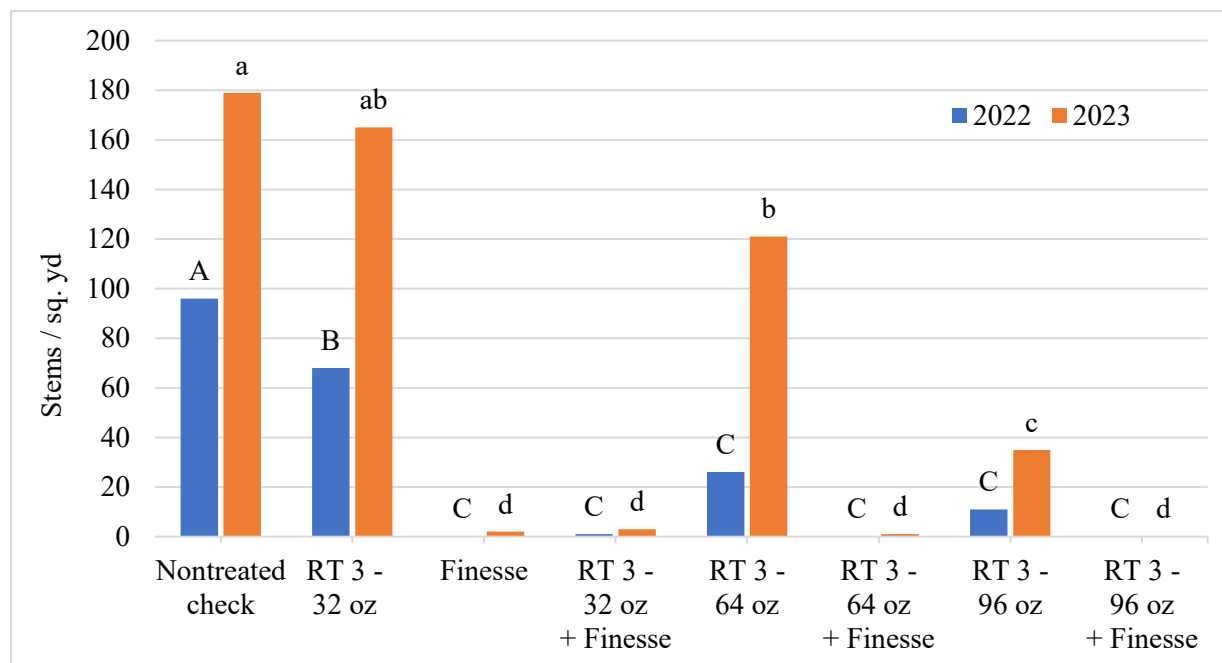
Figure 1. Smooth scouringrush in 2023 spring wheat stubble two years after 2021 applications.

The trial was initiated on July 9, 2021, in no-till fallow near Reardan, WA on the Carstens farm. The Reardan site is on a northwest-facing slope with an Athena silt loam soil and pH of 4.9 and 2.4% organic matter in the top 6 inches. All plots measure 10 by 30 ft and are arranged in a randomized complete block design with four replications per treatment. Treatments were applied

with a hand-held spray boom with six TeeJet® AIXR110015 nozzles on 20-inch spacing and pressurized with a CO₂ backpack at 3 mph. Spray output was 15 gpa at 40 psi. All treatments included an organosilicone surfactant (Silwet® L77). Initial smooth scouringrush density averaged 248 stems/yd² in July 2021. In 2022, the field was in winter wheat, and in 2023 was in spring wheat.

Smooth scouringrush control was evaluated two years after application on August 18, 2023. Evaluations were made by counting stems in two 1.2-yd² quadrats per plot. All treatments with Finesse were still very effective and averaged 96% control in 2023 compared to about 100% control in 2022 (Figure 2). In contrast to 2022, there was no difference in 2023 between the nontreated check and RT 3 alone at 32 oz/A. Also, RT 3 at 96 oz/A averaged 35 stems/yd² in 2023 and was statistically less effective than all treatments with Finesse. The biggest difference from 2022 was an increase in density in the nontreated check and RT 3 alone at 32 and 64 oz/A, which may suggest that spring wheat is less competitive with smooth scouringrush than winter wheat. The effectiveness of Finesse makes it difficult to determine if there is any benefit from adding RT 3 for smooth scouringrush control; however, a tank mix of RT 3 and Finesse in fallow may be desirable to control smooth scouringrush as well as other common weeds present at the time of application. Finesse is likely a better choice for long-term control of smooth scouringrush than RT 3 alone; however, RT 3 alone may be a better choice if sensitive crops such as canola or pulses are included in the rotation.

Figure 2. Smooth scouringrush stem density in 2022 and 2023 following treatments applied during July 2021 in fallow at Reardan, WA.*



*All herbicide treatments included Silwet L77 organosilicone surfactant at 0.5% v/v. Finesse is applied at 0.5 oz/A. Means represented by each column are based on four replicates per treatment. Columns with the same letter for each year are not significantly different at the 95% probability level, which may have resulted from similar treatment effects, but can also result from experimental or random error associated with the trial.