

## **Long-term Control of Smooth Scouringrush with Finesse® and RT 3® in Wheat Cropping Systems Three Years After Treatment at Dayton and Steptoe, WA**

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Smooth scouringrush control in wheat/fallow rotations in eastern Washington (Figure 1) has been difficult because of limited effective herbicide options. In other studies, we have shown that applications of chlorsulfuron, one of the active ingredients in Finesse (chlorsulfuron + metsulfuron), can have activity on smooth scouringrush at least two years after application; however, tank mixing RT 3 (glyphosate) with Finesse in fallow-year applications may increase control of smooth scouringrush into the following crop year and beyond. RT 3 has been effective when applied at a high rate and with an organosilicone surfactant. In contrast, Finesse is effective for at least two years after application, but when applied alone, does not control all weeds that may be present in the fallow. This study examines the effect of Finesse and RT 3 applied alone or in combination at different rates of RT 3 up to three years after application in fallow.



**Figure 1.** Smooth scouringrush in fallow (left) and in winter wheat (right).

Study trials were initiated in 2020 on the Lambert farm near Dayton, WA, and the Hall farm near Steptoe, WA. The Dayton site is on a 30-40% northwest-facing slope with a Walla Walla silt loam well-drained soil with pH 5.4 and 2.1% soil organic matter in the top 6 inches. The Steptoe site is on a low-lying flat with a Covello silt loam that is sometimes inundated with water during winter or early spring. Soil pH measured 5.8 and organic matter measured 2.9% in the top 6 inches. Treatments were applied July 6, 2020, in no-till fallow at the Dayton and Steptoe sites. All plots measured 10 by 30 ft and were arranged in a randomized complete block design with four replications per treatment. All treatments were applied with a hand-held spray boom with

six TeeJet® XR11002 nozzles on 20-inch spacing and pressurized with a CO<sub>2</sub> backpack at 3 mph. Spray output was 15 gpa at 25 psi. All treatments included an organosilicone surfactant (Silwet® L77). Initial smooth scouringrush density in 2020 averaged 326 and 279 stems/yd<sup>2</sup> at the Dayton and Steptoe sites, respectively. In 2022, winter wheat was seeded on the Dayton site and harvested in 2023. The Steptoe site was in fallow during 2023.

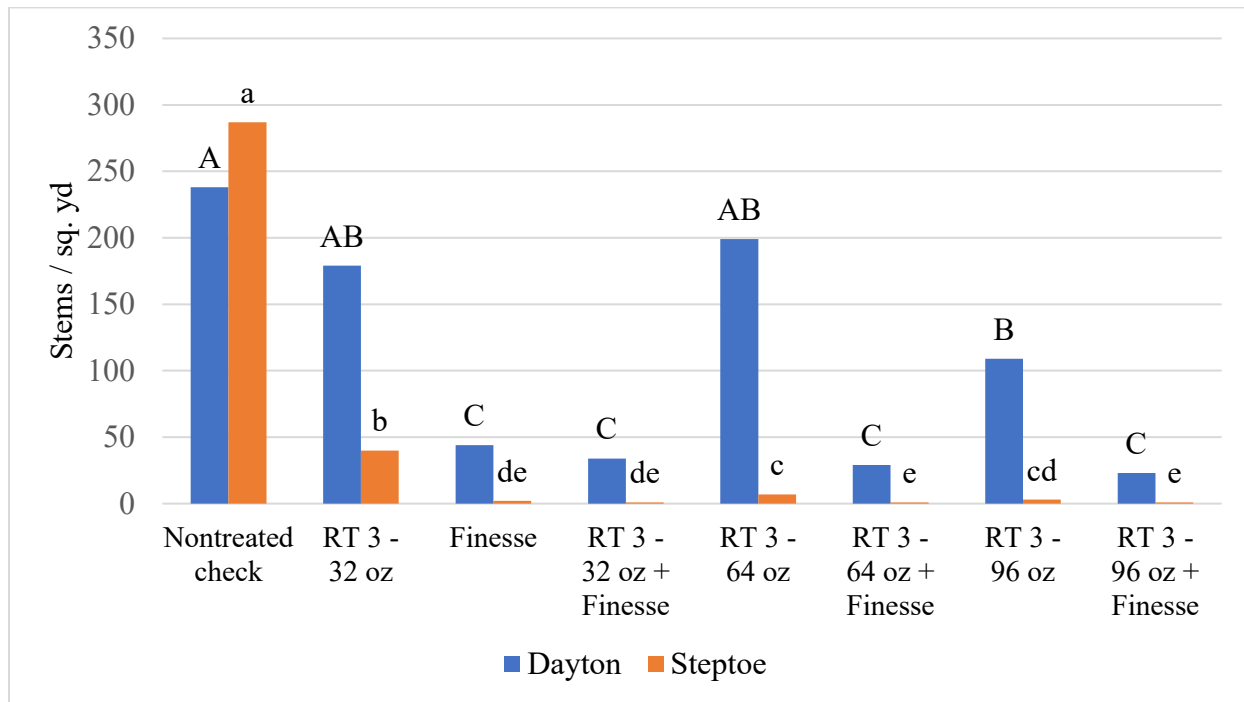
In 2023, smooth scouringrush density was assessed at each location by counting stems in two 1.2-yd<sup>2</sup> quadrats per plot. At the Dayton site, all treatments that included Finesse averaged 86% fewer stems than the nontreated check (Figure 2). There was no difference in stem density between the nontreated check and either the 32 or 64 oz/A rate of RT 3 applied alone; however, the 96 oz/A rate had fewer stems than the nontreated check (Figure 3). At Steptoe, the treatments with Finesse averaged 99.6% less density than the nontreated check, and RT 3 alone at 96 oz/A was not different from Finesse alone or Finesse plus RT 3 at 32 oz/A. Furthermore, RT 3 at 32 oz/A was 86% less dense than the nontreated check.



**Figure 2.** Smooth scouringrush in winter wheat near Dayton. Foreground treated with Finesse in 2020.

At both locations, Finesse applications were still providing good to excellent control of smooth scouringrush three years after treatment. RT 3 alone may be less effective over time but can be effective when applied at 96 oz/A in late spring or early summer with an organosilicone surfactant. Previous research has shown that good control can be achieved when RT 3 is applied in late June at 96 oz/A with an organosilicone surfactant providing stems are not in drought or heat stress. In our research, Finesse continues to be the most effective herbicide for smooth scouringrush control, but RT 3 alone may be an effective alternative to Finesse if sensitive crops like canola or pulses are to be grown in the year or two following application.

**Figure 3.** Smooth scouringrush density three years after applications of Finesse and RT 3 in fallow at Dayton and Steptoe, WA.\*



\*All herbicide treatments included Silwet L77 organosilicone surfactant at 0.5% v/v. Rates of RT 3 are in fluid oz/A; Finesse was applied at 0.5 oz dry granules/A. Columns for each location with the same letter are not significantly different ( $P \leq 0.05$ ).