

Finesse® Cereal and Fallow Herbicide timing for smooth scouringrush control in wheat/fallow cropping systems

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Finesse herbicide (chlorsulfuron + metsulfuron methyl) is effective for smooth scouringrush control when applied late spring in fallow; however, applications at other times may fit better in certain management strategies. If fall-applied treatments were effective, they would be useful if chemical fallow applications were delayed or following a crop harvest if stems are still present and green. Finesse is labeled for application anytime in fallow including just before fall seeding, and after one leaf but before the boot stage in wheat and barley. Smooth scouringrush stems usually begin emerging in May and persist until freezing temperatures in the fall. However, it is possible that smooth scouringrush may not be present or actively growing in late fall or early spring when Finesse would normally be applied and the efficacy of these timings is unclear. Glyphosate (e.g. PowerMax®, RT 3®) has been shown to be effective on smooth scouringrush, but at higher application rates than used in this study, and only with an organosilicone surfactant. PowerMax is included in this study as a comparison with a standard grower practice of applying glyphosate in chemical fallow for preplant weed control.



Figure 1. Spring wheat in 2024 near Steptoe, WA (left); smooth scouringrush growing under the spring wheat canopy (middle); Smooth scouringrush control two years after fall-applied Finesse on stems in fallow (right).

We began a study in 2022 at two farms comparing fall and spring applications of Finesse for control of smooth scouringrush. Finesse was applied in the fall to standing stems or bare soil before fall seeding. In the spring, treatments were applied before stem emergence when the winter wheat was tillering and then later when the smooth scouringrush stems were emerging but before the wheat was in the boot stage. Trials were initiated near Edwall on the Justin Camp farm and near Steptoe on the Mark Hall farm. Each site is in a no-till winter wheat/spring wheat/

fallow rotation. The Edwall site is in a gentle northwest-sloping draw bottom with good moisture and well-drained soil, which is classified as a Broadax silt loam. Soil organic matter and pH measured 2.9% and 5.0, respectively. The Steptoe site is on a gentle north-facing slope of soil classified as a Palouse-Thatuna silt loam. Soil organic matter and pH measured 2.7% and 5.0, respectively. Both sites average around 16 inches of precipitation per year.

At each site, plots measured 10 by 30 ft and were arranged in a randomized complete block design with four replications per treatment. All herbicide treatments were applied with a hand-held spray boom with six nozzles on 20-inch spacing and pressurized with a CO₂ backpack. Spray output was 15 gpa at 40 psi through TeeJet[®] AIXR110015 nozzles at 3 mph. Bare soil treatments were applied to plots where all vegetation had been mowed and removed by hand. Fall treatments were applied September 14 and 22, and early spring treatments were applied on May 8 and 11 at Steptoe and Edwall, respectively. Late spring treatments were applied May 18 at both locations; however, smooth scouringrush stems had not yet emerged at Steptoe. This was likely associated with hard dry soil and dry spring conditions observed in 2023. All treatments included either a nonionic surfactant (NIS) or an organosilicone surfactant (Syl-Coat[®]).

Final evaluations were made July 2024 by counting smooth scouringrush stems in two 1.2-yd² quadrats per plot in spring wheat crop ahead of harvest (Figure 1). Overall, treatment differences were less apparent at Edwall than at Steptoe as Edwall densities had increased substantially from 2023 (Refer to <https://smallgrains.wsu.edu/weed-resources/weed-publications/weed-control-reports/> for the 2023 report "Finesse[®] timing for Smooth Scouringrush Control in Wheat/Fallow Cropping Systems"). Smooth scouringrush plants at Edwall appeared visually more robust than at Steptoe and may have been more difficult to control. At Edwall, only the fall-applied tank mix of Finesse plus PowerMax with NIS applied to stems resulted in better control than applied to bare soil (Table 1). At Steptoe, all fall-applied Finesse treatments applied to standing stems reduced stem density compared with Finesse applied to bare soil.

At Steptoe, spring applications of Finesse to smooth scouringrush stems reduced stem density compared with the nontreated check but were less effective than if applied in the fall (Table 1). At Edwall, spring-applied Finesse did not reduce stem density compared with the nontreated check. Spring applications in the crop may be less effective as smooth scouringrush has either not emerged or has just emerged but is not yet translocating photosynthates into the roots. However, applications to stems would be more desirable than to soil. Finesse can be applied to wheat up to the boot stage, which may allow time for smooth scouringrush stem emergence.

Control of smooth scouringrush with fall applications of Finesse can be effective in some situations, but not all, and may depend on factors such as the physiological condition of the stems or population biotypes. Furthermore, applications during drought conditions or following frosts may be less favorable for herbicide uptake and efficacy. If fall applications are made, Finesse applied to standing green stems is more effective than to bare soil. Finesse is a soil active herbicide, but this study finds that soil uptake alone is not sufficient for control.

Table 1. Smooth scouringrush density in spring wheat crops two years after initial herbicide applications near Edwall and Steptoe, WA.

Treatments*	Timing	Target	Edwall	Steptoe
			-----stems/yd ² **-----	
Finesse + PowerMax + NIS	Fall	Standing stems	154 b	15 d
Finesse + PowerMax + Syl-Coat	Fall	Standing stems	196 ab	6 d
Finesse + PowerMax + NIS	Fall	Bare soil	272 a	114 b
PowerMax + NIS	Fall	Standing stems	293 a	98 bc
Finesse + NIS	Fall	Standing stems	265 a	28 d
PowerMax + NIS fb Finesse + NIS	Fall fb early Spring	Preemergence to stems in crop	198 ab	95 bc
PowerMax + NIS fb Finesse + NIS	Fall fb late Spring	Stems in crop	243 a	81 c
Nontreated check			250 a	162 a

*Finesse applied at 0.5 oz/A in fall in fallow and 0.4 oz/A in spring in crop; PowerMax was applied at 32 oz/A; NIS and Syl-Coat were applied at 0.5% v/v. All PowerMax applications included NH₄SO₄ at 17 lb/100 gal. fb=followed by.

**All stem densities for each site followed by the same letter are not different (P≤0.05).