Long term control of smooth scouringrush with Finesse® Cereal and Fallow Herbicide in winter wheat/spring wheat/no-till fallow cropping systems

Mark Thorne and Drew Lyon.

Smooth scouringrush is a problem in no-till wheat/fallow rotations in the intermediate to low rainfall areas of eastern Washington (Figure 1). In spring wheat, smooth scouringrush has the potential to be more competitive than in winter wheat as the stems can emerge near the same time as the wheat; however, in winter wheat smooth scouringrush stem emergence often doesn't occur until the wheat plants are in the jointing stage and therefore early herbicide applications may occur before stems emerge.

We evaluated smooth scouringrush control following applications of Finesse (chlorsulfuron + metsulfuron) or Rhonox® (MCPA LV ester) during the no-till fallow phase, and Amber® (triasulfuron) or Rhonox during the crop phase. We have demonstrated that chlorsulfuron, one of the active ingredients in Finesse, is effective for controlling smooth scouringrush for at least two years after application. However, the question remains whether a second application in a subsequent fallow phase is needed for continued long-term control. Furthermore, this study evaluated the application of Amber during the crop phases. Amber is molecularly similar to chlorsulfuron and is hypothesized to be a bridge application between the two fallow Finesse applications. Rhonox is a synthetic auxin herbicide (Group 4) that is used for broadleaf weed control in both fallow and grass crops and is effective for quick burndown of smooth scouringrush stems but long-term control has not been observed.

Figure 1. Smooth scouringrush stem with spore-producing cone.

Two trials were initiated in 2019, one near Edwall on the Camp farm, and a second near Steptoe on the Hall farm. Each site is in a no-till winter wheat/spring wheat/fallow rotation. The Edwall site is in a gentle-sloping northwest-facing draw 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 low-lying flat with inundated soil during winter and early spring. Soil at Steptoe is classified as a Caldwell silt loam. Soil organic matter and pH measured 3.4% and 7.2, 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 CO_2 backpack. Spray output at both sites was 15 gpa applied at 3 mph. In 2019-2021, spray was applied through

TeeJet® XR11002 nozzles at 25 psi. Applications in 2022-2024 were applied through TeeJet AIXR10015 nozzles at 40 psi to reduce drift potential. Treatment sequences and herbicide rates are presented in Table 1. Treatment evaluations each year were made by counting smooth scouringrush stems in two 1.2-yd^2 quadrats per plot.

Table 1. Herbicide sequences for long-term study for control of smooth scouringrush in winter wheat/spring wheat/fallow cropping systems trials at Edwall and Steptoe, WA.*

Seq	Fallow 2019	WW 2020	SW 2021	Fallow 2022	WW 2023	SW 2024	Fallow 2025
1	Finesse	Amber	Amber	Finesse	Amber	Amber	Final evaluations
2	Finesse	Amber	Rhonox	Finesse	Amber	Rhonox	
3	Finesse	Amber	Amber	Rhonox	Amber	Amber	
4	Finesse	Rhonox	Rhonox	Rhonox	Rhonox	Rhonox	
5	Finesse	Rhonox	Rhonox	Finesse	Rhonox	Rhonox	
6	Rhonox	Rhonox	Rhonox	Rhonox	Rhonox	Rhonox	

*Seq=sequence; Fallow=no-till fallow; WW=winter wheat; SW=spring wheat
Finesse (chlorsulfuron/metsulfuron) is applied at 0.5 oz/A.
Amber (triasulfuron) is applied at 0.56 oz/A.
Rhonox (MCPA) is applied at 34.6 oz/A in fallow and 24 oz/A in crop.
All treatments include NIS surfactant at 0.33% volume/volume concentration.

Final evaluations of each herbicide sequence were made on July 2, 2025, which assessed the cumulative efficacy of all applications since trial initiation (Table 1). At both sites, Finesse provided some level of control up to three years after treatment (Figure 2).

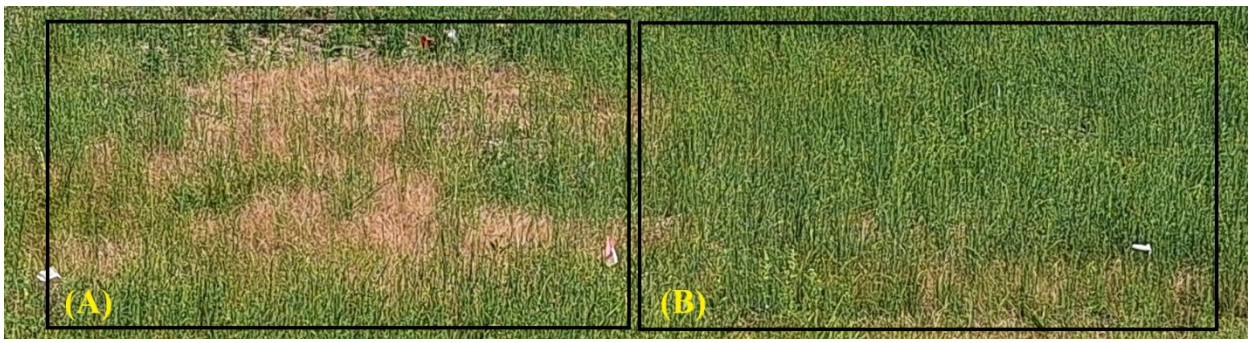


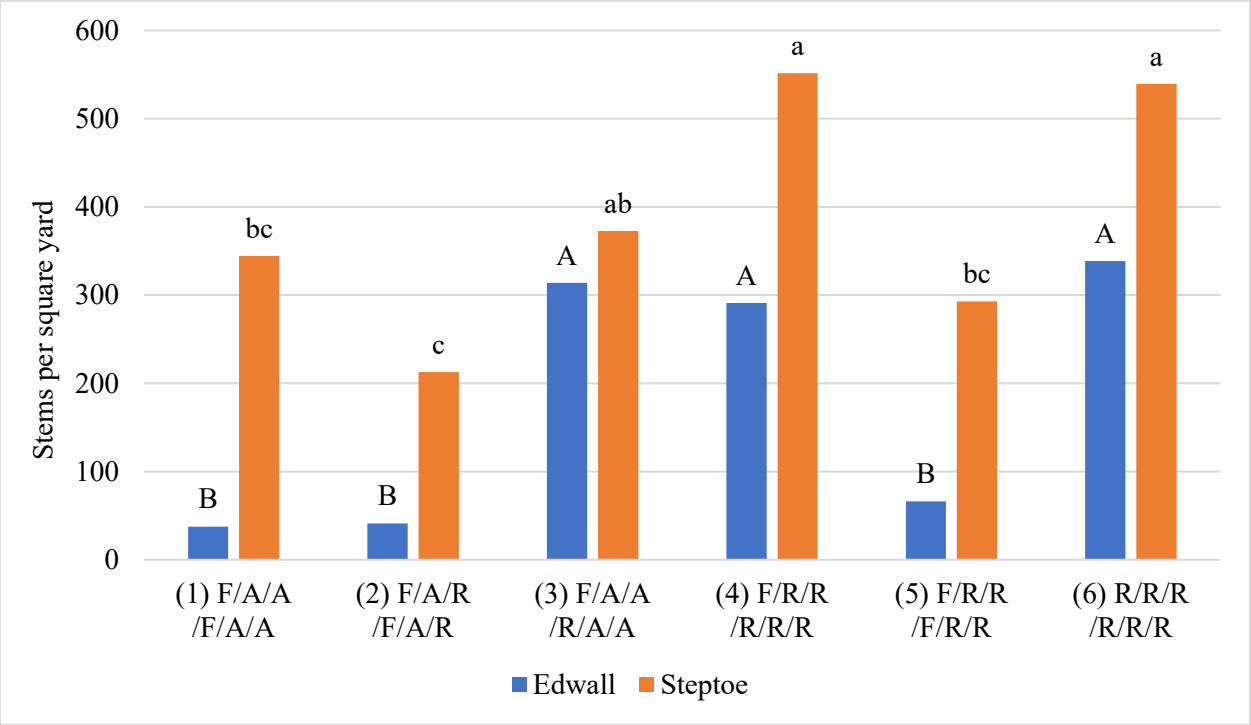
Figure 2. Smooth scouringrush in 2025 chemical fallow near Edwall, WA. Plot A had Finesse in 2022 and Rhonox in 2023 and 2024. Plot B had Rhonox in 2022, 2023, and 2024.

At the Edwall site, all treatments with Finesse applied in both fallow years (sequences 1, 2, and 5 in Figure 3) had the lowest stem density. At the Steptoe site, sequences with Finesse applied in both fallow years had the lowest stem densities compared with sequences with Finesse applied only in 2019 (sequences 3 and 4 in Figure 3) or the sequence with only Rhonox (sequence 6 in Figure 3); however, sequence 3 (Figure 3), where Amber was applied in each crop phase, was

not different from sequences 1 or 5 where Finesse was applied in both fallow years. Furthermore, Finesse applied in both fallow years at Edwall was more effective than the same sequences at Steptoe. At either site, Amber applied in the crop phases provided no apparent additional control.

Smooth scouringrush can be a problem weed in non-irrigated wheat-producing areas in eastern Washington by interfering with farming operations, plugging drain tiles, and potentially reducing crop yield. Finesse can reduce smooth scouringrush density up to three years after being applied during the no-till fallow phase, but follow-up applications are needed when re-establishment occurs. Applications during fallow are preferred as stem densities are potentially greater than in a wheat crop and likely maximizes that potential for herbicide foliar uptake.

Figure 3. Final evaluations of smooth scouringrush control in 2025 fallow in a long-term herbicide sequence study that began in 2019 at Edwall and Steptoe, WA.*



*Herbicide sequences for each rotation are listed below each set of corresponding columns and coded as follows: F=Finesse; A=Amber; R=Rhonox. Refer to Table 1 for each herbicide sequence. Means associated with each column are based on four replicates per treatment combined over two locations. Columns for each location with the same letter, case specific, are not significantly different (P≤0.05).