

## Long-term control of smooth scouringrush control with Finesse® in a no-till winter wheat/fallow rotation – final evaluation

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Smooth scouringrush is a problem in no-till wheat/fallow cropping systems in the intermediate to low rainfall areas of eastern Washington (Figure 1). We evaluated long-term control with 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: is a second application in a subsequent fallow phase needed for long-term control? This also included applications of Amber during the crop phase. Amber is similar to chlorsulfuron in molecular structure and may be a bridge application between the two fallow Finesse applications. Rhonox is a control treatment for broadleaf weeds in both the fallow and crop phases when either Finesse or Amber are not applied. It initially burns down smooth scouringrush stems, turning them black but may not reduce smooth scouringrush density in the following year.

The study site was initiated near Omak, WA in 2017 on the Townsend farm in a no-till winter wheat/fallow rotation. The soil is classified as a Ferrell fine sandy loam. Soil organic matter ranges between 1.0 to 1.1% and pH between 5.7 to 6.3. The area has an annual rainfall average of 13 inches per year. Plots measure 10 by 30 ft and are 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 TeeJet® XR11002 nozzles on 20-inch spacing and pressurized with a CO<sub>2</sub> backpack and ground speed of 3 mph. Spray output was 15 gpa at 25 psi. Initial smooth scouringrush density averaged 202 stems/yd<sup>2</sup>.

The final evaluations occurred on July 23, 2021, in no-till fallow four years after the initial treatments were applied in fallow during July 2017. Smooth scouringrush stem density was counted in each plot and is presented as number of stems/yd<sup>2</sup>. The lowest stem densities were achieved with the three treatments where Finesse was applied during fallow in 2017 and 2019. (Table 2). The sequence with only Rhonox resulted in the highest stem density. Stem density was intermediate in the two treatments where Finesse was

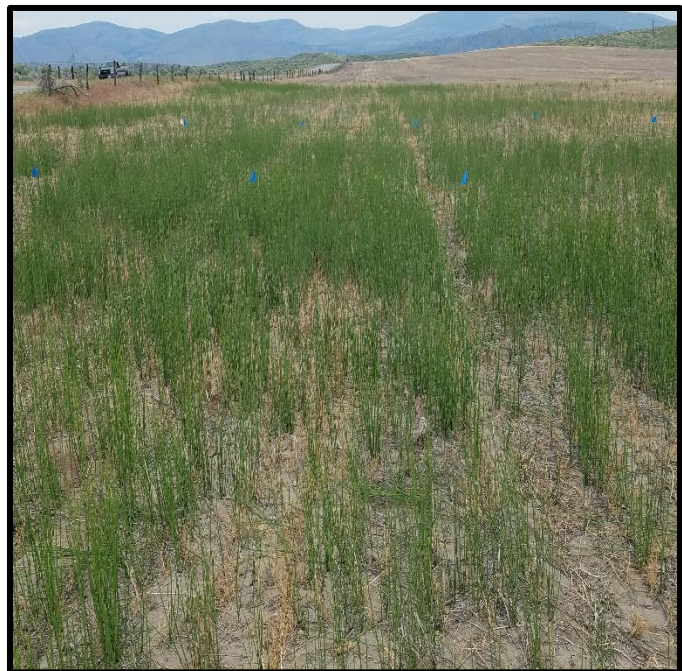


Figure 1. Initial smooth scouringrush density in 2017 in no-till fallow near Omak, WA.

only applied in fallow in 2017. The application of Amber in the wheat crop did not appear to make a significant contribution to smooth scouringrush control.

Overall, Finesse applied each fallow year resulted in better control than if only applied once. The greatest reduction from Finesse followed the initial application in 2017, which resulted in fewer stems to be sprayed in the 2019 fallow applications (data not shown), which may have limited the control of the 2019 applications. Amber was applied in the crop before most smooth scouringrush stems emerged, therefore foliar uptake was minimal. Delayed applications of Amber, if possible, may result in greater uptake. Rhonox did result in quick burn down, but long-term control was not evident.

Table 1. Smooth scouringrush final density in a long-term study with Finesse for control in winter wheat/no-till fallow near Omak, WA.

Cropping and herbicide sequences*				
Fallow 2017	WW 2018	Fallow 2019	WW 2020	Fallow 2021** stems/yd <sup>2</sup>
Finesse	Amber	Finesse	Amber	18 d
Finesse	Amber	Finesse	Rhonox	23 cd
Finesse	Rhonox	Finesse	Rhonox	19 cd
Finesse	Amber	Rhonox	Rhonox	31 bc
Finesse	Rhonox	Rhonox	Rhonox	40 b
Rhonox	Rhonox	Rhonox	Rhonox	66 a

\*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.

\*\*Means are based on four replicates per treatment. Means within a column followed by the same letter are not significantly different at the 95% probability level, which means that we are not confident that the difference is the result of treatment rather than experimental error or random variation associated with the experiment.