

Smooth Scouringrush control with Finesse® in a no-till winter wheat/fallow rotation

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Smooth scouringrush has become a problem in no-till wheat/fallow rotations in the intermediate to low rainfall areas of eastern Washington (Figure 1). We are evaluating 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: is a second application in a subsequent fallow phase needed for long-term control? Furthermore, this study evaluates the application of Amber during the crop phase. Amber is molecularly similar to chlorsulfuron 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 does not appear to reduce smooth scouringrush density in the following year.

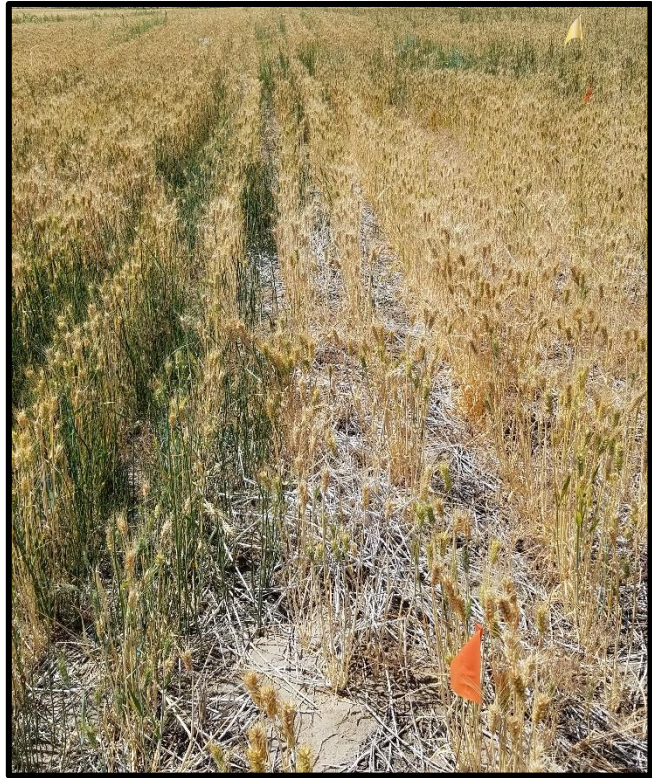


Figure 1. Effect of Finesse during the fallow year on smooth scouringrush density in the following winter wheat crop.

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 CO₂ backpack traveling 3 mph. Spray output was 15 gpa at 25 psi. Treatment sequences and herbicide rates are presented in Table 1.

Table 1. Herbicide sequences for long-term study for control of smooth scouringrush in a no-till winter wheat/fallow cropping system near Omak, WA.

Herbicide sequence*					
Trt	Fallow 2017	WW 2018	Fallow 2019	WW 2020	Fallow 2021
1	Finesse	Amber	Finesse	Amber	Final evaluations
2	Finesse	Amber	Finesse	Rhonox	
3	Finesse	Amber	Rhonox	Rhonox	
4	Finesse	Rhonox	Rhonox	Rhonox	
5	Finesse	Rhonox	Finesse	Rhonox	
6	Rhonox	Rhonox	Rhonox	Rhonox	

*Trt=treatment; 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.

At each evaluation, stem density is measured in each plot and presented as number of stems/yd². Identical treatments at the time of evaluation are grouped together for each analysis. Applications in 2020 were applied in the winter wheat phase of the rotation. The herbicide sequence that included only Rhonox resulted in the highest density of 61 stems/yd² (Table 2). Finesse applied in the two previous fallow years resulted in the best control with densities ranging between 3 and 5 stems/yd². A single application of Finesse followed by a single application of Amber (Trt 3) resulted in 9 stems/yd² and was not statistically different than Finesse followed by only Rhonox (Trt 5), which averaged 14 stems/yd². Harvest yields were not different between treatments and averaged 62 bu/A. The final evaluation will occur in 2021 in the no-till fallow phase.

This research continues to show that Finesse results in good control of smooth scouringrush for at least two years after application, and a second application in the subsequent fallow year extends control. The efficacy of Amber is not yet evident; however, smooth scouringrush stems had not emerged at the time of application. In addition, the quick burn-down from Rhonox results in very little, if any, long-term control.

Table 2. Control of smooth scouringrush with Finesse in no-till winter wheat/no-till fallow.

Time	Sequence*	Smooth scouringrush density**	
		-----stems per square yard-----	
Fallow 2017			
	Initial	186	
WW Harvest 2018			
	Finesse/Amber	0 b	
	Finesse/Rhonox	0 b	
	Rhonox/Rhonox	139 a	
Fallow 2019			
	Finesse/Amber	2 c	
	Finesse/Rhonox	3 b	
	Rhonox/Rhonox	45 a	
WW Harvest 2020			
	Finesse/Amber/Finesse/Amber	3 d	
	Finesse/Amber/Finesse/Rhonox	4 d	
	Finesse/Amber/Rhonox/Rhonox	9 bc	
	Finesse/Rhonox/Rhonox/Rhonox	14 b	
	Finesse/Rhonox/Finesse/Rhonox	5 cd	
	Rhonox/Rhonox/Rhonox/Rhonox	61 a	

*See Table 1 for application rates.

**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.