Long-term control of smooth scouringrush control with RT 3® and Finesse® applied in wheat/fallow cropping systems – replicated in 2021.

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In 2021, we replicated a trial evaluating smooth scouringrush (*Equisetum laevigatum*) control in wheat/fallow rotations in eastern Washington with RT 3 (glyphosate) and Finesse. Smooth scouringrush has been very difficult to control, especially in no-till cropping systems as most herbicides have been ineffective (Figure 1). Finesse (chlorsulfuron + metsulfuron) can have activity on smooth scouringrush at least a year after application, and RT 3 has been effective when applied at a high rate and with an organosilicone surfactant. This study examines the effect of Finesse and RT 3 applied alone or in combination at different rates of RT 3 applied in fallow.

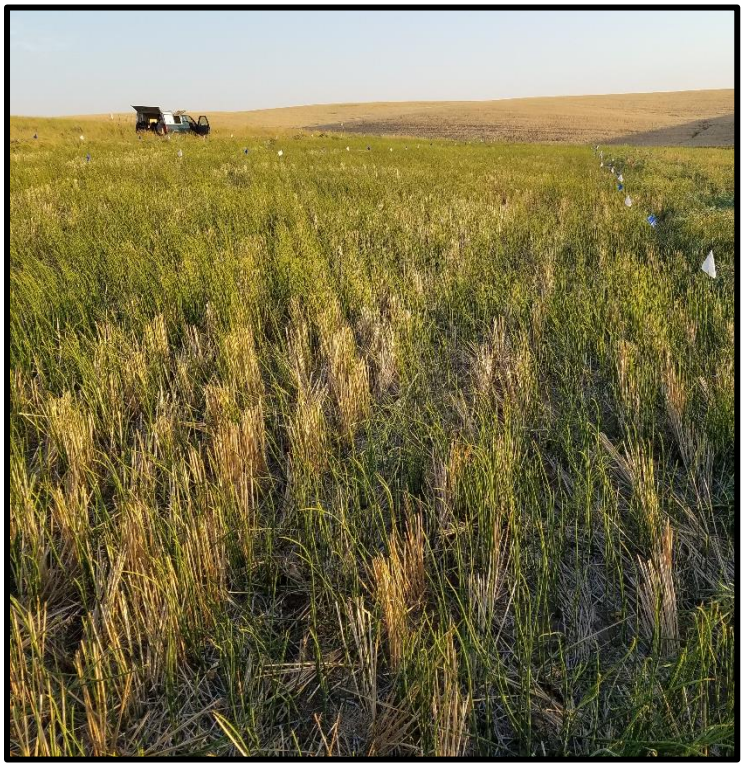

Figure 1. Smooth scouringrush in winter wheat fallow near Reardan, WA.

This trial was initiated July 9, 2021, in fallow near Reardan, WA on the Carstens farm. The Reardan site is on a northwest facing slope with an Athena silt loam soil and pH of 4.9 and 2.4% organic matter in the top 6 inches. All plots measured 10 by 30 ft and were arranged in a randomized complete block design with four replications per treatment. Treatments were applied with a hand-held spray boom with six TeeJet® XR11002 nozzles on 20-inch spacing and pressurized with a CO_2 backpack at 3 mph. Spray output was 15 gpa at 25 psi. All treatments included an organosilicone surfactant (Silwet® L77). Initial smooth scouringrush density averaged 248 stems/yd^2. In October 2021 the site was seeded to winter wheat.

Visual evaluations were made at 15, 30, and 45 days after treatment (DAT) following application. At each evaluation, the greatest visual control was seen with the 96 oz/A rate of RT 3 plus Finesse and reached 93% by 45 DAT (Table 1). Visual symptoms included stunting of growth and discoloration from light green to straw color. Furthermore, at each visual rating, no difference was seen between the 96 oz/A rate of RT 3 alone and the 64 oz/A rate of RT 3 plus Finesse, suggesting that by adding Finesse the rate of RT 3 could be reduced, even to 32 oz/A. However, the 32 oz/A rate of RT 3 alone provided very little control, which has been a common

issue for smooth scouringrush control in chemical fallow management. Stem density will be measured in 2022 to assess control one year after treatment.

Table 1. Smooth scouringrush control visually rated 15, 30, and 45 days after treatment (DAT) with RT 3 and Finesse in fallow at Reardan, WA in 2021.

		Visual control ratings**		
Treatments	Rates*	15 DAT	30 DAT	45 DAT
	oz/A		% control	
Nontreated check		0 -	0 -	0 -
RT 3	32	5 d	9 d	22 d
Finesse	0.5	15 cd	26 c	43 c
RT 3 + Finesse	32 + 0.5	17 c	35 c	65 b
RT 3	64	9 cd	23 cd	44 c
RT 3 + Finesse	64 + 0.5	34 b	59 b	77 b
RT 3	96	31 b	60 b	78 b
RT 3 + Finesse	96 + 0.5	58 a	88 a	93 a

*All herbicide treatments included Silwet L77 organosilicone surfactant at 0.5% v/v. Rates of RT 3 are in fluid oz/A; Finesse rate is in dry oz/A.

**Means are based on four replicates per treatment. Means within a column for each location 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.