Evaluation of Peak® with tank mix partners for the control of mayweed chamomile in winter wheat

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A field study was conducted at the Palouse Conservation Field Station near Pullman, WA to assess the level of control provided by Peak and tank mix partners on mayweed chamomile in winter wheat. Peak (prosulfuron) is an ALS-inhibiting herbicide (Group 2). Mayweed chamomile populations in the PNW are resistant to many of the Group 2 herbicides (Lyon et al., 2017). This study was a repeat of the study we conducted in 2021 which was under drought conditions. We wanted to rerun the study with hopes of a more typical precipitation status throughout the growing season.

The soil at this site is a Thatuna silt loam with 4.4% organic matter and a pH of 5.0. The field has been in continuous cereals and this trial followed a planting of 'Ryan' spring wheat. On October 21, 2021, a blend of 2/3 Norwest Tandem 1/3 PNW Trooper winter wheat was direct-seeded using a Horsch air seed drill with a 12-inch row spacing at the rate of 100 lb seed per acre. In the same planter pass, the field was fertilized with 150 lb N:20 lb Cl per acre. Postemergence treatments were applied on May 4, 2022 with a CO_2-powered backpack sprayer set to deliver 10 gpa at 51 psi at 2.3 mph. The applications were made at an air temperature of 60°F and relative humidity of 35% and winds were out of the south at 6 mph. The majority of the wheat had two tillers and plants were 7 inches tall. Mayweed chamomile was uniformly distributed, and its population was moderate across the trial area. Mayweed chamomile was only 0.5-inch in height and there were an average of 26 plants per square foot.

The environmental conditions were nearly opposite of the 2021 season, in that the spring had above-average precipitation and below-average temperatures. These conditions resulted in mayweed chamomile being more competitive with the winter wheat than in more typical spring weather conditions. There was no crop injury observed in this trial. Peak applied at either 0.38 or 0.5 oz/a provided poor control of mayweed chamomile (Table). Sandea, which contains halosulfuron (Group 2), provided poor control of mayweed chamomile as well. Tank-mixing Peak with several herbicides exhibited variable response in mayweed chamomile control. Colt + Salvo provided poor control of mayweed chamomile and the addition of Peak did not improve control. Maestro Advanced provided poor control of mayweed chamomile but the addition of Peak improved control. Talinor provided excellent control of mayweed chamomile, and the addition of Peak had no discernible effect. The addition of Peak to Widematch shortened the time to achieve excellent control when compared to Widematch applied alone (6/15). On the final rating date of 7/13, there was not a significant difference between the two treatments. The trial was not taken to harvest. Even though the environmental conditions during the growing seasons of 2021 and 2022 were extremely different, the performance of Peak was similar in that as a stand-alone treatment, Peak did not control mayweed chamomile in winter wheat.

		6/15	7/13
Treatment[1]	Rate	Mayweed chamomile control	
	fl oz/A	----------%----------	
Peak	0.38 oz	30 cd[3]	33 g
Peak	0.5 oz	30 cd	45 fg
Peak + Maestro Advanced	0.38 oz + 25.6	73 b	73 cd
Peak + (Colt + Salvo)	0.38 oz + 16	48 c	60 de
Peak + Widematch	0.38 oz + 16	99 a	99 a
Peak + Talinor[2]	0.38 oz + 13.7	81 ab	85 bc
Maestro Advanced	25.6	30 cd	45 fg
Colt + Salvo	16	25 de	50 ef
Widematch	16	84 ab	95 ab
Talinor[2]	13.7	93 a	93 ab
Sandea	1.0 oz	10 e	18 h

[1] All treatments were tank mixed with NIS at 0.25% v/v
[2] Talinor was tank mixed with CoAct + at 2.75 fl oz/a
[3] Means, based on four replicates, within a column, followed by the same letter are not significantly different at P = 0.05 as determined by Fisher's protected LSD test, 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.

Lyon, D.J., Burke, I.C., Hulting, A.G., and J.M. Campbell (2017). Integrated management of mayweed chamomile in wheat and pulse crop production systems. Pacific Northwest Extension Publication: PNW695 https://pubs.extension.wsu.edu/integrated-management-of-mayweed-chamomile-in-wheat-and-pulse-crop-production-systems

Sandea is not registered for use in winter wheat in Washington.

Disclaimer

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