

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

Henry Wetzel and Drew Lyon

A field study was conducted on Mike Nelson's Farm near Albion, 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). While Peak is in this group, we were not aware of how widely used it had been in the area and thought it would be worth evaluating.

The soil at this site is a Palouse silt loam with 4.5% organic matter and a pH of 5.4. The field was previously in chickpeas. On September 10, 2020, the field was fertilized with 100 lb N:20 lb P:15 lb S:10 lb Cl per acre and incorporated with a cultivator. On September 29th, 'UI Magic' winter wheat was conventionally planted using a JD 455 disk drill with a 7.5-inch row spacing at the rate of 105 lb seed per acre. Postemergence treatments were applied on April 20, 2021 with a CO₂-powered backpack sprayer set to deliver 10 gpa at 50 psi at 2.3 mph. The applications were made at an air temperature of 51°F and relative humidity of 29% and winds out of the southwest at 6 mph. The majority of the wheat had just begun to joint and plants were 9 inches tall. Mayweed chamomile was uniformly distributed, and its population was high across the trial area. Mayweed chamomile was only 0.5 inch in height and there were so many plants per square feet that we were unable to accurately count them.

Mayweed chamomile was not actively growing at the time of herbicide application due to cold nighttime temperatures. The initial assessments were challenging because the mayweed chamomile was small and not actively growing. There was no crop injury among any of the treatments evaluated in this trial. Peak applied at either 0.38 or 0.5 oz/a provided poor control of mayweed chamomile (Table). Initial symptoms were chlorosis and stunting. Overtime the plants grew out of the chlorosis but remained shorter than plants in the nontreated check. Orion, which contains florasulam (Group 2) and MCPA (Group 4), provided a low level of control, similar to Peak (0.38 oz/a) + Rhonox MCPA (16 fl oz/a). The two treatments that really stood out in this trial were Peak + Widematch and Peak + Curtail M. Chlorosis, twisting, stunting, necrosis and death of mayweed chamomile were observed by 3 weeks after application. These results suggest that the mayweed chamomile population was still sensitive to clopyralid (Group 4), a component of Widematch and Curtail M. Peak tank mixes with Huskie, Bromac Advanced, Colt + Salvo, and Talinor provided good control of mayweed chamomile. Mayweed chamomile grew as tall as the base of the wheat heads. It never grew above the canopy. We did not harvest the trial.

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>

		5/18	6/29
Treatment ¹	Rate	Mayweed chamomile control	
	fl oz/a	-----%-----	
Peak	0.38 oz/a	45 d ³	40 d
Peak	0.5 oz/a	40 d	35 d
Peak + Huskie	0.38 oz/a + 13.5	74 ab	85 ab
Peak + Bromac Advanced	0.38 oz/a + 25.6	71 ab	84 ab
Peak + (Colt + Salvo)	0.38 oz/a + 16.0	63 bc	88 ab
Peak + Widematch	0.38 oz/a + 16.0	73 ab	96 a
Peak + Curtail M	0.38 oz/a + 32.0	80 a	98 a
Peak + Rhonox MCPA	0.38 oz/a + 16.0	63 bc	54 cd
Peak + Talinor ²	0.38 oz/a + 13.7	83 a	86 ab
Talinor ²	13.7	75 ab	68 bc
Orion	17	50 cd	43 d

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.