

Evaluation of winter wheat tolerance to Talinor™ in combination with tank mix partners

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A field study was conducted on Mike Nelson's Farm near Albion, WA to generate crop safety data for Syngenta's Talinor broadleaf herbicide applied in combination with McGregor's Liquid Urea (20-0-0). Additional herbicide and/or fungicide products were tank mixed with Talinor and Liquid Urea to evaluate crop safety in a spring postemergence herbicide timing spray mixture. The combination of Talinor plus UAN was included because crop injury has been documented in the past. The treatment of Liquid Urea + Osprey® Xtra + Tilt® + NIS was included to evaluate crop response in the absence of Talinor.

The soil at this site is a Palouse silt loam with 3.8% organic matter and a pH of 5.3. The field was previously in chickpeas. On September 23, 2019, the field was fertilized with 100 lb N:15 lb P:15 lb S per acre and incorporated with a cultivator. On September 24th, 'M-Press' 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. At the time of planting, the field received M-Struct (8-24-0) starter fertilizer through the drill. Postemergence treatments were applied on April 8th with a CO₂-powered backpack sprayer set to deliver 10 gpa at 48 psi at 2.3 mph. The applications were made under calm conditions with an air temperature of 60°F and relative humidity of 30%. The majority of the wheat had just begun to joint and plants were 10 inches tall. Mayweed chamomile was not uniformly distributed, and its population was low to moderate across the trial area. Mayweed chamomile was 1.0-inch-tall at the time of application and had a density of less than one plant per square foot in the nontreated check plots. Mayweed chamomile was continuing to germinate at the time of application. On April 15th, the trial area was treated to control eyespot and stripe rust with Tilt + Talaris™ 4.5F + McGregor's M-90 (4 fl oz/a + 10 fl oz/a + 0.125% v/v), and again on May 16th to control stripe rust with Trivapro® + McGregor's M-90 (13.7 fl oz/a + 0.125% v/v).

Although the crop injury observed in the UAN 32 + CoAct + + Talinor + Osprey Xtra + Tilt + NIS treatment was greater than observed in other treatments, it was relatively minor. Symptoms were only bronzing and leaf spotting to the upper surface. In previous trials, UAN 32 was tested at 15 to 25% volume of the finished spray solution in combination with Talinor. Significant crop injury was observed in these studies which resulted in bleached streaks on uppermost leaves in the canopy and the injury symptoms did not move systemically. In this test, UAN 32 was tested at 5% volume of the finished spray solution. The majority of the injury observed in this test, looking out over the entire plot, was from the Osprey Xtra and it was transient. Compared to the nontreated check plots, plots treated with Osprey Xtra were stunted and not as vibrant green. The addition of Talinor to Osprey Xtra, did not influence the injury observed from Osprey Xtra. McGregor's Liquid Urea (20-0-0) appeared to be a safe alternative to UAN 32 to be used at the spring postemergence herbicide application timing with the various pesticides evaluated in this trial. With the low level of mayweed chamomile present, all treatments containing Talinor provided complete control. The treatment that only contained Osprey Xtra did not provide commercially acceptable control of mayweed chamomile. None of the treatments in this study influenced yield in that they were all comparable to the nontreated check.

Treatment	Rate	4/15	4/21	8/10
		Crop Injury		Yield
	fl oz/a	-----%-----		bu/a
Nontreated Check	--	--	--	162 a
UAN 32 ¹	2 qt	11 b ⁴	6 b	153 a
Liquid Urea 20-0-0 ²	3 gal	5 a	3 a	169 a
Tilt ^{®3}	4.0	5 a	3 a	161 a
Quilt Xcel ^{®3}	7.0	5 a	3 a	157 a
Trivapro ^{®3}	7.0	5 a	3 a	153 a
Peak [®] + Tilt ³	0.5 oz + 4.0	5 a	3 a	160 a
Peak + Trivapro ³	0.5 oz + 7.0	5 a	3 a	154 a
Orion [®] + Tilt ³	17 + 4.0	5 a	3 a	156 a
Orion + Trivapro + Tilt ³	17 + 7.0 + 4.0	5 a	3 a	161 a

¹Treatment included CoAct+ + Talinor + Osprey Xtra + Tilt + NIS [3.2 fl oz/a + 16 fl oz/a + 4.75 oz/a + 4.0 fl oz/a + 0.25% v/v].

²Treatment included Osprey Xtra + Tilt + NIS [4.75 oz/a + 4.0 fl oz/a + 0.25% v/v].

³Treatment included Liquid Urea (20-0-0) + CoAct + + Talinor + Osprey Xtra + NIS (M-90) [3.0 gal/a + 3.2 fl oz/a + 16 fl oz/a + 4.75 oz/a + 0.25% v/v].

⁴Means, 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.