

Evaluation of Talinor™ in tank mix combinations with nitrogen sources for crop safety and common lambsquarters and mayweed chamomile control in spring wheat

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A field study was conducted at Buck Farms near Almota, WA to evaluate crop safety and broadleaf weed control with Talinor in tank mix combinations with nitrogen sources including urea ammonium nitrate (UAN) (32-0-0), NDemand® 30L (30-0-0), Maximum N-Pact® (24-0-0), Stand, Coron® (25-0-0) and urea solution (20-0-0). The study area followed a planting of ‘UI Magic CL +’, Clearfield® winter wheat. WestBred® 6121 spring wheat was seeded on April 23, 2019 at the rate of 105 lb/A

with a double disc drill on a 7.5-inch row spacing at 1 to 1.5 inch depth. Soil at this site is an Athena silt loam with 4.3% organic matter and a pH of 5.1. On May 29th, treatments were applied with a CO₂-powered backpack sprayer set to deliver 10 gpa at 43 psi at 2.3 mph. Wheat was at the first node stage and was 12 inches tall. Common lambsquarters and mayweed chamomile had an average height of 4 and 3 inches, respectively. The air temperature was 75°F, relative humidity was 47% and the wind was out of the west at 4 mph.

The majority of the precipitation for the spring wheat crop fell by the end of April, with April precipitation being nearly 2 inches above average. The trial area received below average precipitation for the remainder of the crop season. With rain events occurring at irregular intervals, as well as, the reduced quantity that fell, it seemed to take the crop longer to recover from injury from the various treatments. With the reduced precipitation it seemed that crop growth stages were moving along quickly, in that while the majority of the spring wheat was beginning to joint at the time of application, there were some plants which had their flag leaves exposed. Plots treated with Talinor + UAN exhibited the greatest level of injury when compared to plots treated with Talinor or the nontreated check plots. The injury was composed primarily of streaks of bleaching on the leaf blades. Similar injury symptoms were noted in plots treated with Talinor + Stand, however the injury symptoms dissipated more quickly than plots treated with Talinor + UAN. Only Talinor + UAN negatively impacted yield. This may have been, in part, due to the presence of a portion of the stand’s flag leaves at the time of application. Weed control was not impacted by any of the fertilizer sources used in this study.

						Mayweed chamomile	Common lambquarters	
		-----Crop Injury-----				control	control	Yield
Treatment ¹	Rate	6/5 7 DAT	6/21 23 DAT	6/27 29 DAT	7/10 42 DAT	6/14 16 DAT	6/14 16 DAT	8/14 77 DAT
	fl oz/A	-----0 to 100%-----				0 to 100%	0 to 100%	bu/A
Nontreated Check		--	--	--	--			62 ab ³
Talinor	13.7	0 a ²	0 a ²	0 a ²	0 a ²	100 a ²	100 a ²	83 a
Talinor + UAN (32-0-0)	13.7 + 2.5 gal/A	43 d	23 c	18 c	7 b	100 a	100 a	46 b
Talinor + NDemand 30L (30-0-0)	13.7 + 2.5 gal/A	3 ab	1 a	0 a	0 a	100 a	100 a	74 a
Talinor + Maximum N-Pact (24-0-0)	13.7 + 2.5 gal/A	2 a	0 a	0 a	0 a	100 a	100 a	75 a
Talinor + Stand	13.7 + 2.5 gal/A	18 c	5 b	5 b	2 a	100 a	100 a	64 ab
Talinor + Coron (25-0-0)	13.7 + 2.5 gal/A	3 ab	0 a	0 a	0 a	100 a	100 a	73 a
Talinor + Urea Solution (20-0-0)	13.7 + 3.0 gal/A	5 ab	1 a	0 a	0 a	100 a	100 a	69 a
Talinor + Urea Solution (20-0-0)	13.7 + 5.0 gal/A	9 b	1 a	1 a	0 a	100 a	100 a	71 a
Talinor + Urea Solution (20-0-0)	13.7 + 8.5 gal/A	6 ab	1 a	0 a	0 a	90 b	97 a	71 a

¹ All treatments were applied on May 29th and tankmixed with CoAct+ and NIS (2.75 fl oz/A + 0.25% v/v).

² Means, based on three 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.

³ Means, based on three replicates, within a column, followed by the same letter are not significantly different at P = 0.01 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.