

Evaluation of Quelex™ for the control of common lambsquarters in spring wheat

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A field study was conducted at the Spillman Farm near Pullman, WA to evaluate Quelex for the control of common lambsquarters in spring wheat. Quelex is a new herbicide premixture that is offered by Dow/DuPont for the control of annual broadleaf weeds in wheat (including durum), barley and triticale. Quelex contains florasulam and the Arylex™ active (halauxifen-methyl), which are in the Mechanism of Action Groups 2 and 4, respectively. Florasulam is a compound that inhibits acetolactate synthase (ALS), a key enzyme in the biosynthesis of the branched-chain amino acids isoleucine, leucine and valine. Halauxifen-methyl is a synthetic auxin and its primary action appears to affect cell wall plasticity and nucleic acid metabolism.



The soil at this site is a Palouse silt loam with 3.2% organic matter and a pH of 5.2. The trial area was seeded to 'JD' soft white spring club wheat with a John Deere disk drill on a 7-inch row spacing. Postemergence treatments were applied on June 8th with a CO₂-powered backpack sprayer set to deliver 10 gpa at 45 psi at 2.3 mph. The applications were made under winds out of the northwest at 5 mph with an air temperature of 64°F and relative humidity of 53%. The wheat was primarily at 2 tiller and a height of 9 inches. The common lambsquarters were 1.5 inches tall and at an average density of 1,700 plants per square yard.

No significant crop injury was observed with any of the herbicide treatments. Bromoxynil-based treatments including Huskie, Quelex + Huskie and Quelex + Bromac were the first to show excellent control of common lambsquarters, 13 days after treatment. Lambsquarters in these treatments exhibited pronounced leaf tip burning. Plants in the other treatments exhibited more twisting, but leaves remained green and healthy. We were unable to evaluate all of the products individually and in combination with Quelex to see what the new premixture added control-wise to the products on the market. We chose to look at Huskie and WideMatch as they are very commonly used in the high rainfall zone for annual broadleaf weed control. Quelex as a stand-alone product was very slow acting and on the final rating date was not providing commercially acceptable control. The addition of Quelex to Huskie did not increase its performance. The addition of Quelex to WideMatch did increase its performance on common lambsquarters. WideMatch is not labelled for the control of common lambsquarters, which is supported by our observations in this study.

Treatment ¹	Rate fl oz/A	Common lambsquarters control		
		6/21 13 DAT	7/3 25 DAT	7/25 47 DAT
Nontreated Check		--	--	--
Quelex	0.75 oz	27 de ²	58 e	71 c
Quelex + WideMatch	0.75 oz + 16	37 cd	76 cd	93 ab
Quelex + WideMatch	0.75 oz + 21.3	42 bc	78 b-d	94 ab
Quelex + 2,4-D LV Ester	0.75 oz + 8	42 bc	83 a-d	100 a
Quelex + MCPA LV Ester	0.75 oz + 12	45 bc	89 a-d	100 a
Quelex + Curtail M	0.75 oz + 32	52 b	86 a-d	100 a
Quelex + PerfectMatch	0.75 oz + 16	40 b-d	73 d	85 b
Quelex + Huskie	0.75 oz + 13.5	90 a	90 ab	98 a
Quelex + Bromac	0.75 oz + 12.8	86 a	93 a	100 a
WideMatch	16	20 e	38 f	49 d
Huskie	13.5	89 a	85 a-d	96 ab

¹ All herbicide treatments, except WideMatch 16 fl oz/A, were tank mixed with NIS (0.25% v/v) + AMS (1.52 lb/A)

² 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.