

Comparing the effectiveness of different herbicide programs at controlling weeds in non-GMO soybeans

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Objective: To evaluate the level of weed control achieved by various herbicide programs, including new active ingredients.

Trial Locations: Ridgetown, Woodstock, Shipka, Elora, Orillia and Winchester

Summary: Common ragweed, lamb's-quarters and eastern black nightshade proved to be the most challenging species to manage with consistency. Herbicide resistant weed populations existed at many of the sites, specifically triazine (i.e. Sencor) resistant lamb's-quarters and group 2 (i.e. Pursuit) resistant eastern black nightshade, pigweed, green foxtail and common ragweed. Due to these challenges, herbicides that contained 3 effective modes of action or weed management system that began with a pre-emergence application followed by a post-emergent application provided the most consistent level of weed control throughout this study. Refer to Table 1 for a summary of weed control performance.

Study Deficiencies: Boundary performed poorly on eastern black nightshade at the rate used in these trials (the 30 ac/case rate = 0.46 L/ac of Dual Magnum and 233 g/ac of Sencor 75DF). The manufacturer of Boundary pointed out that this outcome was likely because the rate of Dual Magnum was too low and the highest rate would have provided effective control. This is a valid point, although it should be noted that the rate used in these trials is consistent with what is on the product's label for control of eastern black nightshade under lighter infestations. Regardless, the new formulation of Boundary (Boundary LQD) contains the highest labelled rate of s-metolachlor, which is the active ingredient that provides control of eastern black nightshade. However, the new formulation of Boundary LQD contains a lower rate of metribuzin (Sencor) than what was in the Boundary co-pack and therefore one would expect a lower level of broadleaf weed control with Boundary LQD than what is presented in Table 1.

Table 1 The minimum, average and maximum weed control ratings for each herbicide treatment evaluated in non-GMO, identity preserved soybeans during the 2011, 2012 and 2013 growing seasons.

Herbicide Treatment	Weed Control Ratings (out of 10) Ratings from left to right indicate: ⑥=minimum ⑨=average ⑩=maximum						
	Barnyard grass	Foxtail, green	Lamb's-quarter	Nightshade	Pigweed	Ragweed, common	Velvetleaf
Boundary (pre) (30 ac/case)	⑩⑩⑩	⑧⑨⑩	②⑦⑩	④⑤⑥	④⑧⑩	②⑦⑩	①⑥⑩
Boundary + Broadstrike RC (pre) (30 ac/case + 35 g/ac)	⑩⑩⑩	⑧⑨⑩	⑦⑨⑩	③⑥⑨	⑤⑨⑩	⑥⑨⑩	⑨⑨⑩
Boundary + Classic (pre) (30 ac/case + 35 g/ac)	⑩⑩⑩	⑨⑨⑩	④⑨⑩	③⑤⑦	⑤⑧⑩	⑦⑨⑩	⑧⑨⑩
Boundary + FirstRate (pre) (30 ac/case + 17 g/ac)	⑩⑩⑩	⑦⑨⑩	④⑧⑨	①④⑧	⑨⑨⑩	③⑥⑨	⑧⑨⑩
Conquest LQ (pre) (126 mL/ac + 330 mL/ac)	⑦⑨⑩	①⑧⑩	②⑨⑩	①⑤⑩	⑥⑨⑩	⑤⑧⑩	⑨⑨⑩
Conquest LQ + Frontier Max (pre) (390 mL/ac)	⑨⑨⑨	⑧⑨⑩	③⑧⑩	⑥⑧⑩	⑨⑨⑩	⑤⑧⑩	⑨⑨⑩
Conquest LQ + Valtera (pre) (56 g/ac)	⑤⑦⑨	⑤⑧⑩	⑤⑨⑩	⑧⑨⑨	⑨⑨⑩	⑧⑨⑩	⑨⑨⑩
Classic + Valtera + Prowl H2O (pre) (14.4 g/ac + 56 g/ac + 0.89 L/ac)	⑦⑧⑨	⑧⑨⑩	⑧⑨⑩	⑧⑧⑨	⑧⑨⑩	⑦⑧⑨	⑨⑨⑩
Cleansweep* (post) (126 mL/ac + 700 mL/ac)	⑨⑨⑨	①⑦⑩	④⑧⑨	①⑤⑩	⑥⑧⑩	⑦⑧⑧	⑨⑨⑨
Fierce (pre) (126 g/ac)	⑨⑨⑨	⑧⑨⑩	⑥⑨⑩	⑨⑨⑨	⑨⑨⑩	⑤⑧⑩	⑧⑨⑨
Frontier Max (pre); Cleansweep* (post) (390 mL/ac + 126 mL/ac + 700 mL/ac)	⑩⑩⑩	⑨⑨⑩	⑦⑨⑩	⑧⑨⑩	⑨⑨⑩	⑦⑧⑨	⑨⑨⑨

*28% UAN at 0.8 L/ac was included with this treatment