

Weed Response to Harmony Extra Rates and Adjuvants

J. D. Harbour, S. B. Gehlhar, and J. D. Nalewaja

Producers justify reducing herbicide rates by adding spray additives, but weed control may be sacrificed. The objective of this study was to evaluate weed control when Harmony Extra (HX) is used at recommended and incrementally reduced rates, when HX is tank-mixed with 2,4-D or Banvel, and when HX is used with two different types of adjuvants.

Herbicide spray treatments were applied to 5.5 leaf 'Verde' spring wheat. Treatments included an untreated check, HX at 0.2 (recommended rate), 0.1, 0.05, and 0.025 oz product /A, HX+2,4-D (0.2 oz/A + 0.5 pt/A), and HX+Banvel (0.2 oz/A + 0.12 pt/A). Activator 90 and ND72 at 0.25% (v/v) were added only to HX treatments. Weeds sprayed included 1- to 6-inch common lambsquarters and 6- to 8-inch kochia.

Herbicide treatments did not significantly injure wheat (data not shown), but significantly increased weed control compared to the untreated check (Table 1). Common lambsquarters control tended to decrease as HX rates decreased, while control of kochia was not significantly affected. HX+2,4-D and HX+Banvel provided excellent common lambsquarters control and good kochia control. Kochia sprayed with Harmony Extra were slightly stunted and not controlled, which is likely due to unconfirmed ALS resistance. Adding either 2,4-D or especially Banvel to HX generally improved kochia control, which emphasizes the need to tankmix ALS herbicides, such as Harmony Extra, for managing herbicide resistant weeds.

All wheat yields with HX+adjuvant were similar, but significantly greater than the untreated check and HX+Banvel. Poor yield with HX+Banvel was attributed to the very late application stage (5.5 leaf) compared to the recommended 4-leaf stage.

Averaged over adjuvants, common lambsquarters control decreased significantly from 93% to 80% as HX rates decreased from 0.2 to 0.025 oz/A, but yield was unaffected (Table 2). Kochia control and yield responses were not significantly influenced by HX rates. Averaged across HX rates, Activator 90 and ND72 did not differ significantly in weed control or resultant wheat yields (Table 3).

Table 1. Weed control and 'Verde' wheat response to herbicide treatments.

Treatment	Rate	C. Lambsquarters	Kochia	Yield
	Oz prouct/A	-----% Control ^a -----		bu/a
Untreated	0	0	0	27
HX + Act 90	0.2	94	63	35
HX + ND72	0.2	93	62	35
HX + Act 90	0.1	90	74	36
HX + ND72	0.1	76	59	33
HX + Act 90	0.05	68	69	37
HX + ND72	0.05	82	68	35
HX + Act 90	0.025	84	62	34
HX + ND72	0.025	76	55	34
HX + 2,4-D	0.2 + 0.5 pt	95	77	34
HX + Banvel	0.2 + 0.12 pt	97	89	24
LSD (0.05)		14	31	5

^a Weed control evaluated 55 days after treatment.

Treatments delivered at 8.5 gpa at 40 PSI through 8001 flat fan nozzles.

Table 2. Weed control and 'Verde' wheat response to Harmony Extra rates^a.

HX Rate	C. Lambsquarters	Kochia	Yield
Oz prod/A	% control ^b	% control	bu/A
0.2	93	62	33
0.1	83	66	34
0.05	75	68	36
0.025	80	59	34
LSD (0.05)	11	NS [†]	NS [†]

^a Data averaged across adjuvants.

^b Weed control evaluated 55 days after treatment.

[†] NS = nonsignificant.

Table 3. Weed control and 'Verde' wheat response to adjuvants^a.

Adjuvant	C. Lambsquarters	Kochia	Yield
	-----% control ^b -----		bu/A
Activator 90	84	66	36
ND72	82	61	34
LSD (0.05)	NS [†]	NS [†]	NS [†]

^a Data averaged across Harmony Extra rates.

^b Weed control evaluated 55 days after treatment.

[†] NS = nonsignificant.