

Study Name: Efficacy and Crop Tolerance of DPX-R6447, Authority, and Assure II in Sunflower

Study Number: 9942

Objectives: Evaluate weed control and sunflower tolerance to DPX-R7447 and Authority

Results: We applied the preplant and preplant-incorporated treatments the morning of May 21. We planted the sunflowers and applied the preemergence treatments that afternoon. We received 0.6 of an inch of rain later that evening.

We did not see any crop injury (stunting, discoloration, malformation, etc.) in any of the treatments. Sunflower in all plots emerged evenly and we saw no differences through July. On July 13, hail damaged the crop slightly (5-10% injury) with very few stalks broken. One week after the hailstorm, we had 80 mph winds that knocked over up to 60% of the sunflower stalks in some rows. We did not harvest the sunflowers.

In the first replication, we had an infestation of pale smartweed. None of the treatments effectively controlled it, but the higher rate of Authority did seem to suppress it somewhat compared to the untreated outside rows. With DPX-6447, there were fewer plants as the rate increased, however, it is difficult to determine if the decreased density was due to was due to the herbicide or just a natural population decline.

Table. Efficacy and Crop Tolerance of DPX-R6447, Authority, and Assure II in Sunflower

Treatment	Rate	Timing	July 3						
			Fipc	Shep	Kocz	Wibw	Fxtl	Rrpw	Colq
			-----% control-----						
Authority	0.188 lb ai	PP	57	78	83	48	53	70	88
Authority	0.375 lb ai	PP	85	91	100	65	63	72	100
Authority	0.188 lb ai	PPI	60	83	80	82	55	83	100
Authority	0.375 lb ai	PPI	83	94	98	77	67	84	100
Authority	0.188 lb ai	PRE	70	82	97	63	57	70	83
Authority	0.375 lb ai	PRE	83	96	99	73	62	78	100
Authority / Assure II	0.188 lb ai / 9 fl oz	PP / POST	62	77	97	57	96	65	97
Authority / Assure II	0.188 lb ai / 9 fl oz	PPI / POST	70	80	100	68	96	73	100
Authority / Assure II	0.188 lb ai / 9 fl oz	PRE / POST	62	88	100	53	95	67	87
DPX-R6447	1 oz ai	PRE	90	92	87	52	70	60	88
DPX-R6447	1.5 oz ai	PRE	87	86	85	57	67	62	80
DPX-R6447	2 oz ai	PRE	92	89	95	52	63	58	93
DPX-R6447 + Prowl	1 oz ai + 2.9 pt	PRE	86	84	92	60	91	90	95
DPX-R6447 + Prowl	1 oz ai + 2.91 pt	PRE	94	92	95	78	92	94	97
Prowl	4.36 pt	PRE	91	92	92	70	83	96	100
Untreated			0	0	0	0	0	0	0
LSD			22	13	11	24	16	17	17
CV			18	10	8	25	14	14	12

Table. Efficacy and Crop Tolerance of DPX-R6447, Authority, and Assure II in Sunflower

Treatment	Rate	Timing	Aug 31					
			Fipc	Shep	Kocz	Wibw	Fxtl	Rrpw
			-----% control-----					

Authority	0.188 lb ai	PP	40	68	85	35	47	68
Authority	0.375 lb ai	PP	72	87	98	65	42	77
Authority	0.188 lb ai	PPI	45	77	90	55	42	72
Authority	0.375 lb ai	PPI	70	89	99	70	43	82
Authority	0.188 lb ai	PRE	42	70	91	45	43	62
Authority	0.375 lb ai	PRE	62	88	97	60	53	70
Authority / Assure II	0.188 lb ai / 9 fl oz	PP / POST	45	67	85	47	95	52
Authority / Assure II	0.188 lb ai / 9 fl oz	PPI / POST	50	70	93	57	96	63
Authority / Assure II	0.188 lb ai / 9 fl oz	PRE / POST	45	67	95	50	95	52
DPX-R6447	1 oz ai	PRE	77	77	75	47	55	50
DPX-R6447	1.5 oz ai	PRE	77	78	78	47	55	50
DPX-R6447	2 oz ai	PRE	80	82	92	47	62	58
DPX-R6447 + Prowl	1 oz ai + 2.9 pt	PRE	67	73	88	48	77	75
DPX-R6447 + Prowl	1 oz ai + 2.91 pt	PRE	72	77	82	47	78	68
Prowl	4.36 pt	PRE	73	78	82	52	80	78
Untreated			0	0	0	0	0	0
LSD			15	12	9	16	11	13
CV			15	10	6	20	11	12