

Study Name: Crop injury following application of DPX-R6447 and Authority in sunflower

Study Number: 9926

Objectives: Evaluate crop sensitivity to DPX-R6447 and Authority following application in sunflower (Rotational crops will be planted in 2000)

Results: Sunflowers were planted on May 21,1999. Rain prevented us from applying the preemergence treatments immediately after seeding. We applied the preemergence treatments on May 25.

Kochia and pigweed were fairly uniform over the plot area. Crop injury due solely to the specific herbicides was difficult to determine in this study because of other factors that are explained below.

We have found that there is some variation in soil within the plot area. We first observed this when foxtail was emerging in some plots, but not others. For example, Prowl was applied in plots 107 and 206 (plots that are relatively close together). The foxtail population was very dense in plot 107, but almost non-existent in plot 206. Therefore, control from Prowl was either 0 or 100, depending on the plot. It is possible that the foxtail is DNA resistant. However, this presence/absence nature of foxtail was present throughout the plot area and made rating foxtail extremely difficult. Foxtail was generally either present in high densities or almost not present at all. What made this even more interesting was that the growth of the sunflower crop almost mirrored the presence/absence of the foxtail. Where foxtail was absent, the sunflower crop appeared shorter and the stand was reduced slightly (including the untreated plots). We soil sampled each individual plot and tested for soil pH, NPK, soil texture, organic matter and EC. The results indicated similar levels between plots for every soil parameter, except soil pH. The presence/absence of foxtail essentially matched soil pH. Foxtail density was inversely proportional to soil pH (where soil pH was higher, foxtail densities decreased and vice versa). In fact, within plot 304 one-half of the plot had no foxtail present and the other half did have foxtail present. We sampled each half separately and found a pH difference.

What does all this mean? Is any of this significant? Maybe not, it may or may not have any bearing on next year. The reason I present this information is because this is a plantback study and next year we will seed various crops into this plot area. If foxtail and sunflower were affected this year, we may expect to see differences between replications and crops next year.

Table. Crop injury following application of DPX-R6447 and Authority in sunflower

Treatment	Rate	Sunfl			Kocz Rrpw			
		June 19	July 3	Aug 31	July 3	Aug 31	July 3	Aug 31
DPX-R6447	0.0669 lb ai	0	0	0	73	70	65	62
DPX-R6447	0.1338 lb ai	0	2	1	91	82	89	73
DPX-R6447	0.2676 lb ai	0	5	3	99	99	99	99
Authority	0.1875 lb ai	0	0	0	93	95	88	93
Authority	0.2676 lb ai	0	0	0	98	96	98	95
Authority	0.375 lb ai	0	0	0	99	99	99	97
Prowl	3.6 pt	0	0	0	85	87	81	76
Untreated		0	0	0	0	0	0	0
LSD		0	5	4	9	9	16	20
CV		0	370	378	7	6	12	15