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Two-year Test Results Suggest Caution with Dinoseb as a Yield Stimulant for Corn or Grain Sorghum

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Studies by Dr. A. J. Ohlrogge and associates (1) initiated in 1968 generated interest in using low rates of dinoseb (2-sec-butyl-4,6-dinitrophenol, also known as dinitro, DNBP, Spark[®], and Premerge[®]), as a biostimulant on corn. Dinoseb usually is used as a nonspecific contact herbicide. Spraying dinoseb on corn two weeks before tassels emerged sometimes gave significant yield increases.

Many tests have been conducted in the midwestern states since then to determine its effectiveness on corn (2). Results have not been consistent; some have given measurable yield increases and some, yield decreases.

AGRICULTURAL EXPERIMENT STATION

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The Studies

We treated corn and grain sorghum with dinoseb at the Garden City Branch Station in 1975 and 1976 and at the Ag Experiment Station at Manhattan in 1976. Rates, hybrids used, and yield data are summarized in Tables 1 and 2.

Table 1.—Corn and grain sorghum yields (bu/A) as affected by dinoseb applications at Garden City, Kansas in 1975 and 1976.

Treatment*	Grams per acre	Sorghum		
		Corn	1975	
		1975 dryland NC+	dryland DeKalb E-57	1976 irrigated TE-Y-101R
Control		30.3	52.6	140.8
Dinoseb	2.5	30.1	52.0	138.7
	5.0	34.2	57.7	131.7
	10.0	30.3	47.6
	20.0	29.7	54.8

* None of the treatments significantly increased or decreased yields.

Table 2.—Dryland corn and grain sorghum yields (bu/A) as affected by dinoseb applications at Manhattan, Kansas in 1976.

Treatment*	Grams per acre	Corn	Sorghum
Control		95.7	114.8
Dinoseb	2.5	94.7	122.0
	5.0	90.5	117.3
	7.5	117.6
	10.0	119.3

* None of the treatments significantly increased or decreased yields.

Dinoseb was sprayed on corn when unemerged tassels were between 2.5 and 4 inches long, and on sorghum at four growth stages—growing point differentiation, flag leaf, boot, and half-bloom—as identified by Vanderlip (3).

Results and Discussion

Yields were not significantly increased or decreased in any of the experiments. Average differences in sorghum yields of treated plots ranged from 5.6 bushels less an acre on irrigated sorghum at Garden City to 4.3 bushels more on dryland sorghum at Manhattan. Average differences in corn yields of the treated plots compared to the controls were from 3.1 bushels less for dryland corn at Manhattan to 0.8 bushel more for dryland corn at Garden City.

Dinoseb did not significantly increase yields of either corn or grain sorghum in these experiments.

References

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- Vanderlip, R. L. 1972. How a Sorghum Plant Develops. *Kansas Agr. Ext. Cir.* 447.

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