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**46**

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## **Nematicide Treatment of Corn in Western Kansas<sup>1</sup>**

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The 1.5 million acres of corn harvested in Kansas in 1979 make it a major Kansas crop. Estimated yield losses attributed to diseases are nearly 20%. Nationally, more than 40 species of nematodes, a cause of disease, have been reported feeding on or in association with corn roots. Those in Kansas include lesion nematodes, spiral nematodes, stunt nematodes, dagger nematodes, lance nematodes, and stubby root nematodes.

Nematodes are small (not more than 1/32 inch long), nonsegmented roundworms that are principally soil residents existing either as saprophytes or plant parasites. Life cycles of plant-parasitic nematodes are quite simple. Eggs are laid by females and hatch into larvae. The larvae develop through 2 to 4 stages that terminate in matured adults. Most plant-parasitic nematodes complete their life cycles in 3 to 4 weeks. In general, they enter corn roots at any stage of development. Some nematodes spend all of their life cycle in a plant; some feed only on the plant's exterior. Roots generally are the primary part that nematodes attack. Their feeding decreases root efficiency and may reduce plant growth and cause chlorosis and poor yields.

In 1978-1979 we began testing various nematicides at various locations in western Kansas to de-

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termine how nematicides affect corn yields. Seven were tested at various rates in Cheyenne, Finney, Grant, Gray, Scott, and Stevens counties (Table 1).

Most of the nematicides tested reduced nematode numbers (Table 1) but did not increase corn yields (an average of only 0.3 bushel an acre increase for two years).

The two-year study led us to conclude that: 1) corn in western Kansas has a fairly high population of nematodes; 2) nematicides effectively reduce nematode populations; but 3) controlling nematodes in western Kansas does not seem to influence corn yields.

Our conclusions do not mean that nematodes cannot be a problem in other parts of Kansas or in localized areas of western Kansas. In western Kansas it appears that it is not economically feasible to treat each cornfield regularly for nematodes. However, the chemicals are available if a localized area calls for nematode control.

Growers should contact county Extension agents to determine when, or if, nematode control is feasible.

Table 1. Corn yield responses to seven nematicides in western Kansas, 1978 and 1979.

Nematicide	Affect on	
	nematode numbers	Corn yield
	%	(bu/a)
None (control)	--	135.0
Counter 15G	-41	135.5
Dyfonate 20G	+10	135.8
Furadan 10G	-64	140.3
Mocap 10G	-40	137.9
Mocap 15G	-22	130.6
Nem-A-Tak 15G	+59	130.8
Temik 15G	-65	137.6
Vydate 10G	-75	134.5
Average	-30	135.3



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