SURVIVAL OF THE SUGARBEET CYST NEMATODE in the Alimentary Canal of Cattle

The sugarbeet cyst nematode can survive in the alimentary canal of cattle. Manure from cattle fed on cyst nematode infected plant material disseminates this pest.

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	Dark cysts *with eggs* in potted soil[1]	White cysts on roots of seedlings
Beet roots not fed to cattle	45	16
Steer BA	2	3
Steer 205	1	2
Steer 718	10	12
Steer 744	1	0
Steer N.T.	2	1

Roots fed to cattle from 6/11/75 through 6/20/75. Manure collected: 6/20/75. Seedlings planted to steamed sand/manure: 7/7/75. Soil and roots examined on 9/3/75.

The sugarbeet cyst nematode, *Heterodera schachtii*, is common in the Imperial Valley. About 50,000 acres of agricultural land have been found to be infested with this pest.

After harvest many sugarbeet roots and plant residues remain in the field. It is a common practice in the valley to have cattle graze in the harvested sugarbeet fields for several days. The cattle are then transferred to another harvested sugarbeet field for further grazing.

The cyst nematode can be disseminated from field to field by equipment, cultural implements, irrigation water, and all means which transfer soil from one place to another. Grazing cattle, walking from one field to another, can probably disseminate the cyst nematode. The survival, however, of the cyst nematode in the alimentary canal and its dissemination through cattle manure was not suspected, especially in the desert environment where the plant residues remain exposed for long periods to very high summer temperatures (up to 150°F).

Sugarbeet roots remaining in a field with high nematode infestation were collected. Soil samples taken just prior to harvesting had an average of 10,280 viable eggs per 100 grams of dried soil. The roots were sectioned into small pieces and fed along with a conventional milled ration to six yearling steers for ten consecutive days. At the end of the tenth day, feces from each animal were collected. A sample of roots fed to the animals was also taken the same time the feces were collected. The "chopped" roots were kept in metallic bins exposed to the sun for the duration of the experiment. About 670 pounds of roots were consumed by the six cattle, or about eleven pounds of roots per animal daily.

The collected manure was mixed with steamed blow sand and planted to sugarbeet seedlings in the greenhouse on July 7, 1975. The plants were harvested on September 3, 1975 and both roots and soil were examined for cysts and white females (see table).

The table shows that eggs in cysts passing through the digestive systems of cattle remain viable. This is evidenced by the white females (new generation) obtained from the roots of the sugarbeet seedlings.

The cysts which passed through the digestive tract of the cattle and recovered from the soil manure mixture were darker than those recovered directly from the beet roots and mixed with soil.

Material eaten by cattle starts passing in the manure about three days after feeding. Most eaten material is excreted within about seven days of feeding.

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