

Corn Cyst Nematode, *Heterodera zae*, in the United States

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ABSTRACT

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The corn cyst nematode (*Heterodera zae*), previously known only from India, Egypt, and Pakistan, has been detected for the first time in the United States in Kent County, MD. A survey has been initiated, and field research for resistance in corn, control with nematicides, and host range tests are planned.

During January 1981 five soil samples from fields unidentified by crop were submitted from Kent County, MD, as part of a survey for phytoparasitic nematodes. The mixture of nematodes isolated from the samples contained many relatively short cyst nematode juveniles. Michael Goff, Maryland Department of Agriculture, contacted the farmer from whose farm the soil samples had been taken by a fertilizer distributor. The four samples containing cyst nematode juveniles came from fields totalling about 150 acres that had been under continuous corn cropping for several years, and the fifth sample, which lacked cyst nematode juveniles, came from an alfalfa field.

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Three of the four corn fields were subsequently resampled; two soil samples were taken from different parts of each field from the rhizospheres of decaying corn plants on 20 February 1981.

The six samples (250-ml aliquots) each contained 100–200 white to light tan cysts, about half of which were full of juveniles and eggs. The morphological characteristics of the cysts and juveniles did not fit those of any species for which descriptions were available at the University of Maryland. Cysts were subsequently compared at Beltsville with preserved material of *Heterodera zae* from India. It was determined that this unidentified nematode was also *H. zae*, which had been reported only from India (1–3) and Egypt (B. A. Oteifa, *unpublished*) and more recently was identified by A. M. Golden from soil samples collected in various areas of Pakistan.

Various cultivars of corn were reported as good hosts for this nematode in India, and wheat, oat, and barley were reported as poor hosts (3). In Egypt, in contrast, all cultivars of *Zea mays* tested were good hosts, as were the four cultivars of milo,

the one sorghum cultivar, all wheat cultivars tested, and certain barley cultivars (B. A. Oteifa, *unpublished*). Preliminary tests for host status of the Maryland population indicate that field corn, sweet corn, and barley are hosts, but wheat, oats, rye, and buckwheat are not.

The infestation of corn cyst nematode in Kent County, MD, is in a very fine deep silty loam soil. According to the farmer, yields were down somewhat for the past 2 yr but had been good for many years earlier.

The major crop in Kent County is field corn, which last year accounted for about 65,000 acres. A survey of corn fields, field tests to measure pathogenicity and to determine if resistance exists, and tests to evaluate nematicides for control are planned. Host range studies are in progress.

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