Corn cyst nematode is Md. ag mystery

COLLEGE PARK, Md. — After three years of study, plant pathologists at the University of Maryland in College Park admit there are still many unanswered questions about corn cyst nematode, a worm-like microscopic parasite known to scientists as Heterodera zeae.

And they have little comparative data from their peers anywhere in the world on which to test their assumptions. The reason is that the corn cyst nematode is now known to exist in the Western Hemisphere, except in four Maryland counties surrounding the upper reaches of the Chesapeake Bay.

The corn cyst nematode was first identified in March, 1981 in soil samples taken from a Kent county farm on Maryland's upper Eastern Shore. Assisting with identification was A. Morgan Golden, a nematologist with the U.S. Department of Agriculture's Agricultural Research Center at nearby Beltsville, Md.

Elsewhere in the world, the soil pest has been known to plant pathologists during the past 14 years in places like India, Pakistan and Egypt. But little scientific data exists from these locations on which to base solid conclusions concerning control measures and crop damage.

So far, the Maryland findings have been limited to fairly heavy soils on farms where good fertility programs were used. And they have shown no conclusive evidence that the corn cyst nematode has reduced corn yields — even in fields which were heavily infested.

This contrasts with findings concerning a similar pest, the soybean cyst nematode, which has crept into Maryland during the past decade — starting on the lower Eastern Shore.

In sandy soils typical of the lower Eastern Shore, the soybean cyst nematode has been shown to reduce soybean yields extensively in some fields.

Plant breeders have now tested three public varieties of soybeans which show considerable resistance to the soybean cyst nematode. And there are agrichemicals which can be applied to limit the amount of nematode damage to other soybean varieties.

Most of these nematicides also can be used to control root-knot, lesion and other nematodes in corn. But they do not appear to be effective against the corn cyst nematode. And it should be noted that chemical control measures for nematodes of any kind are fairly costly.

Crop rotation is fairly effective in controlling soybean nematodes — particularly the soybean cyst nematode. But there is a question about whether rotation has value in reducing nematode populations in corn.

Further information along this line is available in two newly revised fact sheets, available free from offices of the University of Maryland's Cooperative Extension Service in every Maryland county. One fact sheet is titled "Nematode Control Recommendations for Soybeans"; the other is titled "Nematode Control Recommendations for Corn." Both mimeograph sheets are dated April 1984.

Authors are James G. Kantzes, Extension plant pathologist; Lorin R. Krusberg, professor of botany, and Sandra Sardanelli, agricultural technician. William J. Kenworthy, associate professor of agronomy, also is a co-author for the soybean fact sheet.

Ms. Sardanelli, manager of the botany department's nematode assay laboratory at the University of Maryland in College Park, advises farmers not to panic about nematodes. But they should keep an eye out during the growing season for possible signs of nematode damage, such as localized patches of stunted crop growth in a field.

"When such telltale signs exist, call your county Extension agricultural agent. If nematode damage looks like a possibility, the agent can supply printed instructions for taking nematode-assay soil samples. Your agent also has a printed form which must accompany the sample to the nematode assay laboratory at College Park."

Sardanelli explained that the nematode assay is a free service provided by the University of Maryland. But the procedure is tedious, and it requires considerable time for each sample.

"Our laboratory is not in a position to cope with an inundation of nematode-assay samples," she commented. "We are not equipped with sophisticated equipment for large-volume capacity."

BY DICK ANGLESTEIN

CHESTERTOWN, MD. -- Maryland farmers learned a little more about the Corn Cyst Nematode quarantine which was levied by the USDA on portions of Harford, Cecil, Kent and Queen Anne counties on May 1.

A quarantine meeting was held in Kent County on Wednesday and the quarantine was described as a positive step to assure Pennsylvania and other surrounding areas that officials are aware of the problem and protective measures are being taken until it can be determined if the corn cyst nematode is a bonafide pest or not, according to John E. Hall, Extension agent.

USDA officials and Lorin R. Krusberg, professor of botany at the Universioty of Maryland, plan to travel to India or Egypt to learn more about the nematode. Prior to its discoverv on Maryland's Upper Eastern Shore in 1981, it had only been known in these foreign countries.

Various quarantine regulations are being imposed by the USDA and Maryland Dept. of Agriculture. Anyone moving into and outside the quarantine zone, such as custom operators, must complete documentation with the MDA that they are taking stringent precautions such as thorough cleaning of machinery.

Items such as shrubbery with earth balls must be subject to tests at the sites of their plantings and then be properly stamped to permit movement of the items.

Bert Hawkins, administrator of the USDA's Animal and Plant Health Inspection Service, said that any new pest such as this must be viewed with great concern.

He said the nematode can be spread through the movement of infested soil or equipment carrying the soil.

Regulated articles include:

–Soil, compost, sand, gravel and similar materials, except for soil samples submitted for testing, separately or clinging to equipment.

–Plants with soil on the roots – except house plants grown in a residence and not for sale.

–Grass sod.

–Used mechanized soil tillage or harvesting equipment.

–Used mechanized soil-moving equipment.

--And, any other articles determined to present a risk of spreading the pest.

These articles may not be moved out of the quarantine area unless they are accompanied by a certicicate issed by a state or federal inspector stating that the article is free of corn cyst nematode or unlikely to cause spread.