Plant nematodes spell bad news for crops

NEWARK, Del. - Most people have probably never seen one. They may never even have heard of them. But nematodes are a very real cause of concern for Delaware farmers and gardeners. In fact, a survey last Fall by the Universities of Delaware and Maryland shows a high percentage of this pest on Delmarva cropland.

Nematodes are common round worms that inhabit many environments. Neither insect nor earthworm, they may be parasites of man, causing trichinosis, elephantiasus, hookworms, and pinworms. Some, such as dog heart worms, are parasites of animals. The kind that University of Delaware Extension plant pathologist Bob Mulrooney worries about are plant parasitic nematodes.

These microscopic little creatures live in the soil, where they feed on plant roots. They interfere with the root system's normal uptake of water and nutrients, and the result is sick or unhealthy plants. Crops infested with nematodes don't grow well and produce low yields of poor quality.

Besides their direct destructive effect on plants, nematodes also serve as vectors for plant viruses and predispose plants to diseases caused by fungi and bacteria. The minute organisms are present in most soil types. But they cause the most trouble in sandy soils such as those which abound in the lower part of Delaware.

Diagnosis of nematode problems can be difficult for two reasons, explains Mulrooney. First, you can't see these little creatures without a microscope. And second, the symptoms they produce resemble those produced by other factors, such as nutrient deficiencies, drought, bacteria, fungi or viruses. Even herbicide injury can sometimes be confused with nematode damage. All these other causes must be ruled out, in identifying a case of nematode infestation.

Diagnosis of most nematode problems begins with observation of symptoms in the field. These symptoms fall into three categories. First, death and degeneration of plant parts—usually the roots. This results in yellowing and wilting of the plant, as well as lesions on the roots. The second category includes formation of root galls and hairy roots caused by overdevelopment of organs, tissue or cells. This is especially true with the root knot nematode, which infects soybeans and other beans, as well as cucurbit crops, in Delaware's sandier soils.

The third sign of nematode infestation is lack of growth caused by stunted, stubby-looking roots. All three types of injury are accompanied by reduced yields.

Once nematodes have beenidentified as the cause of a particular problem, there are several control strategies that will help eliminate this pest, or at least reduce it to levels that don't interfere with production.

The best control, points out the specialist, is prevention. For a commercial vegetable grower, this involves planting only transplants known to be nematode-free. Another way to prevent the problem is to plant nematode-resistant varieties of crops, where these are available.

Another useful control strategy is crop rotation. By not planting the same crop in the same area year after year, one can reduce nematode populations to a level which does not cause economic damage.

Where the above control measures are inadequate or inappropriate for some reason, one may also have to use chemical controls A number of nematicides are available for this purpose.

"We are just beginning to understand the extent of the nematode population in Delaware soils," says Mulrooney. The plant pathologist has identified the problem in crop production fields as well as home gardens, in heavy soils as well as the lighter, sandy ones. Because of this, he feels both farmers and home gardeners need to be aware of the possibility for nematode damage to the crops they grow. Awareness of the problem is the first step toward developing effective control measures for this unseen pest which eats away at yields and profits on Delaware land.

Growth predicted in sheep industry

DENVER, Colo. - 1979 is the Chinese Year of the Sheep on the Oriental Fortune Calendar and, according to a top official of the Denver-based American Sheep Producers Council, that omen may signal the long-awaited production turn-around for the nation's sheep industry.

Richard D. Biglin, executive director of ASPC, predicted that 1979 is going to mark the "real milienium" in the sheep industry - the make-it-or-break-it type of effort which will see the industry grow and prosper.

Biglin's remarks, summed-up in a year-end report to the Council, called for a concerted effort to increase sheep production in order to preserve present markets for lamb and wool against the increasing threats of imports.

Since the end of World War II, sheep numbers in the United States have declined from a high of 52 million to a 1977 low of 12.4 million head. Meanwhile, the domestic demand for both American lamb meat and wool fiber exceeds available supplies. With the American sheep industry supplying only some 60 per cent (estimated) of the current domestic demand for both products, imports of lamb and raw wool are causing concern among many producers.

Biglin said other countries, notably Australia and New Zealand, see the potential of the U.S. market and are increasing their exports to major American markets. "Our markets will suffer unless we restructure the industry to grow and sustain the markets we have," he added.

It is expected that the sheep industry's Blueprint for Expansion program, launched in 1975, will show signs of halting the decline in sheep numbers when the latest government census figures are released in January. Originally, the Blueprint program was planned to stop the decline by 1980, then promote gradual growth to double sheep production by 1985.