Nematodes are attacked by a variety of organisms including protozoa, fungi, and other nematodes. There are indications that some bacteria may cause reductions in nematode populations and, although no virus diseases of nematodes are known at present, some conceivably exist.

**Fungi**

Many species of fungi—mainly hyphomycetous Moniliales—which capture nematodes in unusual ways are widely distributed in California, both in agricultural soils and in virgin areas. They enmesh the nematodes in a mycelium of interwoven threadlike filaments, either by sticky knobs or by the general stickiness of the individual threads—hyphae—or through snares or loops which, when triggered as a nematode passes through them, hold and constrict the prey very tightly. In all cases, the cuticle of the nematode is penetrated by an outgrowth of the fungus, which ramifies through the body of the captured prey and absorbs its contents. Such fungi can be grown on artificial media and, under laboratory conditions at least, are capable of destroying large numbers of nematodes. Trapping fungi evidently vary in their ability to reduce nematode populations in the soil. Their effectiveness has not yet been adequately investigated. Research workers in Hawaii, about twenty years ago, demonstrated that one of the five species of nematode-trapping fungi used in an experiment was able to reduce nematode populations in the soil. Such materials may favor the development of fungi and other organisms that attack nematodes. Trials with mulches of olive pomace, pine shavings, or shredded fir bark in citrus groves, where one to several species of nematode-capturing fungi occurred naturally, have failed to control populations of the citrus nematode. Whether similar practices have any practical value with other crops remains to be determined.

Predaceous and parasitic fungi are obviously beneficial members of the soil flora, and should be considered in shaping general agricultural practices. An attempt is being made to determine whether efficient and practical methods for utilizing such fungi can be developed. Much remains to be learned about basic soil biology. However, where these organisms can be effectively incorporated into soils or their activity augmented, their use as control agents may promise to be one with long-lasting effects.

**Toxic Plants**

Another phase of biological control of plant parasitic nematodes was recently discovered in the Netherlands, where certain plants were found to possess nematocidal substances in their roots. Species of *Tagetes*, the common African marigolds, can reduce populations of root-lesion nematodes—*Pratylenchhus spp.*—in the soil, but not all plant parasitic nematodes are affected by the same plants. Trials now under way in some southern California rose nurseries may indicate whether marigolds can be used to reduce root-lesion nematode populations in infested soil. Other plants may exist which possess similar properties and are effective on a wider range of nematode pests.

**Eradication Unlikely**

The utilization of natural enemies of nematodes for their control has received sporadic attention during the past 20–30 years, but much remains to be learned about this subject. Complete eradication of a plant parasitic nematode species by its natural enemies will be unlikely. However, contrived biological control holds out a possibility of keeping nematode pests in check to a point where their attacks on crops are economically unnoticed.

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