
A New Nematode In Turf- grass

By DR. L. R. KRUSBERG

Botany Department
University of Maryland, College Park

IN 1959, A NEMATODE resembling the root-knot nematodes, *Meloidogyne* species, was encountered several times in Florida attacking roots of st. augustinegrass. Only slight swellings of the grass roots occurred where the nematodes were attached. The parasites were usually completely embedded within root tissues although they were sometimes found with the body completely outside the root with only the neck and head penetrating the root. Large populations of this nematode in grass roots and in surrounding soil were associated with circu-

lar or irregularly shaped patches of dead and dying grass.

Detailed examination of these nematodes indicated that while they were closely related, they were not identical with root-knot nematodes. The adult female nematodes are white and less than 4/100 of an inch in diameter, or considerably smaller than the head of a pin. Similar to root-knot, the females extrude many eggs in a gelatinous mass from the posterior end of the body to the outside of the plant root. The nematode has been given the scientific name *Hypsoperine graminis*.

A nematode identified as being a root-knot species was encountered several years ago on zoysiagrass and more recently on bermudagrass in Maryland. Recent comparisons of this nematode, however, with the one from st. augustinegrass in Florida indicate that they are identical or closely related. The new pathogen has been detected in several zoysia lawns in the Washington, D. C. suburbs in nearby Maryland during the past year. It now appears that this nematode is present in several southeastern states of the United States and California. There is now considerable concern that the nematode may become an important pathogen of certain lawn grasses.

Limited host range investigations indicate that the nematode

can reproduce on several bermuda and zoysia grasses, Pensacola bahiagrass, st. augustinegrass, and crabgrass. Certain bermuda and zoysia grass strains appear to be resistant. No dicotyledonous plants tested or corn supported the parasite. Additional host range tests are needed to fully determine its spectrum of host plants. Also, host ranges of populations from various parts of the country need to be compared to determine if physiological races exist; this would be important from the standpoint of control through developing or selecting plant varieties resistant to this nematode.

One Nematicide Promising

Only two chemical nematicides have been tested in attempts to control the nematode on established turf. 1,2-Dibromo-3-chloropropane failed to control the pathogen on st. augustinegrass in tests in Florida and on zoysiagrass in tests in Maryland. In limited tests in Maryland, an experimental organic phosphate nematicide (Bayer 25141) showed very good promise of giving adequate control from one application per growing season. The nematicide is not yet available commercially.

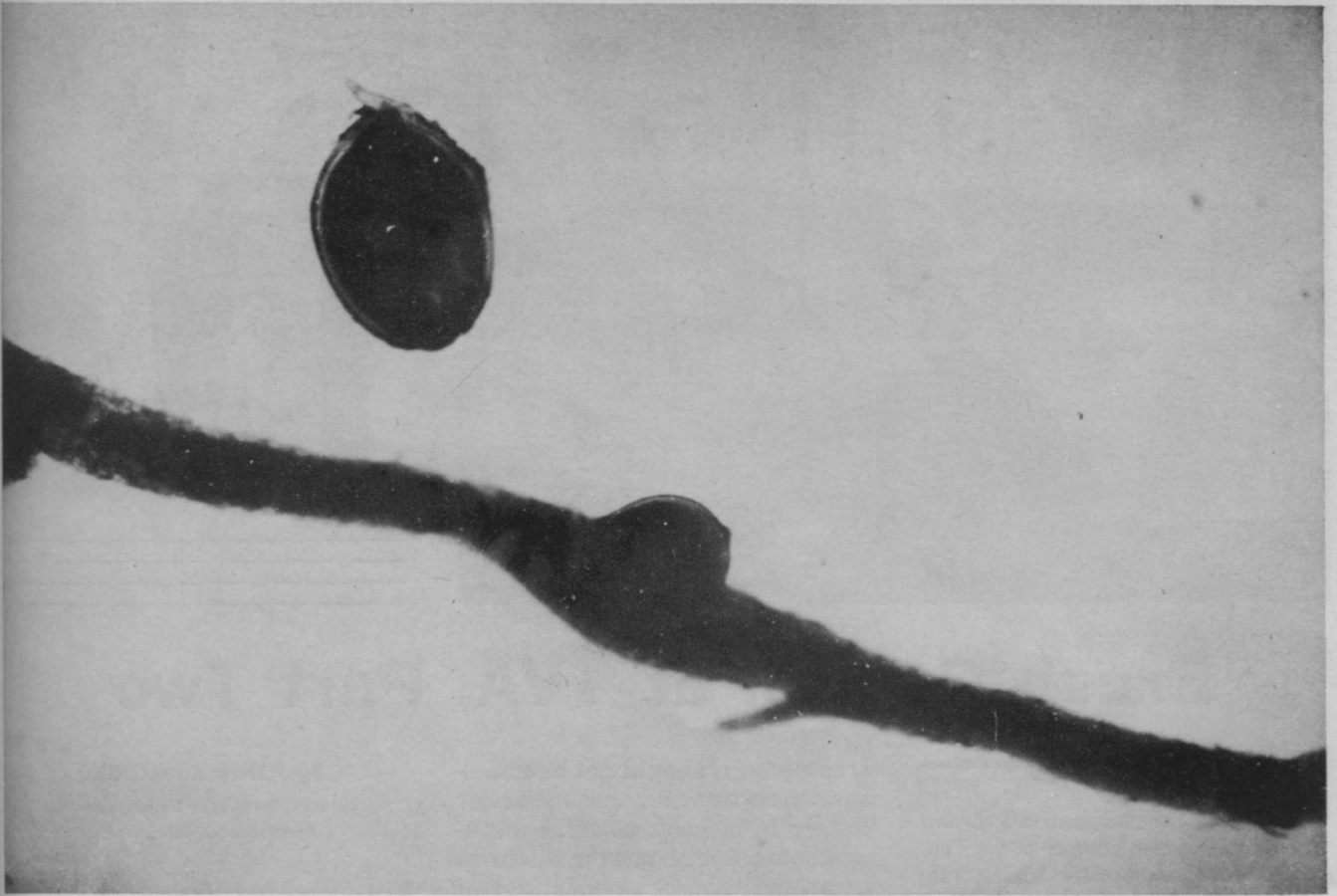
Knowledge of the biology and distribution of this nematode are still quite meager. Despite the fact that the nematode appears to be a pathogen of potential importance on certain turfgrasses, there are already indications that feasible and adequate control methods will soon become available.

References

- Bell, A. A. and L. R. Krusberg. 1964. Occurrence and control of a nematode of the genus *Hypsoperine* on zoysia and bermuda grasses in Maryland. *Plant Dis. Repr.* 48:721-772.
- Sledge, E. B. 1962. Preliminary report on a *Meloidogyne* sp. parasite of grass in Florida. *Plant Dis. Repr.* 46:52-54.
- Sledge, E. B. and A. M. Golden. 1964. *Hypsoperine graminis* (Nematoda: Heteroderidae), a new genus and species of plant-parasitic nematode. *Proc. Helminthol. Soc. Wash., D. C.* 31:83-88.
- van Weerdt, L. G., W. Birchfield and R. P. Esser. 1960. Observations on some subtropical plant-parasitic nematodes in Florida. *Proc. Soil and Crop Sci. Soc. Florida.* 19:443-451.



Patches of dead bermudagrass caused by *H. graminis* in experimental fertilizer trial plots. Photograph courtesy of C. W. Laughlin.



Less than $4/100$ inch in diameter in actual size, the nematode *H. graminis* is pictured here, greatly magnified, as a female (top) and female attached to zoysiagrass root.

Patch of dead bermudagrass below was caused by *H. graminis*. Areas like this, containing a few live plants, are characteristic of nematode damage to turf. Photo by C. W. Laughlin.

