

# RESEARCH NOTES

## Vertical Distribution of *Hoplolaimus galeatus* and *Oligochaetes* in Greenhouse Colonies<sup>1</sup>

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Greenhouse pots containing stock colonies of *Hoplolaimus galeatus* (Cobb) Thorne on bermudagrass (*Cynodon dactylon* (L.) Pers. X *C. transvaalensis* Burt-Davy) become infested with high numbers of a small oligochaete. These organisms are especially troublesome when nematodes are extracted by centrifugal-fotation since the oligochaetes are extracted also.

We observed repeatedly that the oligochaetes were most numerous near the soil surface. To determine the validity of our observations, we conducted an experiment with 15-cm diam clay pots and 42 x 28 x 18-cm redwood flats filled with Arredondo fine sand previously fumigated with 3 kg/m<sup>3</sup> of methyl bromide and aerated. The soil was sprigged with bermudagrass. Two-hundred-fifty cm<sup>3</sup> of soil heavily infested with *H. galeatus* and oligochaetes (actual numbers not determined) were mixed with the soil in each experimental container. Soil in the pots was 15 cm deep, and 9 cm deep in the flats. Each

treatment was replicated 4 times. Pots and flats were arranged randomly on a greenhouse bench.

After six months, the soil in the pots was removed and cut into layers of 0-3, 3-6, 6-9, 9-12, and 12-15 cm. From each flat, four cores of soil 6.4 cm in diam were taken and each core cut into 0-3, 3-6, and 6-9 cm layers. The layers at a given depth were composited. Then *H. galeatus* and oligochaetes were removed from 300 cm<sup>3</sup> of soil from each layer by a centrifugal-fotation method (1). The roots from each layer were removed and weighed fresh, but nematodes were not extracted from them.

Most oligochaetes were in the top 3 cm of soil in pots and flats (Table 1). Most *H. galeatus* occurred below 3 cm in pots, but about 1/3 of the total occurred in the top 3 cm in flats where soil was only 9 cm deep. Pots contained a greater number of *H. galeatus*/cm<sup>3</sup> of soil (7.9/cm<sup>3</sup>) than did flats (4.6/cm<sup>3</sup>), but the flats contained 6 times more soil and hence more nematodes (48,700 avg.) than did pots (13,100 avg.).

When isolating nematodes from stock colonies, we now eliminate most of the oligochaetes by discarding the top 3-4 cm of soil; however, we use containers greater than 9 cm in soil depth to avoid discarding a high percentage of the *H. galeatus*. We

Received for publication 2 January 1976.

<sup>1</sup>Journal Series Paper No. 8057 of the Florida Agricultural Experiment Stations.

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TABLE 1. Vertical distribution of oligochaetes and *Hoplolaimus galeatus* in greenhouse soil planted with bermudagrass.

Soil depth (cm)	No./100 cm <sup>3</sup> soil*				Root wt. (gm)	
	Pot		Flat		Pot	Flat
	Oligochaetes	<i>Hoplolaimus galeatus</i>	Oligochaetes	<i>Hoplolaimus galeatus</i>		
0-3	178	232	202	470	29.8	9.1
3-6	37	852	8	652	15.6	3.3
6-9	13	972	17	448	12.8	4.2
9-12	18	1,078			6.8	
12-15	30	1,247			24.3	
LSD ( <i>P</i> =0.05)	38	210	NS	NS		

\*Six months after inoculation (flats contained only 9 cm of soil).

suspect, on the basis of our observations, that a similar vertical distribution is true for oligochaetes and *Belonolaimus longicaudatus* Rau.

### LITERATURE CITED

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