

## PROJECT 1-4

## NEMATODE TRAPPING FUNGI

### PROBLEM

Several fungi in soil can trap and digest nematodes. Some of these fungi produce sticky hyphae or spores which become attached to, and eventually penetrate passing nematodes; other fungi produce ring traps that inflate on contact, or coiled hyphae in which the nematodes become entangled. Can you grow nematode-trapping fungi and see them catch the nematodes?

### INFORMATION

1. Use cornmeal nematode agar. Read Section G on sterile techniques.
2. Culture nematodes on potato slices (Project 5-4) then wipe a piece of infected potato over a cornmeal agar plate. Allow nematodes to grow for a few days before adding soil.
3. Sprinkle a crumb of soil over the plate and watch the fungal hyphae grow out. They only produce traps in the presence of nematodes. Examine plates once a week. Nematode trapping fungi may appear after one week, or 2-3 months (for the constricting-ring type).
4. Do drawings to record the different types of nematode traps you see.
5. This is a difficult project as you have to be able to grow both the fungi and the nematodes and either can give a lot of problems with undesirable contaminants.

### DESIGN OF EXPERIMENT

1. Are you going to examine one soil type in detail or look at different soil types; sand, compost, mud from gutters, mud squeezed out from mosses, rotting wood?
2. Do you want to do some experiments on why the traps are only produced when there are nematodes present? Will dead nematodes stimulate development; will the liquid in which the nematodes have been growing stimulate development etc.?

### REFERENCES

- Barron, G.L. (1977). *The Nematode Destroying Fungi* (Canadian Biological Publications – Topics in Mycobiology No. 1, Box 214, Guelph, Ontario). (An advanced handbook but illustrations, introduction and methods section would be of interest).
- Goldstein, P. (1970). *Animals and Plants that Trap* (Holliday House : New York) Chp. 13.
- Maio, J.J. (1958). *Predatory Fungi*. *Scientific American*, July 1958 199 67-72 (Offprint No. 1094).