

Lecture 09 - Ecological classification of plant parasitic nematodes

I. Above ground feeders

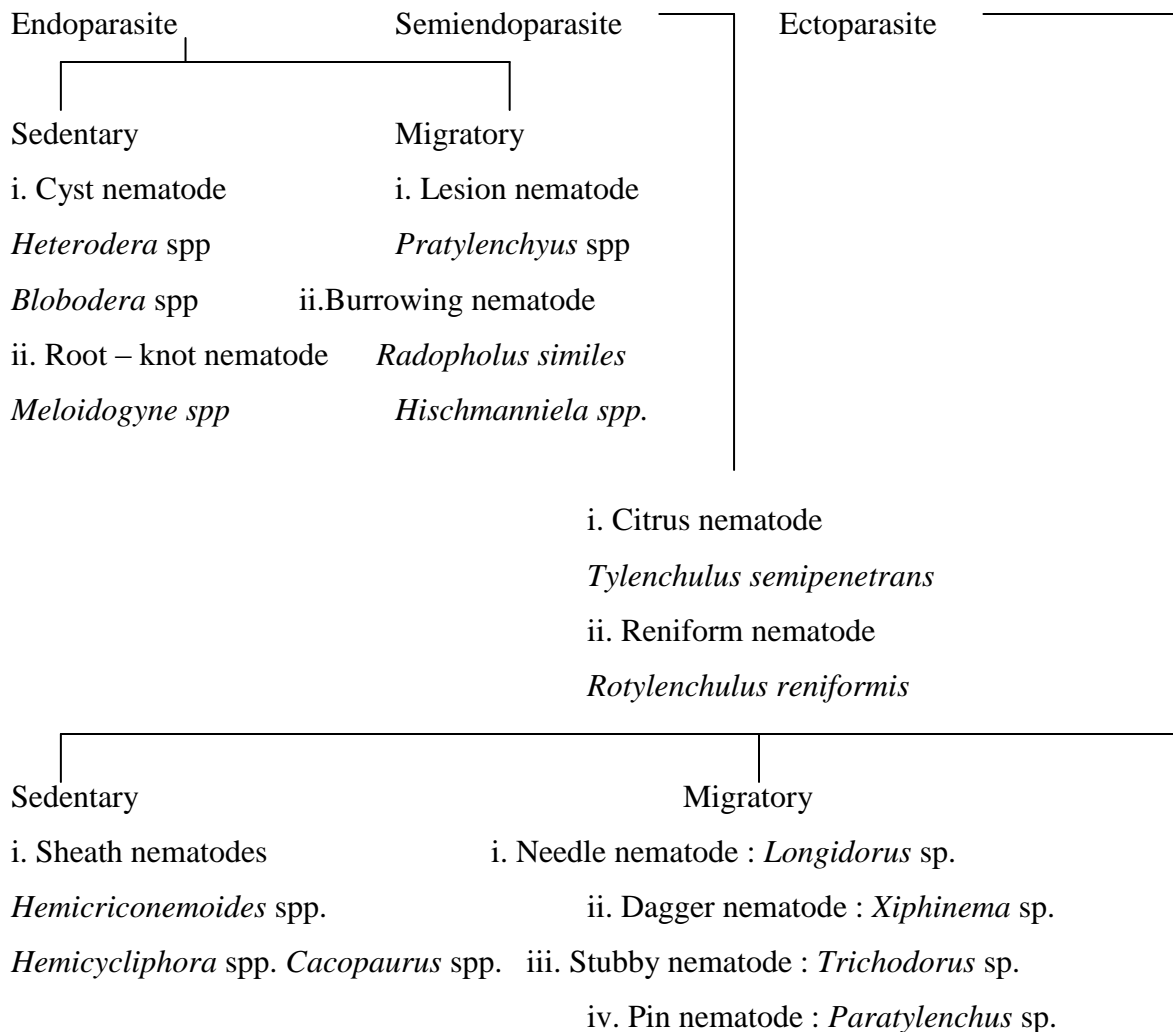
a. Feeding on flower buds, leaves and bulbs.

- i. Seed gall nematode : *Anguina tritici*
- ii. Leaf and bud neamtode : *Aphelenchoides*
- iii. **Stem and bulb nematode : *Ditylenchus***

b. Feeding on tree trunk

- i. Red ring nematode : *Rhadinaphelenchus cocophilus*
- ii. Pine wilt nematode : *Bursaphelenchus xylophilus*

II. Below ground feeders

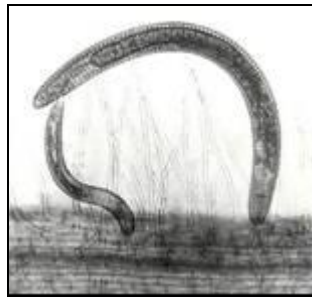


According to feeding habits, the nematodes can be divided into

1. Ectoparasitic nematodes,
2. Semi endoparasitic nematodes and
3. Endoparasitic nematodes

1. Ectoparasitic nematodes : These nematodes live freely in the soil and move closely or on the root surface, feed intermittently on the epidermis and root hairs near the root tip.

A. Migratory ectoparasite : (e.g.) *Criconemoides* spp. *Paratylenchus* spp., and *Trichodorus* sp., etc., These nematodes spend their entire life cycle free in the soil . When the roots are disturbed they detach themselves.



B. Sedentary ectoparasites : (eg.) *Hemicycliphora arenaria* and *Cacopaurus pestis* etc., In this type of parasitism the attachment of nematode to the root system is permanent but for this, it is similar to the previous one.

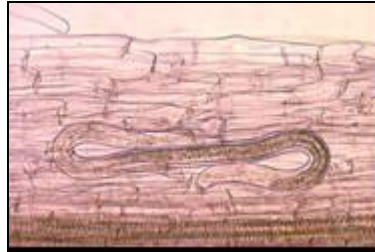
2. Semi – endoparasitic nematodes : (e.g.) *Rotylenchulus reniformis* and *Tylenchulus semipenetrans*. The anterior part of the nematode, head and neck being permanently fixed in the cortex and the posterior part extends free into the soil.



Eg. *Tylenchulus semipenetrans*

3. Endoparasitic nematodes : The entire nematode is found inside the root and the major portion of nematode body found inside the plant tissue.

a. Migratory endoparasite : (eg.) *Hirschmanniella* spp., *Pratylenchus* spp and *Radopholus similes* etc., These nematodes move in the cortical parenchyma of host root. While migrating they feed on cells, multiply and cause necrotic lesions.



Eg. *Pratylenchus*

b. Sedentary endoparasite : (eg.) *Heterodera* spp and *Meloidogyne* spp. The second stage larvae penetrate the root lets and become sedentary through out the life cycle, inside the root cortex.



Eg. *Meloidogyne*