

✓ Nematodes are microscopic, wormlike animals that live saprophytically in water or soil or as plant or animal parasites. They are the most numerous multicellular organism outnumbering even insects in species number.

✓ They inhabit all ecological niches, from the top of the mountain to the bottom of the ocean. Even particles of dust carry nematodes. In terms of global distribution 50 % of nematodes inhabit marine water, 35 % live in fresh water and soil while the remaining 15 % are found in animal tissues including humans. Of the soil/freshwater nematodes, 10 % parasitizes plants.

✓ Plant-parasitic nematodes otherwise called phytophagous or phytonematodes are economically important to Agriculture because they attack virtually all cultivated crops species be it garden crops, ornamentals, arable, tree or plantation crops. They can be destructive to crops globally, causing serious economic losses to the crop.

✓ Most of the important PPN are found in the tropics particularly on the African continent because of the favourable climatic condition.

✓ In addition to crop damage, some species of plant-parasitic nematodes are vectors of important plant viruses. However, some are useful in biological control of insects pests and other pathogens affecting crop production and food supply. They also interact with other pathogens to cause mirage of untold damages and severe losses to crops.

Economic importance of nematodes

Nematodes are considered to be economically important either as crop yield reducing factors, bio-control agents or vectors of other pathogenic organisms.

1. Crop Loss

✓ Phytonematodes are major production constraints of most of the crops grown in the tropics. Many are economically important in various crops in Africa. However, there are variations in the nematodes

species attacking crops from country to country, from region to region and from state to state. Up to 4300 species of nematodes are parasitic on plants.

✓ Through their feeding activities nematode pests kill cells or remove content thereby causing mild to severe damages on the crop and its products resulting in yield and/or harvest losses. In economic terms these losses may be enormous depending on the level of infestation of production fields and the prevailing soil conditions.

✓ Nematodes can feed on roots, buds, flowers, stems, resulting damage of affected part by the invading nematode leading to yield loss. 1 to 100 % loss (average = 10 %) are common culminating to a staggering \$ 80 – 100 m worth of damage to crops globally.

✓ Majority of plant-parasitic nematodes belong to the group known as endoparasites. They include *Meloidogyne* spp.(root-knot nematodes), *Pratylenchus* spp. (root lesion nematodes) and *Heterodera* spp. (the cyst nematodes), which ranks the world's top three plant-parasitic nematodes. Other plant-parasitic nematodes constituting problems to tropical agriculture include; *Globodera* (cyst nematodes), *Ditylenchus* (stem and bulb nematodes), *Tylenchulus* (Citrus nematodes), *Xiphinema* (dagger nematodes), *Radopholus* (burrowing nematodes), *Rotylenchulus* (reniform nematodes), *Helicotylenchus* (spiral nematodes, *Belonolaimus* (sting nematodes, and *Scutellonema* (spiral yam nematode).

✓ In Africa they cause 20-100% losses to cowpea, okra, cotton, tomato, tobacco, banana, maize, sorghum, rice, soybean, and sugarcane. It should be noted that a single plant-parasitic nematode may have wide host range; attacking several cultivated crops and several plant-parasitic can attack a single plant. It is therefore possible to discuss crop losses on the basis of

nematode or crop type. Nematode damage leads to low or high losses, sometimes a total crop failure.

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