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Nematodes: A Threat to Sustainability of Agriculture

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Abstract

One of the most important objectives of the goals of Millennium Development Goals is to eradicate extreme poverty and hunger. Sufficient nourishment for the whole population of the world is one of the challenges of the present era. According to an estimate plant parasitic nematodes are causing much more damage annually compared to insect pests. A crop yield loss due to these tiny unseen pests in various countries is enormous. They caused projected yield loss of 12.3 % (\$157 billion dollars) worldwide. Out of which \$40.3 million is reported from India. Farmers/growers identified insect pests, and other constraints as production problems but overlooked plant parasitic nematodes. Nematode diseases are difficult to control because of their hidden nature and hence, more often overlooked. Plant parasitic nematodes not only cause damage individually but form disease-complexes with other micro-organism and increased the crop loss. Also the symptoms of nematode damage are not specific, resemble with the symptoms of other pathogens and abiotic stresses such as water and mineral deficiency. Future agricultural growth must come from productivity growth to address the persistent problems of poverty, food insecurity and malnutrition. Recommended measures against nematode diseases include use of clean nematode free planting material, resistant varieties, and crop rotations to suppress nematode infestation. Integrated nematode management can be promoted through farmers-nematologists interactions, local production of bio-control agents and strict chemical pesticide regulations. Farmer's/grower's awareness and skills are equally important in minimizing nematode infestation and yield losses, to sustain the agriculture production.

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