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Important nematode problems in pulse crops and their management

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ABSTRACT : As the global efforts towards achieving food and nutritional security demands strengthening of entire food system in each country, it is essential that all the players in the system continuously focus on how system works and what to do to improve it. Pulses play an important role in achieving food and nutritional security in our country. In spite of diverse roles of pulses in improving soil fertility, nutritional security and environmental sustainability, still we need to fill the gap of 2-3 million tones to meet the growing demand. Among various disease causing organisms, plant parasitic nematodes are one of the major biotic constraints to pulses production. The major nematode pests of pulses are root-knot nematodes (*Meloidogyne incognita* and *M. javanica*), reniform nematode (*Rotylenchulus reniformis*), pigeonpea cyst nematode (*Heterodera cajani*) and root lesion nematode (*Pratylenchus thornei*). The variable losses in pulses due to nematodes have been estimated under All India Coordinated Project on Pulses (AICPIP) Pigeonpea depending upon nematode species, crop and population density of nematode. Nematodes have also been found to interact with pathogenic soil borne fungi and increase the severity of the diseases. This kind of problem needs critical observation and employing combination of all available options suitable for that situation. In pulses, several methods have been used to manage the nematodes by integrating different farming practices, by using cultural and physical control methods, encouraging naturally occurring biological control agents, by using the available resistance or tolerance to nematodes etc. Seed treatment can be the other option to minimize the chemical use for nematode management. Various nematode management options can be employed carefully to enhance the productivity of pulses in soil infested with nematodes. The rhizosphere engineering with the aim to maintain healthy plant population for better crop and soil health holds great promise for sustainable crop-nematode management.

Kay Words: Cyst nematode, lesion nematode, nematode management, pulses, root-knot nematode,