

MANAGEMENT OF INSECT PESTS AND DISEASES IN GREENGRAM

Meenu, Sintu Malik, Gulab Singh and Mamta Phogat

Pulses are an important source of nutrition of people around the world. The food and Agriculture organisation of the United Nations has declared 2016 as the international year of pulses to promote the pulse area and to create awareness among people about their nutritional benefits. Pulses are a rich source of proteins, carbohydrates, fibres, vitamins and minerals. Globulins are the major storage proteins in pulse seeds constituting 35-72% of total protein and the remaining fraction mainly consists of albumins. Globulin proteins have higher amount of glutamine aspartic acid, arginine and lysine (Dahl et al., 2012). The insect pests reported on green gram includes jassid, *Empoasca motti* Pruthi; thrips, *Caliothrips indicus* Bagnall; whitefly, *Bemisia tabaci* (Genn.); semilooper, *Plusia orichalcea* (Fab.); cutworm, *Agrotis ipsilon* (Hufn.); galerucid beetle, *Madurasia obscurella* Jacoby; tortricid moth, *Cydia ptychora* Meyr; pod borer, *Maruca testulalis* Geyer; pod borer, *Helicoverpa armigera* (Hubner); stem fly, *Ophiomyia phaseoli* (Tryon.); green bug, *Nezara viridula*, (Linn.); (Kumar et. al., 2004; Nitharwal and Kumawat, 2013). Nitharwal and Kumawat (2013) observed that jassid, *E. motti*; whitefly, *B. tabaci* and thrips, *C. indicus* are the major insect pests of green gram, *Vigna radiata* in the semi-arid region of Rajasthan.

Management of major insect-pests of green gram

Hairy caterpillar- In young stage they skeletonize the leaves in gregarious form. They are of two types – Bihar hairy caterpillar and Red hairy caterpillar. Red hairy caterpillar infests the moong crops from second fortnight of July to August. Bihar hairy caterpillar attack from august to October. For management of these caterpillar's deep plough after harvesting of kharif crops so that pupae can be exposed to birds and other means and can be destroyed. They are attracted

towards light so use light traps for one month after first rainfall. Destroy weeds because weeds are a major host for egg laying of these caterpillars. Destroy egg masses. Spray 250 ml Monocrotophos 36SL or 500 ml Quinalphos 25 EC in 250 litres of water per acre.

Jassid and whitefly- Spray 400 ml Melathion 50 EC or 250 ml Dimethoate 30 EC or 250 ml Oxydemeton methyl 25EC in 250 litres of water per acre. This will also help in management of yellow mosaic.

Management of diseases of green gram

Leaf spots- Angular brown spots which are dusky in centre and red-purple in margins are seen at leaves, stems and pods. Spray blitox-50 or indofil M-45@600-800 gm per acre in 200 litres of water.

Bacterial blight- On lower side of leaves small water filled spots are seen. Spray copper oxychloride @600-800 gm/acre in 200 litres of water.

Root rot- Diseased plants become yellow and shrunked. In severe infestation whole crop is destroyed. Treat the seed with 4 gm thiram per kg seed before sowing. Adopt crop rotation for at least 3 years.

Yellow mosaic- Diseased plants appear yellow and green. In severe infestation whole crop appear yellow. Yield loss is maximized in this condition. Grow resistant variety like MH-421, MH-1142. Whitefly is vector of this disease so manage whitefly population 20-25 days after sowing at 10-15 days interval with 250 ml dimethoate 30 EC or 250 ml oxydemeton methyl 25EC or 400 ml melathion 50EC in 250 litres of water per acre. Rogue out diseased plants. Keep field free from weeds.

Conclusions

Role of pulses in nutrition and maintaining soil fertility is in no doubt. But due to infestation of insect-pests and diseases yield losses are more. By

timely management of pests and growing resistant varieties, integrated nutrient management these losses in green gram can be minimized to a great extent.

References

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