CHICKPEA

Pulses are suitable crops for crop diversification and are a major source of protein. Gram pod borer, pod fly, sterility mosaic virus, phytophthora blight are biotic stresses in chickpea pea and lower the yield significantly. Fusarium wilt, yellow mosaic virus and pod borers also cause around 15-20% losses in chickpea and other pulses.

Key Pests and Disease

Fusarium wilt (*Fusarium oxysporum* f sp. *ciceris*), dry root rot (*Rhizoctonia solani*),
botrytis grey mold (*Botrytis cinerea*), cutworm (*Agrotis ipsilon*) and gram caterpillar
(*Helicoverpa armigera*).

IPM Module

- Use tolerant variety like RSG-44.
- Treat seed with *Rhizobium* culture @ 600 g/ha and also seed treatment with *Trichoderma harzianum/ Trichoderma viride* @ 4 g plus Vitavax @ 2 g/kg seed for the control of collar rot.
- Adopt seed rate of 80 kg/ ha and increase plant to plant distance of 30 cm instead of 22.5 cm usually recommended.
- Apply pre-emergence spray of Alachlor @ 2 kg/ha for the management of weeds.
- Monitor presence of *Helicoverpa* through pheromone trap @ 3-4/ha starting from 30 Days After Sowing.
- Install T-shaped perches for birds @ 25-30 /ha, 20-30 cm above crop height for natural control of insects.
- Spray *Ha*NPV @ 250 ml/ha (2 x 10^9 POB/ml) + 0.01% fabric whitener + 0.5% gur, when the small larvae of American bollworm are seen. After next seven days, spray Neem Seed Kernel Extract @ 5% or 1500 ppm as Azadirachtin solvent base.

Pheromone traps and perches installed in Chickpea field

For more details contact:

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- Repeat the spray of *Ha*NPV @ 250 ml/ha (2 x 10^9 POB/ml) + 0.01% fabric whitener + 0.5% gur after a gap of one week.
- If there are 1-2 *Helicoverpa* in a row of one meter, spray Endosulfan 35 EC @ 750-800 ml/ha.
- Near to grain ripening, ensure removal of bird perches.

PIGEON PEA