

Research Paper :

## Pigeonpea pod borer complex management



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### SUMMARY

The pigeonpea [*Cajanus cajan* (Linn.)] crop is found to be badly affected by pod borer complex and becoming serious problem. The pod borer complex comprises *Helicoverpa armigera*, *Exelastis atomosa* and *Melanagromyza obtusa*, which are responsible to cause direct damage to pods and grains resulting into, not only the grain yield loss but fodder too. This research makes an efforts to find out the suitable management modules, comprising the low cost and eco-safe technologies, to manage this problem at the initiation point to avoid the damage keeping environmental harmony as synthetic pesticides has been found hazardous. The investigated results indicate that the “biointensive module” comprising seed treatment of *Trichoderma* @ 4 g/kg seed followed by spraying of Neem seed extract 5% at bud initiation stage followed by spraying of Spinosad 45 SC @ 0.01 per cent at 15 days after bud initiation stage, found most effective in reducing larval population green pod damage by pod borer complex and recorded highest yield and ICBR; followed by IPM module *i.e.* collection and destruction of last year residues, ploughing of soil in April, selection of resistant variety, increased seed rate by 20 per cent, seed treatment with *Trichoderma* @ 4 g/kg seed, spraying NSE 5 per cent at bud initiation stage, spraying of NSE 5 per cent at 5 % fruiting bodies damage level and spraying of HaNPV 250 LE/ha for *H. armigera* if observed and low cost technology module, consisting of deep ploughing in April, mechanical collection of larvae, use of moderately pest resistant variety *i.e.* Asha, increased seed rate by 20 per cent, seed treatment with *Trichoderma* @ 4 g/kg seeds and spraying of NSE 5 per cent at bud initiation stage and 15 days after bud initiation stage. All these three modules recorded lower larval population of pod borers; reduced green pod damage and higher ICBR and net profit too.

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### Key words :

Biointensive module,  
Insecticide module, IPM,  
Low cost technology,  
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**P**od borer complex is a major problem in pigeonpea production. About 250 species of insects belong to 8 orders and 61 families found to attack on pigeonpea. Among these only few are economically important as pest *viz.*, Tur plume moth, *Exelastis atomosa* (Walsh), *Helicoverpa armigera* (Hubner) and Tur Pod fly, *Melanagromyza obtusa* (mall) collectively referred as “Pod borer complex” (Lal, 1998; Patil *et al.*, 1990). This pod borer complex recorded economical damage at various places ranging 30 to 100 per cent (Adgokar *et al.*, 1993; Sarode and Sarnaik, 1996). As result we have to import pulses from other countries by investing a huge amount, in addition to direct loss to cultivators

Cultivators main thrust has been towards application of synthetic insecticides, but with their indiscriminate and excessive use on

diverse crops, we are facing many diversified and complex problems including development of resistance to insecticides in insects (Rao *et al.*, 2000), resurgence of secondary pests, disturbances to natural ecosystem and beneficial fauna, environmental pollution etc. It has therefore; become necessary to develop a module based alternative pest management technology which is ecofriendly, biosafe; economically viable and socially acceptable to combat the pest menace to reduce import and to increase the cultivator's net profit.

### MATERIALS AND METHODS

A well planned field experiments was conducted on experimental field of Department of Entomology, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola (Maharashtra, India) in *Kharif* 2009, to come out with effective pod

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