

Soloman 300 OD (Betacyfluthrin+Imidacloprid): A Combi-Product for the Management of Insect-Pests of Chilli (*Capsicum annum L.*)

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Abstract : Chilli (*Capsicum annum* L.) an important commercial vegetable crop is ravaged by a number of insect-pests during both vegetative and reproductive phase resulting into significant crop loss. Thrips, *Scirtothrips dorsalis*, mite, *Polyphagotarsonemus latus* and whitefly, *Bemisia tabaci* are the key sap feeding insects, their infestation leads to leaf curl, stunted growth and yield loss. During flowering and fruit formation stage, gall midge fly, *Asphondylia capparidis* (Rubsamaan) infesting flower buds and young fruits and *Helicoverpa armigera* (Hubner) feeding on matured green fruits are the important insect pests causing significant crop loss. The pest is known to infest both flower buds and young fruits resulting into malformation of flower buds and twisting of fruits. In order to manage these insect-pests a combi product consisting of imidacloprid and betacyfluthrin (Soloman 300 OD) was evaluated for its bio-efficacy, phytotoxicity and effect on predator activity. Imidacloprid, a systemic insecticide belonging to neo-nicotinoid group, is effective against insect pests such as aphids, whiteflies (sap feeders) and other insects viz., termites and soil insects. Beta-Cyfluthrin is an insecticide of synthetic pyrethroid group which acts by contact action and ingestion. It acts on the insects' nervous system as sodium channel blocker consequently a disorder of the nervous system occurs leading finally to the death. The field experiments were taken up during 2015 and 2016 at the Main Agricultural Research Station of University of Agricultural Sciences, Dharwad, Karnataka, India. The trials were laid out in a Randomized Block Design (RBD) with three replications using popular land race of Byadagi crop variety. Results indicated that the product at 21.6 + 50.4% gai/ha (240 ml/ha) and 27.9 + 65% gai/ha (310 ml/ha) was found quite effective in controlling thrips (0.00 to 0.66 thrips per six leaves) as against the standard check insecticide recommended for thrips by the University of Agricultural Sciences, Dharwad wherein the density of thrips recorded was significantly higher (1.00 to 2.00 Nos./6 leaves). Similarly, the test insecticide was quite effective against other target insects, whiteflies, fruit borer and gall midge fly as indicated by lower insect population observed in the treatments as compared to standard insecticidal control. The predatory beetle activity was found to be normal in all experimental plots. Highest green fruit yield of 5100-5500 kg/ha was recorded in Soloman 300 OD applied crop at 310 ml/ha rate as compared to 4750 to 5050 kg/ha recorded in check. At present 6-8 sprays of insecticides are recommended for management of these insect-pests on the crop. If combi-products are used in pest management programmes, it is possible to reduce insecticide usages in crop ecosystem.

Keywords : Imidacloprid, Betacyfluthrin, gallmidge fly, thrips, chilli

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