



ABSTRACTS

69th International Symposium on Crop Protection

**May 23, 2017
Ghent
Belgium**

ASSESSMENT OF THE SPECTRUM OF ACTIVITY OF A NEW INSECTICIDE BASED ON *CLITORIA TERNATEA* EXTRACT

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Clitoria ternatea L. (butterfly pea), is a plant species belonging to the Fabaceae family, which was extensively studied for its pharmacologically activities. Besides the medicinal uses, in agriculture it is considered an excellent forage legume, with very good regrowth and yields, and cover crop. Young and tender parts of the plant (shoots, leaves, flowers and pods) are edible and frequently consumed in India. Recent studies also indicate that *C. ternatea* possess insecticidal effects, mainly related to its content in cyclotides and flavonoids. Putative cyclotides have been now identified in the seed, the leaf and the flower. Cyclotides are molecules composed of 28-37 amino acids in a head-to-tail cyclic backbone with three interlocking disulphide cystine bonds (cyclic cystine knot motif) and are mainly produced by plants as defence proteins. Putative mode of action is hypothesised to be similar to the endotoxin of *Bacillus thuringiensis*. Currently the efficacy of *C. ternatea* extracts as insecticide has been characterised mainly against *Helicoverpa punctigera*, however its spectrum of activity can be theoretically larger. The aim of this research was to explore the possible use of *C. ternatea* extracts against a wide range of phytophagous insects. More specifically, a formulated extract of *C. ternatea* was tested under controlled conditions against a leaf miner (*Antispila oinophylla*; Lepidoptera: Heliozelidae), an aphid (*Aphis gossypii*; Hemiptera: Aphididae), whiteflies (*Trialeurodes vaporariorum*; Hemiptera: Aleyrodidae), a fruit fly (*Drosophila suzukii*; (Diptera: Drosophilidae), thrips (*Frankliniella occidentalis*; Thysanoptera: Thripidae), bugs (*Halyomorpha halys*; Hemiptera: Pentatomidae), the grapevine moth (*Lobesia botrana*; Lepidoptera: Tortricidae), and a leafhopper (*Scaphoideus titanus*; Hemiptera: Cicadellidae). The efficacy trials resulted in a good efficacy against thrips and whiteflies, which was also confirmed by field trials. Promising results were obtaining against some other species, however further analysis will be necessary to confirm the efficacy. Based on the results obtained, the formulated *C. ternatea* extract can be considered a new low-risk tool to be used in the integrated pest management of crops.

Key words: bioinsecticide, organic, IPM