TOXICITY OF SOME NEW GENERATION INSECTICIDES AGAINST TWO IMPORTANT NATURAL ENIMIES OF LEPIDOPTERAN CROP PEST

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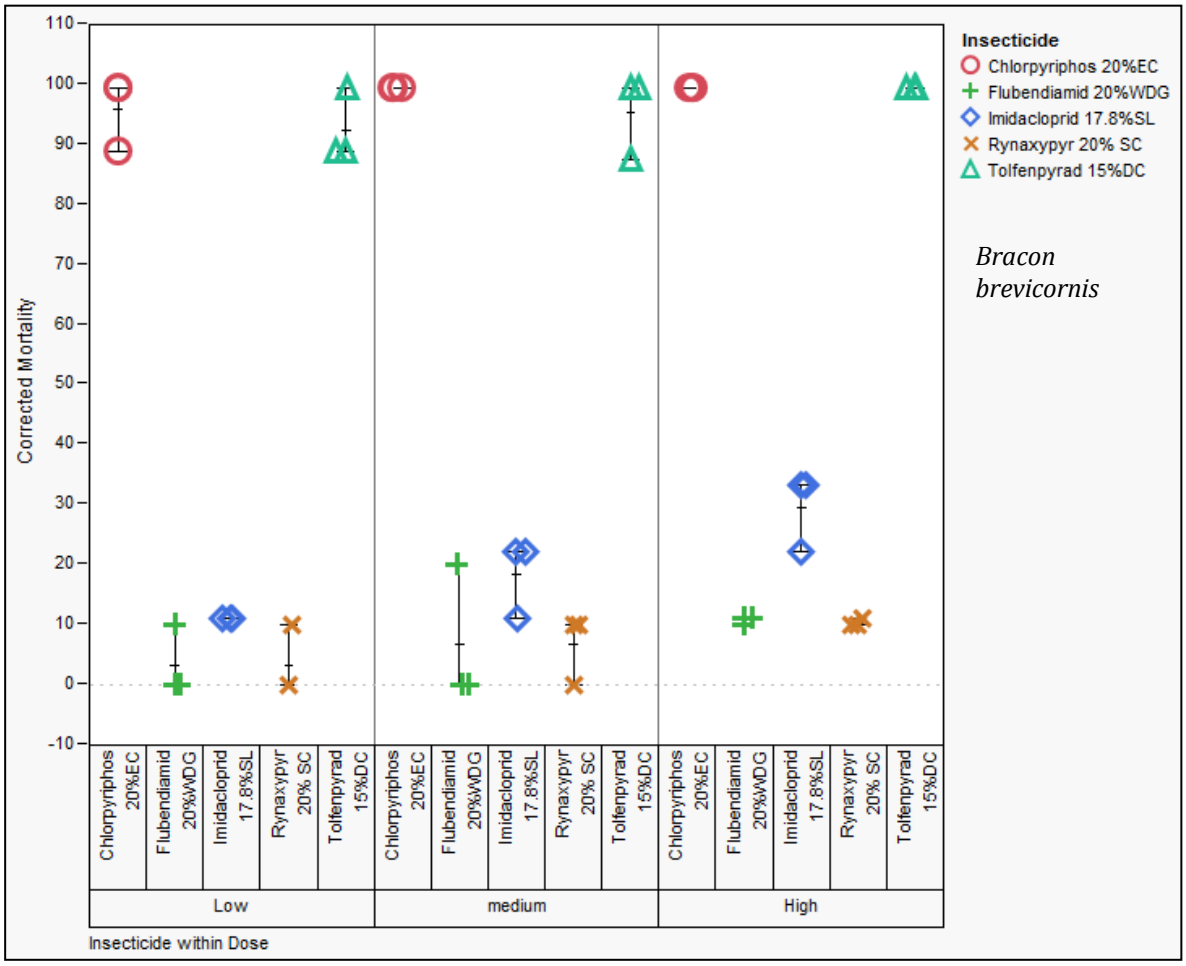
Natural enemies (predators and parasitoids) play an important role in natural and applied biological control of crop pests. Colonization of many of these has provided a spectacular success in the control of many noxious insect pests. *Bracon brevicornis* Wesmael, an ecto-larva parasitoid and *Trichogramma chilonis* Ishii an egg parasitoid, are considered as an important biological control agent of many lepidoteran crop pests. Unfortunately destruction of natural enemies due to application of insecticides which are essential components of modern agriculture has lead to outbreak and resurgence of many pests across the world. Though many recent insecticides are generally claimed to be relatively safer to the natural enemies may cause variable degrees of mortality to them. Hence studying the relative toxicity of these chemicals against natural enemies is of utmost importance.

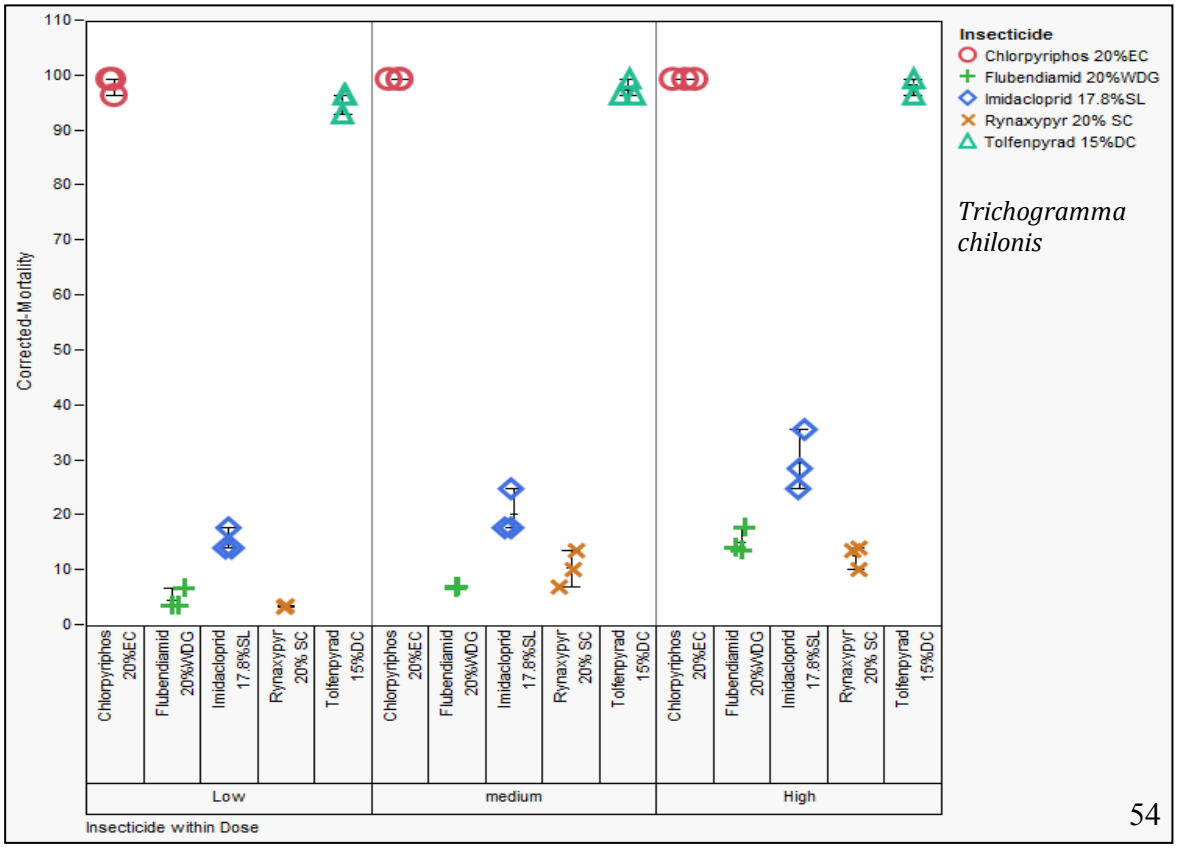
We tested the toxicity of some new molecules namely, tolfenpyrad 15%EC, rynaxypyr 20%SC,flubendiamide 20%WDG, each at three concentration to the adult stage (by leaf disc method) of *B.brevicornis* and to the pupal stage of the egg parasitoid, *T. chilonis* along with chlorpyriphos 20%EC and imidacloprid 17.8%SL.

Rynaxypyr20%SC @ 0.005%-0.01% a.i and flubendiamide20%WDG @ 0.002%-0.008% a.i were safest to the parasitoid causing 3.33%-10.37% and 3.33%-10.74% mortality respectively to *B.brevicornis* and 3.49%-12.81% and 4.68%-15.31% mortality respectively to *T. chilonis*. Imidacloprid 17.8%SL @ 0.003%-0.01% a.i. was also safe to the parasitoid (11.11%-29.63% and 15.47%-29.76% mortality respectively.) Tolfenpyrad 15%EC@ 0.027%- 0.04% a.i.and chlorpyriphos 20%EC @ 0.01%-0.08%a.i. were highly toxic to the parasitoid causing 92.43%-100% and 95.97%-100% mortality to *B.brevicornis* and 95.36%-98.87% and 98.87%-100% mortality to *T. chilonis*.

Some of these tested chemicals (rynaxypyr 20%SC, flubendiamide 20%WDG) have shown exceptional safety to it, indicating that these chemicals at recommended doses can be included in Integrated Pest Management (IPM) programme along *with Bracon brevicornis* and *Trichogramma chilonis.*



Bracon brevicornis



Trichogramma chilonis