

**University of Hohenheim
Institute of Plant Production and Agroecology
In the Tropics and Subtropics
Department of Agroecology
Professor Dr. Martin**

**Control of *Conopomorpha sinensis* Bradley in the
Lychee Orchards of Northern Thailand**

By

Christine Yonushonis

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5. Conclusions

The results of the field experiments suggest that the timing of pesticide application played an important role in the effectiveness of the pesticide application. Pesticides were not applied at the optimal time to cause mortality. Environmental factors such as sunlight and rain may have played a major role in reducing the persistence of many of the pesticides. There were limitations and constraints to the use of many of the pesticides which may have reduced their efficacy. For example, for several of the pesticides the pests must ingest it for it to be effective. As a result of this the larvae is protected when it enters the fruit. Considering the limitations, the neem tree injection system holds great potential for the control of *C. sinensis* since it overcomes the problems which arise because of both timing of pesticide application and environmental constraints. It is possible that there were sub-lethal effects on the pests, however these effects would be difficult to measure. It is also possible that migration or new generations may have occurred resulting in continuous infection of the orchards. The results of the field observations correspond with what is known about the lifecycle of the pest.

The results of the lab experiment showed moderate results for the pesticide effect on pupae trial. It is possible that the pupal covering offers some protection from the pesticide. The results of the pesticide effects on larvae were as expected.

6. Suggestions for further work

Suggestions for further work include conducting more research about the lifecycle and migration patterns of *C. sinensis* in Thailand to determine the optimal time for spraying. It is necessary to continue monitoring of the orchards to determine if there was a reduction in future generations which may be the result of sub-lethal affects of pesticides.

Combinations of different pesticides may produce better results. Bt can be effectively combined with plant phenols or caffeine which increase the toxicity of Bt. (Navon, 2000) Biological means such as entomopathogenic microbes and nematodes, natural enemies of the pests, and/or natural insecticides, in combination with Bt can improve pest control, especially when the efficacy of Bt is suboptimal (Navon, 2000)

Research should be done for wide scale use of tree injection systems which have proven to be effective since they can overcome the problems which arise from timing of application and environmental constraints.