CHASING SIREX IN THE CZECH REPUBLIC

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In South Africa the Sirex woodwasp, *Sirex noctilio* (Hymenoptera; Siricidae), is a serious threat to the pine industry. This is unlike Eurasia and North Africa where siricid wasps in their native habitat are minor pests and of no economic importance. In their native environments Siricids, together with their symbiotic fungi simply act as degraders to eliminate weak and stressed trees in indigenous forest ecosystems.

Sirex noctilio has a number of natural enemies which are of great interest in countries such as South Africa, where they are used as biocontrol agents against the woodwasp. One of these natural enemies is a parasitic nematode, *Deladenus* (*Beddingia*) *siricidicola*, which parasitizes the larvae of the wasp. Up to now, the introduction of the nematode has, however, had limited success in some parts of South Africa. One of the short-comings in trying to address this issue is the lack of genetic diversity of nematode strains available to be tested under variable conditions in South Africa and elsewhere. Collections of new nematode strains are, however, not easy as this requires collecting adult siricid wasps in native environments in Eurasia.

A collaborative project between FABI and the Mendel University of Agriculture and Forestry in Brno, Czech Republic, provided an opportunity to explore the emergence patterns, activity and the presence of parasitic nematodes occurring in woodwasps. The project aimed at testing new methods to collect siricid wasps naturally occurring in European coniferous forests. A further aim was to collect native *Amylostereum* fungal populations to aid in the further understanding of the biology of the *Sirex-Amylostereum* symbiosis.

Panel traps with lures containing dominant pine volatiles (from Aptiv inc.) were tested as a method to catch the wasps. These traps were installed in coniferous forests consisting of Norway Spruce (*Picea abies*) and Scots pine (*Pinus sylvestris)* stands. The traps were placed at optimal sites in and around the forests, particularly in open areas surrounded by seemingly stressed trees. Wasps were also caught by hand at woodlots and sites where harvesting was taking place. All wasps collected were screened for parasitic nematodes and fungal spores were also isolated from the mycangia (fungal glands) of the wasps.

A large number of wasps were caught using the panel traps and artificial lures. *Urocerus gigas*, a close relative of *Sirex*, was the most abundant woodwasp caught and to a lesser extent *Sirex juvencus* and *Sirex noctilio*. This was to be expected, as *Urocerus* spp. are known to commonly attack Spruce trees, which are the most frequently grown conifers in the Czech Republic. *Urocerus* emerged earlier and for longer periods than *Sirex* and was also commonly found in sites of high altitude. *Sirex* was mostly caught in low lying sites around densely planted pine stands.

No nematodes cultures were collected during this study, for that collection will most likely have to be done on a wider scale and more targeted to specific environments. The information and tools provided by this study will make a significant contribution to achieving this goal. These methods will also aid in detecting new introductions or

attacks of Sirex in introduced areas. The fungal cultures together with their correlating wasp specimens collected in this project represent a unique resource that will form a central part of studies aimed at better understanding the biology of this unique fungal/woodwasp association.

Chasing woodwasps in the forests of central Europe can be quite a tiring activity but the knowledge gained and the opportunity to experience a European summer amidst the green mountain slopes, blueberries and wild mushrooms, make the stiff legs and the blisters all worth the pain!

Evaluating traps with a Czech forestry student

Close to one of the field sites at the
Czech Republic/Poland border