The box tree pyralid Cydalima perspectalis: New results of the use of biological control agents and pheromone traps in the field

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The box tree pyralid *Cydalima perspectalis* (Walker 1859) is native to East Asia and has been recorded for the first time in Germany in 2007. The distribution in Europe has advanced rampantly, so most countries of Central and Eastern Europe are already concerned. Therefore, investigations concerning the efficacy of entomopathogenic nematodes (EPN), *Bacillus thuringiensis* (B.t.) and the plant extract formulation NeemAzal-T/S, as well as the monitoring with pheromone traps, were realized in field. In addition to previous investigations on the susceptibility of *C. perspectalis* larvae to EPN, the impact of NeemAzal-T/S was confirmed by using a bioassay system in the laboratory, carried out with dipped leaf discs. The vitality, feeding activity, moulting as well as the weight of the larvae were recorded at concentrations of 0,1; 0,3; 0,5 %. On average, the larvae stopped feeding and died after about 6 – 14 days. In 2012 and 2013, three field trials were conducted on infested box hedges in Seligenstadt (Hesse). In addition to the mortality observed directly in the field, samples (n=20) of treated branches where collected and fed to *C. perspectalis* larvae obtained from our cultures in the laboratory. Directly in field the mortality was quite low. Only *B. thuringiensis* (B.t.), which was used as a positive control, achieved high mortality (75 – 96 %). In contrast, the treatments with EPN (2,5 Mio./ m^2) produced mortalities only ranging from 4 to 16 %, although 55 – 80 % of the larvae fed with treated branches died in the laboratory. The field treatment with NeemAzal-T/S (0,3 %) had to be repeated, because no mortality was recorded. In the laboratory, 30 % of the larvae died only after three weeks incubation. In cooperation with Prof. Dr. Thomas Schmitt, TU Darmstadt, and Pherobank (NL), several GCMS-analyses of adult moths were conducted, so that 11 pheromone variations could be tested by using two trap types (Delta and Vario traps) under field conditions. Two variations captured quite a lot of moths, so they can possibly be used to monitor the flight of *C. perspectalis*, but only in combination with Vario traps. Delta traps proved to be unsuitable.

Use and establishment of predatory mites for sustainable control of two-spotted spider mite (*Tetranychus urticae*) in hop

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The two-spotted spider mite *Tetranychus urticae* is one of the main pests of hops and able to cause a complete loss of yield. For organic farmers no effective chemical treatments are available. Predatory mites are probably the most promising