Novel detected entomopathogenic fungus *Pandora* sp. infects *Cacopsylla* spp. and other phloem-feeding hemipteran insects

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The entomopathogenic fungus *Pandora* sp. (Entomophthorales: Entomophthoraceae) was discovered on psyllids in Denmark in September 2016. Reisolated from pear psyllid cadavers, it was possible to cultivate the fungus on solid media. In pathogenicity tests, it was assessed whether this (yet undescribed) species would be able to infect other insects, with special regard to psyllids (Hemiptera: Psyllidae). In the pathogenicity experiments, insects were inoculated with a "conidia shower". For this purpose, mycelia mats were applied to the lid of small plastic cups, using the typical mechanisms of Entomophthorales, which actively eject their conidia and showering on the insects underneath. A not yet quantified but high dosage of conidia was used. After exposure to the conidia, the mortality as well as postmortal symptoms of fungal infection were assessed over a period of 10 days. *Cacopsylla pyri* L. and *C. pyricola* Foerster, which are indigenous pear psyllids in Germany, were successfully infected. Other psyllids, namely *C. picta* Foerster and *C. pruni* Scopoli that cause great damage in fruit production by transmitting phytoplasma diseases to their respective host plants apple or peach, were also susceptible to this fungus. When inoculated with *Pandora* sp. mortality increased and symptoms of the fungal infection on the cadavers were observed 24 hours after onset of mortality. Other psyllids were also susceptible like *C. peregrina* Foerster feeding on hawthorn (*Crataegus monogyna* L.). Furthermore, other phloem-feeding hemipteran insects such as *Acyrthosiphon pisum* Harris (Hemiptera: Aphididae) vectoring several plant viruses, showed decreased survival probabilities after treatment with this entomopathogenic fungus. Regarding these results, the role of *Pandora* sp. as a potential agent for a biological pest control approach is a part of the BMEL-supported research project "PICTA KILL". An innovative formulation should be developed releasing specific attractant volatiles in order to attract the apple psyllid *C. picta* towards the encapsulated fungus (Attract-and-Kill- strategy). Hence, the capsule could increase the specificity of this control approach and thereby decrease the new infestation of apple trees with apple proliferation disease.