

## The endosymbiont *Wolbachia* in fruit flies of the genus *Rhagoletis*: Horizontal transfer and impact in speciation

Schuler, H.

Institute of Forest Entomology, Department of Forest and Soil Sciences, Boku, University of Natural Resources and Life Sciences, Vienna, Austria

e-mail: hannes.schuler@boku.ac.at

*Wolbachia* is an endosymbiotic bacteria present in up to 65% of all insects. *Wolbachia* infections are described in all major insect orders. This bacterium manipulates the reproduction and causes male-killing, parthenogenesis, feminization and cytoplasmic incompatibility (CI). The most common effect is CI, an incompatibility between sperm and egg caused by crossing of infected males with uninfected females. This incompatibility can lead to a reduction of gene flow in a population and hence lead to reproductive isolation.

The Apple Maggot *R. pomonella* has been the focus of sympatric speciation over more than a century. In the middle of the 19<sup>th</sup> century a population shifted from the native host hawthorn to the newly introduced apple. These populations are ecologically and genetically different. Different *Wolbachia*-infections were found in the two host species and potential impact in speciation will be discussed.

The Eastern Cherry Fruit Fly, *R. cingulata*, infests different *Prunus* species. Native to North America, this species was introduced to Europe in the 1980ies where it coexists with the European Cherry Fruit Fly *Rhagoletis cerasi*. *R. cerasi*, is an established field model species for multiple *Wolbachia* infections and CI. Two strains of *R. cerasi* were detected in *R. cingulata* and a potential horizontal *Wolbachia* transfer will be discussed.