

RESURGENCE OF EUROPEAN FOULBROOD IN SWITZERLAND: A CHANCE TO IMPROVE OUR KNOWLEDGE OF THE BIOGEOGRAPHY AND PATHOGENICITY OF *MELISSOCOCCUS PLUTONIUS*

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In Switzerland, European foulbrood (EFB) is a honeybee disease which should be controlled according to the Swiss Animal Epidemic Regulation. After being under control during more than 30 years, cases have recently been reported with increasing frequency. From 1970 until 1998, 20 to 50 disease cases per year were sanitized by the veterinary authorities. Since 1999 there is a significant increase of the cases, with a peak of almost 1000 apiaries affected in 2010, representing an incidence rate of 5,7 %. In 2016, still 401 new cases were registered.

Little is known on the pathogenesis of EFB and until today only the application of costly and laborious control measurements limits the spread of the disease. A better understanding of the disease would be necessary to develop more effective control strategies.

I will present hypothesis about the causes of this huge increase of EFB-cases in some regions of Switzerland. Especially the variation in the virulence of *M. plutonius*, which impact its pathogenicity will be discussed and we will explore the causes of this variation. With the technic of multilocus sequence typing (MLST) we looked for genetic sub-types of *M. plutonius* in Switzerland and we investigated their geographic dispersal.

I will also present more practical aspects of the EFB diagnosis and control measures, ability of the bacteria to survive on wood or in honey and the disinfection options.

Keywords: European foulbrood; *Melissococcus plutonius*; pathogenicity; virulence; control