

PP-131 [Bee Health]

Evaluation of efficacy of lactic acid bacteria from Honeybee for American foulbrood and Nosemosis

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Honeybee gut microbiome is known to help to protect against harmful pathogens and nourish the host. Furthermore, it has been reported that honeybee probiotic administration has a positive effect on the resistance of honeybee infectious diseases, such as American and European foulbrood and Nosemosis. In this study aimed to isolate and identify lactic acid bacteria (LAB) from honeybee-gut. Seventy-one strains of lactic acid bacteria (LAB) were isolated from *Apis mellifera* and *Apis cerana*, and 6 strains (*L. kullabergensis*, *L. apis*, *L. panisapium*, *L. mellis*, *L. melliventris*, *L. kimbladii*) were finally selected through the measurement of antimicrobial against *P. larvae* and antioxidant activity. In addition, the efficacy of these strains in controlling Nosemosis was evaluated. Based on Real-time PCR, a significant lower level of *Nosema* after 7-day infection. In field application, it was confirmed that these strains decreased *P. larvae* and *Nosema ceranae*. These results indicate that LAB isolated from honeybee-gut possess beneficial properties for honeybee health.