



MINISTRY OF JIHAD-E-AGRICULTURE

Agricultural Research, Education and Extension Organization  
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### **The effect of probiotics in nutrition of honey bees on their gut microflora**

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#### **Abstract**

In the present study, which was conducted in the Animal Science Research Institute of Iran in Karaj, the nutritional effects of two probiotic species isolated from honeybees, including Lactobee probiotic and Enterobee probiotic, were investigated on the honey bee gastrointestinal tract microbial flora. For this purpose, an experiment was conducted in a completely randomized design with four treatments and 10 replications (colonies) on the colonies of the honeybee which had the same age sister queens and were the same in terms of population, queen egg laying, brood rearing, honey and pollen storage. The experimental diet was carried out from first day of April to end of June in 2016. Treatments included syrup without probiotic (P0), syrup containing 100% Lactobee probiotic (P1), syrup containing 100% Enterobee probiotic (P2), syrup containing 50% Lactobee probiotic and 50% Enterobee probiotic (P1P2). The results showed that diets containing probiotic had significantly higher population growth than the control diet and the queen had more egg laying ( $p < 0.05$ ). Also, microbial flora of the gastrointestinal tract of honey bee which was consumed probiotic, containing more LAB than control treatment. Generally, two types of probiotic (Lactobee and Enterobee) did not show any superiority to each other for the traits studied.

**Keywords:** Lactobee, Enterobee, Lactic Acid Bacteria, Honeybee, Honeybee Gastrointestinal Tract