

Summary of the MSc, thesis No 17887., Faculty of Veterinary Medicine, Urmia University.

The academic year: 2023-2024

Author: Amanj Ahmadi

Title: Genomic search of *penibacillus* larvae in bee larvae in apiaries of Sardasht region

Summary:

American foulbrood (AFB) is a potentially fatal bacterial disease of bee larvae in infected colonies caused by *Penibacillus larvae* bacteria. In this study, 100 larval samples were collected from the diseased and dead larvae of the Sardasht apiary during the months of October to January 2023. DNA was extracted from the samples using the extraction kit of Iran Biotechnology Company according to the protocol and then they were tested by PCR method and using specific primers related to *16S rRNA* gene for the presence of American leucosis. The number of positive samples obtained in terms of infection with *P. larvae* using the PCR method was 5 samples (5%). Also, the results of gene blast and phylogeny analysis on the NCBI site showed that the *16S rRNA* gene (accession numbers OR428092, OR426807) had 99 to 100% similarity with the samples in the gene bank. The results of *16S rRNA* gene blast showed that the sequence obtained in this study was similar to sequences (KU807655, CP019717) from Germany and America. The results of this study showed that the PCR method is very specific for the detection of *P. larvae*, so this method can improve the diagnostic methods and replace the traditional culture methods to detect *P. larvae*. Also, the results of phylogeny and gene blast analysis showed that all positive samples were 99-100% similar to the reference in the gene bank.

Keywords: American Luke, Honey Bee, Polymerase Chain Reaction, Sardasht city