**Role of varroa mites to transfer honey bee viruses and their control strategies**

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Deformed wing virus (DWV), Israeli acute paralysis virus, black queen cell virus and Kashmir bee virus were detected in bee and Varroa. Viruses were common in high-mite-populated colonies. Multiplication of DWV increased in bees over time. Entomopathogenic fungi as biocontrol agents of varroa mites were used to investigate the interaction between DWV and fungal-inoculated mite. Level of DWV was higher in brood infested with mites as well as varroa-macerate injected brood, but negative in control brood suggesting that varroa mite could vector and transmit virus in honey bee. Grooming behavior showed some effects on the expression of immune-related genes in bees.