

# Ontogenesis of the parasitic mite *Varroa jacobsoni* on Syrian Honey Bees, *Apis mellifera syriaca*

by Abdul-Majed A. Al-Ghzawi, Shahera T. Zaitoun and Hail Kamel Shannag

**Abstract.** The reproductive behaviour of the mite *Varroa jacobsoni* was investigated during the summer months in *Apis mellifera syriaca* colonies in Irbid, Jordan. Reproductive rates for mites reaching adulthood were estimated by examining the progeny of the female mother mites in worker and drone cells. The proportions of non-reproducing mites in the worker and drone brood were 9.8% and 4.9%, respectively. The reproductive rate was 2.72 for mites in worker cells and 3.35 for mites in drone cells. The percentage of infested brood with adult mite daughters was 43.9 % for worker and 55% for drone broods. The rate for females reaching adulthood from each original female mite was 0.75 for worker and 1.41 for drone brood.

**Kurzfassung.** In Stöcken der Syrischen Honigbiene, *Apis mellifera syriaca*, wurde das Fortpflanzungsverhalten der parasitären Milbe *Varroa jacobsoni* in Irbid, Jordanien, in den Sommermonaten untersucht, wobei die Fortpflanzungsrate der Muttermilbe sowohl in Arbeiter- als auch in Drohnenzellen ermittelt wurde. Der Anteil sich nicht fortpflanzender Milben betrug auf Arbeiterbruten 9,8% und auf Drohnenbruten 4,9%. Die Fortpflanzungsrate der Milben war in Arbeiterzellen 2,72 und in Drohnenzellen 3,35. Der Anteil der mit adulten Tochtermilben befallenen Bruten betrug 43,9% für Arbeiter- und 55% für Drohnen-Bruten. Die Rate der Weibchen, die von den ursprünglichen Weibchen das Adultstadium erreichen, betrug 0,75 für Arbeiter- und 1,41 für Drohnen-Bruten.

**Key words.** Parasitic mites, *Varroa jacobsoni*, Honey Bees, *Apis mellifera syriaca*, reproduction, Jordan, Middle East.

## Introduction

The ectoparasitic mite, *Varroa jacobsoni*, is one of the most destructive and widely distributed honey bee pests. This parasitic mite was confined to the indigenous honey bee *Apis cerana* in Asia, where the infestation rate remains at low levels and the parasite does not seriously harm the colony (KOENIGER et al. 1981, DE JONG et al. 1982). By contrast, European honey bees, *A. mellifera*, show a high susceptibility to *Varroa* infestation. No equilibrium between the population of bees and mites seems yet to be established (BOECKING & RITTER 1994). The impact of *Varroa* depends on the degree of infestation in the bee colonies. A high infestation eventually leads to severe damage and death of a large proportion of bee colonies (DE JONG et al. 1982). However, in *A. mellifera* colonies the reproduction rate of *Varroa* differs in various regions of the world. Investigations by RITTER & DE JONG (1984) revealed considerably lower *Varroa* infestation rates among Africanised honey bee colonies in tropical and subtropical Latin America when compared with temperate areas of Europe and the Middle East. Furthermore, remarkable variations in the reproductive behaviour were observed in the bee races of the same region.