

Origin and rearing season of honeybee queens affect some of their physiological and reproductive characteristics

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These investigations were conducted during February 2005 to October 2006 at the apiary of the Faculty of Agriculture, Jordan University of Science and Technology, Irbid Jordan. Queen honey bees of *Apis mellifera ligustica* and *Apis mellifera syriaca* were raised to investigate some physiological and reproductive characteristics and to determine the most suitable time for queen rearing under the semiarid conditions in Jordan. Queen rearing season as well as the origin of the queens affected the queens' weight, acceptance, preoviposition period, volume of spermatheca, quantity and quality of sperms in the spermatheca. Italian bees were heavier than the Syrian bees at emergence. Introduced queen acceptance rate appeared to be a genetic influence of the queen; *Apis mellifera ligustica* virgin queens were accepted at a higher rate than *Apis mellifera syriaca* queens. There were high seasonal variations in the acceptance rates. Experimental bee colonies accepted their virgin queens during spring with good honey flows at a higher rate compared to the rearing periods. The highest mating success was achieved in May and the lowest was during July and August. The preoviposition period was shorter in the Syrian than Italian queens and was longer during the summer time for both honeybee subspecies. The volume of the spermatheca was smaller in the Syrian bees and had lower numbers of spermatozoa in the spermatheca compared with Italian bees. Thus, under the semiarid Mediterranean region conditions, it is highly recommended to raise virgin queen in the spring months only to obtain their highest quality.