

Effect of Varying Diets on Growth, Development and Survival of Queen Bee (*Apis mellifera* L.) in Captivity

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Abstract : Keeping in view the increasing demand, queen of *Apis mellifera* L. (Hymenoptera: Apidae) was reared artificially in this experiment at varying diets including royal jelly. Larval duration, pupal duration, weight, and size of pupae were evaluated at different diets including royal jelly. Queen larvae were raised by Doo Little grafting method. Four different diets were mixed with royal jelly and applied to larvae. Fructose, sugar, yeast, and honey were provided to rearing queen larvae along with same amount of royal jelly. Larval and pupal duration were longest (6.15 and 7.5 days, respectively) at yeast and shortest on honey (5.05 and 7.02 days, respectively). Heavier and bigger pupae were recorded on yeast (168.14 mg and 1.76 cm, respectively) followed by diets having sugar and honey. Due to production of heavier and bigger pupae, yeast was considered as best artificial diet for the growing queen larvae. So, in the second part of experiment, different amounts of yeast were provided to growing larvae along with fixed amount (0.5 g) of royal jelly. Survival rates of the larvae and queen bee were 70% and 40% in the 4-g food, 86.7% and 53.3% in the 6-g food, and 76.7% and 50% in the 8-g food. Weight of adult queen bee (1.459±0.191 g) and the number of ovarioles (41.7±21.3) were highest at 8 g of food. Results of this study are helpful for bee-keepers in producing fitter queen bees.

Keywords : *Apis mellifera* L, dietary effect, survival and development, honey bee queen

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