EFFECT OF PROTEIN FEEDING ON THE DEVELOPMENT OF HYPOPHARYNGEAL GLANDS OF TWO RACES OF HONEYBEES AND THE CHEMICAL COMPOSITION OF ROYAL JELLY

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ABSTRACT

Four strong colonies of first hybrids of each of Carniolan bees *Apis mellifera carnica* and Italian bees *Apis mellifera ligustica* were selected to produce royal jelly using grafting method. Proteinous food materials were used to feed colonies, to study such effect. Qualities of royal jelly produced from fed and unfed colonies were collected for analysis. Development of hypopharyngeal glands was studied by measuring acinal surface of the glands of different working bee ages. Chemical composition of royal jelly showed the following percentages, moisture 61.74, carbohydrates 14.78, protein 12.73, lipids 4.00 and albumin 4.39% for F1 Italian samples. feeding colonies increased protein contents with low moisture percentage.

INTRODUCTION

Royal jelly is a secretion of hypopharyngeal glands of adult worker bees. Queen larvae receive royal jelly throughout their larval and adult lives. Royal jelly composition was studied by many workers i.e. Johansson, 1955; Mitsue et al. , 1973; Young and Choi, 1977 and Leardi and Cipro, 1989. Also, the development of hypopharyngeal glands which affected by many factors was studied by Allen, 1955; El Barbary, 1980 and Youssif -Khalil, 1983. This work was carried out to through some light on the composition of royal jelly which collected from two honeybee hybrids under feeding treatments also the development of hypopharyngeal glands of different honeybee worker ages.