INTRODUCTION

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Mullberry silkworm, *Bombyx mori* (Order: Lepidoptera, Family Bombycidae) is one of the most economically important insects not only on the national level but also internationally. The importance of this insect developed from its ability of secreting the natural silk filament from its silk glands (2 salivary glands), which is a raw material not only good for producing precious fabrics, but also for making parachutes, tire lining, electric insulation materials, artificial blood vessels. It is well known for its good high water absorbility, dying affinity, thermo tolerance, insulation and luster (**Annonymous, 1992**). Egypt produces about 3 tons of raw natural silk each year while the local market needs more than 300 tons that must be imported from abroad, so a considerable attention has been given recently to improve rearing of this insect and to increase the production of raw natural silk, which considered as one of the most important fibers in local and world markets. The production of high quality and quantity of natural silk depends mainly on larval feeding (**Parra, 1991**), suitable environmental conditions (**Saha *et al.*, 1995**), and protection from diseases (**Dechu *et al.*, 1997**).

Mulberry silkworm, *Bombyx mori* is a complete metamorphic insect and the larval stage is the only stage in its life cycle, which can feed and secrete the silk filament. The development of sericulture is directly related to the mulberry cultivation as mulberry silkworm is an insect of monophagy characteristics that eats only mulberry leaves. Therefore, much efforts and researches must be involved in quantity and quality

production of mulberry leaves for silkworm rearing and then cocoon production (**Raman *et al.*, 1995**).

Nowadays, nutritional additives are commonly used to enrich the nutritional value of mulberry leaves offered to silkworm larvae as plant extracted oils or vitamins (**Subba *et al.*, 1967; Dabbah and Moats, 1970; Chinnaswamy *et al.*, 1986; Hosny and Megalla, 1986; Jawale and Tayade, 1987; Morsi, 1988; El-Zohairy *et al.*, 1990; Govindan *et al.*, 1990; Kotby *et al.*, 1990; Alagumalai *et al.*, 1991; Reddy *et al.*, 1991 and Saha *et al.*, 1995).**

Mulberry leaves immersed in solutions of 0.5, 1.0 and 1.5% ascorbic acid (vitamin C) solution significantly increased the weights of both larvae and cocoons of silkworm compared with untreated leaves (**Miranda *et al.* 1998**)

The nutritive value of mulberry leaves seemed to affect the morphometry and the physiology of silk glands **(Qader *et al.*, 1992** and **Mahmoud, 2000)**.

This work aimed to throw some light on the nutrition additives of three plant extracted oils namely: lime, clove and jojoba oils on some biological, physiological aspects and technological characters of natural silk produced by mulberry silkworm *Bombyx mori.*