

Research Paper :

# Effect of *Ocimum sanctum* leaf extract on matured larvae of silk moth, *Bombyx mori*

SURJEET S. JAT, P.K. MEENA, S.K. GOYAL, SAPAN PATEL AND R.C. SAXENA

International Journal of Plant Protection (October, 2010), Vol. 3 No. 2 : 295-297

See end of the article for authors' affiliations

Correspondence to :

**SURJEET S. JAT**

Pest Control and

Ayurvedic Drug

Research Laboratory,

S.S.L. Jain College,

VIDISHA (M.P.)

## SUMMARY

The plant hormones extracted from *Ocimum sanctum* showed effect on maturation of 5<sup>th</sup> instar silkworm larvae. The effect was more pronounced on day 3<sup>rd</sup> and 4<sup>th</sup>.

The mulberry leaf is used as food for rearing of silkworm larvae for their growth and development and subsequent cocoon production depending mainly on the nutrient composition of mulberry leaf (Krishanaswamy *et al.*, 1971; Bhuyian, 1981).

Protein forms the main constituents of mulberry leaf, which plays a vital role for development of silk gland during the initial stage of larval period (Quader, 1987). The larval stage lasts about 21 to 25 days after hatching and the final size is attained by the larva with matured salivary gland (silk gland). The larva now suspends its feeding and prepare for the next stages, which is called pupa with cocoon. The cocoon is a hard protective covering formed of silk fibre, which is produced by the larva in 6 days after maturation. The cocoon is the final stage for obtaining the silk. So, by the nutritional management of mulberry plant, the production of cocoon can be improved.

Most rearing practices are designed to meet the market demand to increase yield and to reduce labour and other cost of production. The catastrophic loss due to infectious disease is greater and needs intensive management for rearing since it is an important component of the system and silkworm rearing needs to be carefully managed. The management of silkworm disease needs the co-operation of a large population than individual role because of the economics involved. The effect of plant

hormone on cocoon production and reeling parameters have been studied by Trivedy *et al.*, 1998, Prasad *et al.*, 2001 and Zhuang *et al.*, 1992. Looking to the commercial use of silk and growing interest among the farmers regarding silk industry, it is quite imperative to observe the effect of plant hormones on rearing and growth of silk moth larvae. The present paper reports the effect of *Ocimum sanctum* on maturation of 5<sup>th</sup> instar larvae .

## MATERIALS AND METHODS

### Rearing of silk worm in the insectary :

Before rearing of the silkworm larvae, the eggs were kept in plastic trays in a closed dark room and were exposed to 0.5 KR U.V. light for 15 minutes along with control.

The silk breed, bivoltine (CSR2 × CSR4) hybrid was selected for experimental work. This bivoltine race is recommended for temperate regions having adequate irrigation facilities in the mulberry garden (Rajan *et al.*, 2001).

Silkworm (*Bombyx mori*) belongs to the Phylum Arthropoda and Class Insecta. It is a member of a small family of about 300 moth species of the order Lepidoptera. The larva of silk moth is an elongated caterpillar, commonly known as silk moth. Larvae are monophagous and feed only on mulberry plants. The larvae moult four times before spinning a silk cocoon of one continuous fibre for pupation. Silk

### Key words :

Phytochemical,

Bivoltine, Cocoon

Accepted :  
August, 2010