Influence of early and late mounting on economic parameters in autumn rearing of PM × CSR₂ larvae of silkworm, *bombyx mori* l.

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Abstract

Effect of early and late mounting larvae on some economic traits such as single cocoon weight, single shell weight, shell %, cocooning %, defective and good cocoon % of multi × bi silkworm hybrid (PM × CSR₂) is presented in this paper. All the parameters studied under this experiment showed better performance in control batches when the silkworms were mounted on recommended day of mounting i.e, 7ᵗʰ day after maturation.

Introduction

Mounting operation is one of the times bound and labour intensive activities in silkworm rearing. After feeding on mulberry leaves for several days, silkworms of the 5ᵗʰ instar stop feeding and begin to spin cocoon. To spin cocoons, mature silkworms need mountages (cocoon frames) as supports. The process of moving mature larva onto the cocoons frame is called mounting. Mounting process in silkworm rearing is the most labour intensive operation to be simplified. Mounting should not be delayed when larvae mature as it results in loss of silk besides production of poor quality cocoons. The rearing of silkworm in the state of J & K is a supporting occupation for small and marginal sericulturists to earn livelihood unlike in tropical areas this enterprise is practiced as major activity by the rural masses. The sericulturists in the state generally do not have their own mulberry garden, but are dependent on wild trees growing on road sides, forests, etc. Quite often they are forced to abandon...
their rearing even on penultimate day due of seriposition due to non-availability of leaf. Although availability of quality mulberry leaf commensurate with the quantum of seed distributed among silkworm rearers is of paramount importance yet the rearers generally over look this fact and rear more worms and are ultimately encountered with undesirable situations like shortage of leaf, rearing space, mountage, labour etc. Keeping in view, an attempt was made to ascertain the Influence of early and late mounting on economic parameters in autumn rearing of PM × CSR₂ larvae of silkworm, Bombyx mori L.

MATERIALS AND METHODS
The experiment was carried out at Department of Sericulture, Govt. Degree College, Poonch (J&K). A popular multi x bi hybrid (PM × CSR₂) reared as per the method advocated by. Under favourable condition this hybrid completes its larval period in seven days and starts to spin cocoons. The duration of 7 days in 5th age was taken as bench mark (Control). Larvae mounted on 6th day (24h before recommended time of 7 days) formed treatment first (T1). Similarly, larvae mounted on 7th day (20 h after maturation recommended time for 7 days) formed treatment two (T2). Mounting of worms before recommended day i.e., 7th day was considered as early mounting whereas, mounting after recommended 7th day was considered as late mounting. In both the treatments, larvae were handpicked and kept separately in plastic collapsible mountages for spinning. Total four replications in each treatment including control were maintained. Each replication comprised of 250 larvae. This experiment was conducted in autumn season and the data pertaining to some important cocoons parameters were collected and presented on average performance in the Figures (1-3).

RESULTS AND DISCUSSION
In time mounting of matured larvae have a vital influence on the quality of cocoons. The farmers are often losing their crops owing to poor knowledge about the actual time for mounting the matured larvae. It is clear from mean performance of the experiment data that early mounting and late mounting have negative influence on the economic character as compared to the actual mounting of matured larvae. The important economic parameters such as cocoon weight, shell weight, shell %, cocooning %, defective and good cocoon % were studied under this experiment are depicted in Fig (1-3) and discussed below.

SINGLE COCOON WEIGHT
Cocoon weight is one of the important traits for the rearers point of view because the cocoons are sold by the weight only. The data relevant to this parameter showed that lowest cocoon weight was recorded in early T1 and late mounted larvae T2 (1.53 & 1.59g), but highest single cocoon weight was noticed when worms were mounted on 7th day i.e., control T3 (1.62g). The single cocoon weight is directly correlated to feed quantum ingested during 5th instar. (1) reported that larvae
mounted after taking 18 feeds (5th day) spun lighter cocoons. Worker reported that single cocoon weight is directly correlated to feed quantum ingested during 5th instar. The present investigation also confirmed with this statement as the highest cocoon weight was found in control when the worms were mounted at the actual time of mounting.

**SINGLE SHELL WEIGHT**

The data with regard to single shell weight depicted that highest value was recorded in control T3 (0.294 g) followed by late mounted larvae T2 (0.284g) and early mounted larvae T1 (0.274g). Koul reported that during last 2 instars 2-3% of food consumed is converted into cocoon shell weight. Single shell weight was also affected by the quantum of mulberry leaved fed up to the end of 5th instar or up to full maturation of the silkworms. The present study also supports the observations made earlier.

**COCOONING %**

Highest cocooning was recorded in control T3 (93.03%0 followed by early mounted larvae T1 (86.89) and late mounted larvae T3 (85.77%) (Fig-2). Calvez, B. (1981) stated that the obligatory period of feeding is the first 4 days in silkworm *B.mori* L. He also reported that when larvae were starved after at least a 5 day feeding period, all moulted into pupae. The results of the present finding also showed that, when the worms are mounted at different hours after 6th day in 5th instar (before 24 h maturation and on 7th day & 20 h after maturation) these formed cocoons. Some scientist suggested that mounting of silkworm larvae at proper time gives good results, however the silkworm mounted on 4th day of 5th instar for seriposition also spin cocoons.

**DEFECTIVE AND GOOD COCOON %**

The lowest defective cocoon percentage was found in control T3 (5.75%) followed by late mounted larvae T3 (14.13%) and early mounted larvae T1 (12.58) (Fig-3). The data pertaining to good cocoon percentage depicted that highest value was recorded in control T1 (93.38%) followed by early mounted larvae T1 (87.10%) and late mounting larvae T2 (85.08%) (Fig-3).
Fig 1: Effect of early and late mounting larvae on cocoon weight, shell weight and shell %.

Fig 2: Effect of early and late mounting larvae on cocooning %.

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Fig 3:- Effect of early and late mounting larvae on defective and good cocoon %.


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