


ABSTRACT

The demand for silk has been increasing day by day but the average silk production is not enough to meet its demand. Silk production has a direct link with silkworm growth on mulberry leaves. The current study was designed to evaluate the effect of amino acids supplemented larvae feeding on the biological and commercial traits of silkworm (*Bombyx mori* L.). The silkworm larvae at 5th instar stage were taken and fed with fresh and healthy mulberry leaves coated with Alanine, Glycine and Serine in fourteen different combinations. Results of this study exhibited that the average weight of silkworm larvae on day 7 was significantly higher in the group fortified with 0.5% Glycine + Serine as compared to control. The % ratio of silk gland to body weight was highest in group fed with Alanine (1%) treated mulberry leaves followed by 1% Alanine + Glycine + Serine treated mulberry leaves. The economic traits of larvae fed with amino acid fortified leaves also improve significantly ($P < 0.001$). The larvae fed with Alanine (1%) treated mulberry leaves showed the maximum cocoon weight, cocoon length, cocoon width and cocoon shell ratio. Furthermore, treatment groups in which silkworms were fed with Alanine (1%) and Glycine (1%) treated mulberry leaves showed highest percentage fibroin content as compared to control group. It is concluded by this study that the 0.5% Glycine + Serine have positive effect on larval weight while 1% alanine coated mulberry leaves have positive effect on the economic and biological traits of *Bombyx mori* (L.).

Keywords: *Bombyx mori*, Mulberry leaves, Amino acids, Supplementation, Silkworm, Fibroin, and Sericin  (Ctrl) ▾