

Nutrition Quality of Mulberry Varieties Assessed through Chemo-Assay Study of Internal Tissues and Organs of *Bombyx mori* Linn.

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ABSTRACT

The nutritional quality of the mulberry (*Morus* sp.) variety is judged by the chemical constituents of different tissues and organ systems of the bivoltine race Alps yellow of *Bombyx mori* Linn. The biochemical analysis of the internal tissues and organs in the larvae, pupae and adults of Alps yellow race shows that no single internal tissue and organ in the larvae, pupae and adults consists of all the nutrients at the higher level. The overall assessment made of the nutritional level of the leaves of different mulberry varieties reveals that the variety V₁, fed silkworm, scored maximum for most of the parameters, followed by Kanva-2. Therefore the V₁ variety is found to be the best variety among the varieties studied.

Key words: Nutritional qualities, mulberry varieties, silkworm, *Bombyx mori*, chemo-assay.

INTRODUCTION

The nutritional parameters of mulberry leaves and silk production are indirectly proportional to each other. Selection of better mulberry varieties as well as silkworm races appears to play a vital role in the silk production. As the silkworm derives nutritional requirement from mulberry leaves for their growth and development, variations on the components of mulberry leaves may have some influence in the growth and development of silkworm (Parpiev, 1968; Krishnaswami *et al.*, 1976). Protein is the main component that produces tissue and organs of the silkworm. Silkworms utilize protein and amino acids present in mulberry leaves to synthesize the protein, specific for silk gland secretion (Shimura, 1978). Carbohydrates are essential for immediate energy release and reproduction in silkworms (Tazima, 1975; Tanaka, 1964).

The protein is the principal constituent of silk and the plants with higher protein content are more readily accepted and supported growth better than varieties with lower protein content (Soo Hoo & Frankel, 1966). There have been a large number of biochemical studies on protein biosynthesis in the silk producing glands *viz.*, nucleic