**ABSTRACT**

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| **Title of the thesis** | : | Study on Impact of Herbal Disinfectants and Protein Supplements on Quality of Silk Fibre |
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| **Major Subject** | : | Sericulture |
| **Name and Designation of Major Advisor** | : | Dr. Amit Kumar Singh  Professor |
| **Degree to be awarded** | : | M.Sc. (Sericulture) |
| **Year of award of degree** | : | 2023 |
| **Name of the University** | : | Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu |

*Bombyx mori* L. (Lepidoptera), commonly known as mulberry silkworm reared on the leaves of mulberry for large scale production of silk. The fortification of mulberry leaves with protein supplements is an emerging technique in advanced sericulture research for enhancing the quality and quantity of silk. Therefore, two different concentration of protein supplements were prepared and administered to the silkworm larvae and herbal and commercial bed disinfectants were also applied on the silkworm larvae for the production of better-quality silk during the research. The study was conducted in the sericulture research laboratory of the Division of Sericulture, SKUAST-J. All the protein supplements and herbal disinfectants along with the traditional disinfectants proved better. However, among various treatments*,* protein supplement I recorded significantly the highest larval weight (42.38 ±0.38) g and survival (97.48± 0.53%) which was followed by T4 *i.e.,* protein supplement II.

Moreover, the cocoon yield by weight (g) and number; (14.09± 0.50) and (9165 ±34.35) were found to be the highest in T3 followed by T4 *i.e.* (12.93±0.20) and (9113±40.96). However, the respective values were the lowest in control (9.90) and (7790±76.38). The revealed significant increase in good cocoon percentage from (56.12 ±1.48%) (control) to (83.67± 1.78%) and (85.89± 0.26%) in T4 and T3, respectively. Simultaneously, the pupation percentage among the various supplements increased from (57.08±1.20%) in control to (84.18±1.09%) in T4 to (86.40± 0.60%) in T3. It was also found that the single cocoon weight, shell weight and shell ratio percentage were significantly the highest in T3 *i.e.*, (1.60±0.01) g, (0.33±0.02) g, (20.01±0.10%) followed by T4 *viz.,* (1.52±0.02), (0.30±0.01) g and (19.73±0.06%), respectively. However, the lowest values for single cocoon weight (1.25±0.02) g, single shell weight (0.23±0.01) g and shell ratio percentage (18.48±0.11%) were recorded in control. The different treatments showed significant influence on the cocoon length and cocoon width *i.e.*, (35.176 ±0.28) mm and (20.126±0.09) mm in T3, (33.090±0.08) mm and (19.150±0.10) mm in T4 followed by (26.700±0.69) mm and (16.200±0.29) mm in control. The study also revealed that the filament size (denier) was found to be the lowest (2.000±0.05) g in T3 and the highest (2.846±0.03) g in control.

**Keyboards:** *Bombyx mori*, mulberry, protein supplement, disinfectants