Title of Thesis : Studies on silkworm diseases and their influence on cocoon productivity
 under field conditions

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**ABSTRACT**

The present study entitled “Studies on silkworm diseases and their influence on cocoon productivity under field conditions” was conducted in three sericultural potential districts of Jammu region with a sample size of 225silkworn rearers. The objective of the study was to work out the incidence of different silkworm diseases during rearing seasons influencing cocoon productivity besides extent of adoption of recommended package of practices. The overall disease incidence/oz. seed was maximum in district Rajouri (43.79 %) followed by Kathua (31.02 %) and (26. 61 %) in Udhanpur. In autumn season the incidence of different diseases was highly significant (F=38.03\*\*) with average value of 41.18 per cent compared to spring (26.44 %). The interaction of season and districts was found to be insignificant (F=141, p-value-0.24). During autumn season, maximum percentage of disease incidence was recorded in Rajouri (49.32%) followed by Kathua (41.06%) and Udhampur (20.07 %). However, seasonal yield (spring and autumn) was highly significant (F=62.93\*\*). Maximum yield was recorded in spring season with average of 37.47 Kg/oz and minimum in autumn (27.83 Kg/oz.) The interaction of season with districts was significant (F=3.16\*). During spring rearing, maximum yield/oz. seed was recorded in district Udhampur (40.78Kg) followed by Kathua (40.58 Kg) and minimum 23.13 Kg in Rajouri during autumn season. The present investigation revealed that 51.56 per cent of rearers in three districts belonged to scheduled caste followed by general category (45.33%) and 36.44 per cent were illiterate. On an average, 41.78 per cent possessed separate rearing shed, only 4.00 per cent had acquired training on fine-tuned technologies. The adoption of recommended practices of mulberry plantation depicted that only 24.44 per cent respondents trained their mulberry trees and none adopted plant protection measures. For adoption of recommended silkworm rearing practices, 77.78 per cent adopted disinfection, 41.78 maintained hygienic conditions, 33.33 per cent reared post chawki worms and only 2.22 per cent used dry/wet thermometer for temperature and humidity recorder/maintenance. Majority of the respondents (99.11% adopted three feeds per day during chawki and 53.78 per cent fed silkworms two times only in late stages. 54.67 per cent adopted plastic mountage. Only8. 89 per cent used black cloth cover for stifling of cocoons in sun. The major constraints observed during present study were insufficient mulberry (ᵡ2 =29.13, p<0.01), high disease incidence due to non-adoption of recommended package of practices and harsh climatic conditions during autumn, lack of season specific hybrids (ᵡ2 =05.39, p<0.05). The relationship of temperature and humidity with the diseases such as grasserie, flacherie, muscardine and cocoon yield were displayed both positive and negative but highly significant. From the results, it is amply clear that non-adoption of recommended package during silkworm rearing was substantiated by regression values predicting that non- chawki reared worms significantly influences the higher incidence of diseases particularly in harsh autumn season and post chawki reared worms enhance the cocoon crop production.

**Key words:** Silkworm, disease, cocoon, adoption, season