# Determinants influencing adoption of improved sericulture practices in Jammu

Aradhana Sharma[1*], Rucku Gupta[2], Rakesh Kumar[3] and P S Slathia[4]

https://doi.org/10.5958/2455-7560.2023.00015.8

[1]*J&K Sericulture Development Department, Jammu, J&K, India*
[2,34]*FoA, SKUAST, Jammu 180 001, J&K, India*

**Received:** 8 September 2021;   **Accepted:** 15 May 2022

The average yield of 25 kg of cocoons/100 dfls in the recent past has increased to 65 kg/100 dfls (Chouhan *et al.,* 2016). In India, Jammu abd Kashmir is one of the leading bivoltine silk producing state.  The

**Table 1. Variables affecting adoption of improved mulberry and silkworm rearing practices (Binary Logistic Regression)**

| Dependent variable | Independent variables | Coefficient B | S.E. | Wald | P-value | Exp (B) |
|---|---|---|---|---|---|---|
| Plantation of recommended varieties | Constant | -6.617 | 3.909E4 | .000 | 1.000 | .0001 |
| | Annual Income | .000 | .000 | 6.291 | .012 | 1.000* |
| | No. of mulberry trees | -.022 | .009 | 6.142 | .013 | .978* |
| | Experience | .099 | .045 | 4.853 | .028 | 1.104* |
| | Training acquired | -3.025 | 1.418 | 4.552 | .033 | 20.599* |
| | Type of Rearing House | 1.369 | .546 | 6.278 | .012 | 3.930* |
| Training of mulberry plants | Constant | 47.419 | 4.151E4 | .000 | .999 | 3.927E20 |
| | No. of mulberry trees | -.080 | 014 | 33.649 | .000 | .923** |
| Pruning of mulberry trees | Constant | -2.687 | 2.911 | .852 | .356 | .068 |
| | Education | .226 | .066 | 11.558 | .001 | 1.253** |
| | No. of mulberry tree | .036 | .010 | 14.180 | .000 | 1.037** |
| FYM application | Constant | 79.314 | 4.557E4 | .000 | .999 | 2.790E34 |
| | No. of mulberry tree | -.012 | .003 | 12.146 | .000 | .988** |
| Fertilizers application | Constant | 72.800 | 4.593E4 | .000 | 999 | 4.137E31 |
| | No. of mulberry tree | -.014 | .004 | 13.306 | .000 | .986** |
| | Annual Income | .000 | .000 | 4.447 | .035 | 1.000* |
| Instar-wise mulberry leaf selection | Constant | -42.070 | 4.610E4 | .000 | .999 | .000 |
| | Age | -.036 | .018 | 4.086 | .043 | .965* |
| | No. of mulberry tree | -.009 | .003 | 10.867 | .001 | .991** |
| Feeding frequency during late age rearing | Constant | -.299 | 3.153 | .009 | .925 | .742 |
| | Occupation | -.492 | .225 | 4.763 | .029 | .612* |
| Care during moult | Constant | -.023 | 2.822 | .000 | .993 | .977 |
| | Rearing Kit | 1.241 | .388 | 10.218 | .001 | 3.461** |
| Hygiene measures during rearing | Constant | 40.474 | 4.107E4 | .000 | .999 | 3.780E17 |
| | Occupation | 1.218 | .273 | 19.900 | .000 | 3.381** |
| | Annual Income | .000 | .000 | 7.683 | .006 | 1.000** |
| | No. of mulberry tree | -.008 | .003 | 6.258 | .012 | .992* |
| | Type of rearing house | -.594 | .198 | 8.947 | .003 | .552** |
| Proper disposal of silkworm rearing waste | Constant | 41.015 | 4.029E4 | .000 | .999 | 6.496E17 |
| | Occupation | 1.115 | .263 | 18.003 | .000 | 3.051** |
| | Annual Income | .000 | .000 | 5.713 | .017 | 1.000* |
| | No. of mulberry tree | -.011 | .004 | 8.171 | .004 | .989** |
| | Rearing kit | -.857 | .370 | 5.373 | .020 | .424* |
| | Type of house | -.644 | .192 | 11.217 | .001 | .525** |

(** and * refers significance level at 1% and 5%)

*Corresponding author: chanderardhana123@gmail.com

main silk production districts are Anantnag, Kupwara, Pulwama, Baramula, Gandarbal, Udhampur, Rajouri, Kathua and Reasi. The gap between potential and actual yield obtained by silkworm rearers are not fully exploited. Keeping in view, socio-economic profile of silkworm rearers and deviations in adoption of recommended package of practices were identified to know the factors influencing same in three potential areas of Jammu province.

The data on age, occupation, experience, education, land holding, type of area, area under mulberry plantation, type of rearing house, possession of rearing appliances, training on sericulture improved practices and net annual income and adoption of improved sericulture practices with respect to mulberry and silkworm rearing were collected from randomly selected 225 sericulturists from three major cocoon-producing districts, *viz.* Kathua, Udhampur and Rajouri. A well-designed pre-tested questionnaire was used for collection of primary data from silkworm rearers. The data were statistically analysed using SPSS software with techniques, *viz.* percentage, Chi-square method and binary logistic regression model was employed for studying the effect of variables on decision making of adoption of recommended package of practices and Nagelkerke's $R^2$ values were used to measure variations due to predictors. Secondary data were obtained from different government reports available offline as well as online.

The results of binary logistic regression model (Table 1) indicated that out of all independent variables, number of mulberry trees owned by respondents was most influencing factor which significantly affected farmer decision to adopt training, pruning, FYM and fertilizer application, instar-wise leaf selection, hygiene measures during rearing and proper disposal of silkworm rearing. The results are almost in accordance with Lakshmanan *et al.* (2011), Sreenivasa and Hiriyanna (2014) and Sharma *et al.* (2019 and 2020). Thus, it is concluded that mulberry plantation with quality leaf was the most influencing factor for adoption of sericulture which ultimately affects the successful cocoon crop production. The possession of rearing kits, type of rearing houses, trainings so received were other factors.

## REFERENCES

Chouhan S, Mittal V, Babulal, Sharma S P and Gani M. 2016. Situation analysis of sericulture industry in Jammu and Kashmir. *Bio Bulletin* **2**(1): 52-57.

Lakshmanan S, Balasaraswathi S and Mani A. 2011. Rural labour employment through mulberry sericulture: An analysis of cross sectional study. *Journal of Rural Development* **30**(2): 155-67.

Sharma A. 2019. Studies on silkworm diseases and their influence on cocoon productivity under field conditions. Ph.D. Thesis, Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu, Main Campus, Chatha, Jammu, p. 49.

Sharma A, Chanotra S, Gupta R and Kumar R. 2020. Influence of climate change on cocoon crop loss under subtropical conditions. *International Journal of Current Microbiology and Applied Sciences* **9**(5): 167-171.

Sreenivasa B T and Hiriyana. 2014. A study on the factors influencing adoption of new traditional sericultural area of Chitradurga district, Karnataka. *Global Journal of Biology, Agriculture & Health Sciences* **3**(1): 239-243.