A methodology to measure appropriateness of silkworm rearing technologies adopted by the farmers

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ABSTRACT

The extent of adoption of silkworm rearing technologies released since one decade was ascertained in purposively selected Kolar district. The paired comparison technique was applied and selected three silkworm rearing technologies. In each of Kolar and Sidlaghatta taluks with highest area under mulberry, four villages were randomly selected. All the adopters of the selected technologies constituted the respondents for the study. To measure the appropriateness of the preferred silkworm rearing technologies, 24 attributes were collected from review of past researchers. These attributes were listed under each technology with three-point continuum and the questionnaires were administered to 138 judges. The total scores for each and every attribute for three technologies were arrived separately based on the reports of the judges. The total scores for all attributes for every respondent were also arrived at. The mean ($\overline{X}$) scores for all the respondents and the population mean (μ) were also calculated. The critical difference (CD) method was computed for retaining or deleting the attributes of the particular technologies. The reliability and content validity were ensured in the instrument. The graphic rating scales were developed for all the relevant attributes of three technologies. The scores of 1, 2 and 3 were assigned to the three point continuum based on positive and negative nature of the attributes. Farmers' response was taken on three point continuum for each technology. Scores were assigned accordingly and subsequently Mean Appropriate Score (MAS) was computed. The MAS of all the selected technologies for each individual were further averaged to arrive at overall MAS of the silkworm rearing technologies for each farmer. The overall MAS and MAS for the silkworm rearing technologies were subjected to range and three categories appropriateness were made.

Key words : Appropriateness, Silkworm Rearing Technologies, Attributes, Adoption.

INTRODUCTION

Sericulture in India is getting modernized since last one decade due to sustained emergence of new technologies and also extension activities for its spread. When the new technologies released, it is assumed that they possess all the desirable characteristics facilitating adoption. On the contrary, when the farmers do not adopt technology to the desired extent, the blame is vested on the farmers. The fact, that the attribute of the new technology is perceived by the potential adopters is more important than the scientists. This aspect is seldom explained as to how the farmers have perceived the technology as appropriate in relation to its attributes to their condition.

The concept of appropriate technology is yet to be fully crystallized in the field of Sericultural technology in particular and agricultural technology in general. Though a serious need for such a research has been realised, the attempts in this direction were very few *viz.,* Nayudamma (1973), Ravishankar (1978), Niranjana Kumar (1979) and Ramegowda (1991). These methods appears to be lacking scientific sophistication in determining the appropriateness of a particular technology. It appears that much research lag is observed in determining the appropriateness of technology to the farmers conditions. Keeping this in view, the present study was conducted to develop a methodology to measure appropriateness of silkworm rearing technologies adopted by the farmers.

METHODOLOGY

Kolar district was purposively chosen for the study. All the silkworm rearing technologies released since one decade was considered and the extent of adoption of these technologies in the farmers' field was ascertained. The paired comparison technique Guilford (1971) was applied. Based on the highest scale values, three technologies *viz.,* Shoot feeding for late-age silkworms, package of practices for chawki mulberry gardens and vijetha powder were selected.

Kolar and Sidlaghatta taluks were purposively selected based on highest area under mulberry. In each taluk, the villages having sericulture as main occupation were listed and from each village, all the adopters of selected technologies were identified. Finally, four villages from each taluk were selected randomly for making the total of eight villages. All the adopters of three technologies in the sample villages purposively constituted the respondents for the study.

To measure the appropriateness of the preferred silkworm rearing technologies, 24 attributes were collected from reviews of past researchers in the field and related ones, related text books like Barnett (1953), Lionberger (1960), Rogers (1962), Fliegel *et al.* (1968), Rogers and Shoemaker (1971), Ravishankar (1978), Niranjana Kumar (1979), Tornatzky and Klein (1981), Reddy *et al.* (1997) and Ganguly and Singh (1999), various research articles by extension specialists and discussion with the extension workers, researchers and progressive sericultural farmers.

All the 24 attributes were listed out under each preferred technology with a three-point continuum namely "highly applicable", "moderately applicable", and "least applicable" with weightages of 3, 2 and 1, respectively. To assess the degree of applicability of attributes for each technology, the questionnaires were administered to 138 judges in the sericulture field. They were requested to indicate their opinion by tick marking (ü) on one of the response categories of the three-point continuum against each attribute for every technology. The responses were obtained from 83 judges.

Total scores for each attribute for all the respondents under each technology were calculated. This procedure was followed in arriving at the total scores for each and every attribute for three technologies separately. The total scores for all the attributes for every respondent were also arrived at. The mean ($\overline{X}$) scores for all the respondents and the population mean (μ) were also calculated. The critical difference (CD) method was computed for retaining or deleting the attributes under a particular selected sericultural technology. If the deviation of attributes mean with population mean ($\overline{X}$ - μ) was equal to or greater than the value of critical difference for a particular attribute of a particular sericultural technology, that attribute was retained as significant The same procedure was followed for all the three technologies separately (Table 1,2 and 3).

To establish the reliability, the split half method was adopted. Highly significant correlation coefficient values (0.8896, 0.8678 and 0.8375) were achieved for all the instruments. Content validity was ensured for the instruments.

The graphic rating scales as suggested by Guilford (1971) for all the relevant attributes of three silkworm rearing technologies were developed (Scale-1, 2 & 3) and used to measure the