

b. Leaf Chopping for Young Age Silkworms

Silkworm in their early age are fed with chopped tender mulberry leaf. The leaves are chopped manually which is feasible for small rearing but for large rearing, some mechanical aid is required to cut leaves in less time. CSRTI leaf chopper can cut 225-250 kg of mulberry leaves per hour into different sizes for different age silkworms. The leaf chopping machine is very useful for Chawki Rearing Centres where large scale young age rearing is undertaken.



c. Silkworm Separator



This machine can separate 100 dfls (40,000 45,000) silkworms per hour from mulberry shoots. The use of machine will avoid spinning of cocoons in bed, ensure full crop harvest, reduce the cost of manual picking of silkworms from beds and delay in mounting silkworms.

d. Deflossing of the Cocoons

The outer layer of the cocoons consist of unreleable silk floss and has to be removed before reeling. CSRTI, Mysore has developed a variety of deflossers. Small rearers can use hand operated deflossers whereas for medium and large farmers, motorised deflossers are available. The deflossers help in deflossing the cocoons at a very fast rate and save labour charges. The deflossers also clean the cocoons. The deflossed cocoons fetch higher price in market.



e. Tray Washing Machine

A large number of plastic trays are to be washed in a Chawki Rearing Centre. A Tray washing machine can clean and wash 60-70 trays/hr. The machine is highly useful for Chawki Rearing Centres.



f. Collapsible Mountage Pressing Tool

To facilitate quick and proper folding and pressing of the plastic mountages, CSRTI, Mysore has developed a simple tool. It helps in fast bundling of the plastic mountages.



TOOLS & MACHINE SUPPLIERS

- 1. Mulberry cutting preparation machine and cocoon cutting machine :** Director, CSRTI, Mysore, Tel. 0821-2362757/2901103.
- 2. Flame Gun :** M/s. Kiran Corporation, 2-B, D.Devaraj Urs Road, Mysore : 570 001. Tel. 0821 2430572.
- 3. Electric Sprayer :** M/s. Balaji Agencies, 153/1, Ramavilasa Road, Mysore : 570 024. Tel. 0821-242874.
- 4. Leaf Choppers, Hand and motorized cocoon deflossing machines and battery operated duster** M/s. Raj Enterprises, No.1265, Ashirwad, Hebbal First Stage, Mysore : 570 016. Tel. 0821-2582656.
- 5. Secateurs, pruning saw, all types of sprayers :** M/s. S.V. Rangaswamy and Company (P) Ltd. No.2, 3rd Cross, Kalasipalayam New Extension, P.Box., No. 6539, Bangalore : 560 002. Tel. 080-22222301
- 6. Shoot crushing machine :** M/s. Bhide & Sons Pvt. Ltd., 1111-A, Timber Area, Post Box No.51, Shivajinagar (North Sangli 416 416 (Maharashtra). Tel.0233 2375011, 2376804.

For further details contact :

Director

Central Sericultural Research & Training Institute,
Srirampura, Mysore 570 008
Tel. 0821 2362757, 2901103 Fax : 0821 2362845
Website: www.csrtimys.res.in
email: director@csrtimys.res.in

MECHANISATION IN SERICULTURE



CENTRAL SERICULTURAL RESEARCH AND
TRAINING INSTITUTE
Central Silk Board
Ministry of Textiles - Govt. of India
MYSORE - 570 008 INDIA

Today, the Indian sericulture industry is facing a stiff challenge from imported silk mainly from Chinese silk which is not only superior in quality but also cheaper in cost. We shall, therefore, improve quality and reduce cost of production of indigenous silk.

The sericulture industry in India is highly labour intensive. In India, over 65-70 % cost of cocoon production accounts for labour wages for different activities. Hence, we should reduce labour dependency to reduce cost of cocoon production.

Why Mechanization in Sericulture ?

Mechanization in sericulture is required for :

- Increasing the productivity of land and labour
- Timeliness in various mulberry cultivation and silkworm rearing activities
- Getting more thorough works in various cocoon production activities
- Reducing drudgery in many activities
- Cutting down cost of production of silk cocoons
- Improving the quality of silk cocoons

1. Mechanization in Mulberry Cultivation

Mulberry cultivation is very important in sericulture. A good quality of mulberry leaves leads to production of good quality and silk rich cocoons. In recent years, the cost of production of mulberry leaf has increased due to increase in labour wages and cost of inputs like fertiliser and water. Nearly, 60 -70 % of cost of production of silk cocoons accounts for mulberry leaf. In mulberry leaf production, over 65-70 % expenditure goes for labour wages for inter-cultural and other operations. Hence to reduce the cost of production of silk cocoons, we must reduce cost of production of leaf. Appropriate mechanization such as adoption of tools, equipments and machines for land preparation, cutting preparation, inter-cultural operations, chemical spraying and shoot harvesting can reduce cost of mulberry leaf production atleast by 35-40 %.

a. Land Preparation for Mulberry Plantation

Mulberry is a perennial crop. Once planted, it lasts for 12-15 years. Therefore, the land for mulberry should be thoroughly prepared before plantation. Land for new mulberry plantations can be prepared faster and at less cost by using tractor operated mouldboard or disk



plough, cultivators and harrows. A thorough land preparation helps in faster establishment of mulberry plants

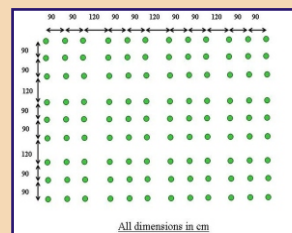
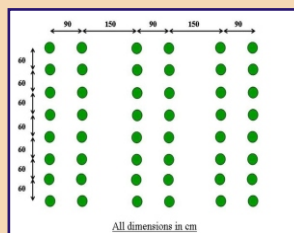
b. Mulberry Cutting Preparation Machine

Mulberry is propagated through cuttings. A worker manually makes 1,500 to 2,000 cuttings in a day. With help of mulberry cutting preparation machine developed by CSRTI, Mysore 1,400 to 1,500 cuttings can be prepared in one hour.



c. Mulberry Plantations and Intercultural Operations

CSRTI, Mysore developed plantation geometries like Paired row and 3M to facilitate mechanized operations. Mechanized cultivation reduces cost of leaf production and permits carry out work at faster rate. Power tillers, power weeders and tractor operated cultivators could be used for inter-cultural operations in mulberry gardens.



d. Mechanized Spraying of Chemicals in Mulberry Gardens

Timely control of diseases and pests is very much required for production of healthy mulberry leaves. Farmers can spray chemicals uniformly in less time with help of self-propelled CSRTI sprayer, TNAU power tiller mounted sprayer and ASPEE tractor mounted sprayer.



2. Mechanization in Silkworm Rearing

Silkworm rearing is highly labour intensive. About 40% of rearing expenditure accounts for labour wages for cleaning and disinfection of rearing house, chopping mulberry leaves for young age silkworms, feeding shoots to late age silkworms, silkworm picking and mounting, cocoon harvesting, cocoon deflossing and sorting of cocoons.

a. Rearing House disinfection

The rearing houses must be thoroughly disinfected for good cocoon crop. Power sprayers are very effective and fast for disinfection of rearing houses and rearing equipments. Electricity and engine operated sprayers have gained popularity among farmers due to effectiveness and fastness in carrying out disinfection. A flame gun developed by CSRTI, Mysore is highly time and cost effective tool for disinfection of rearing houses, rearing stands and mountages.

