

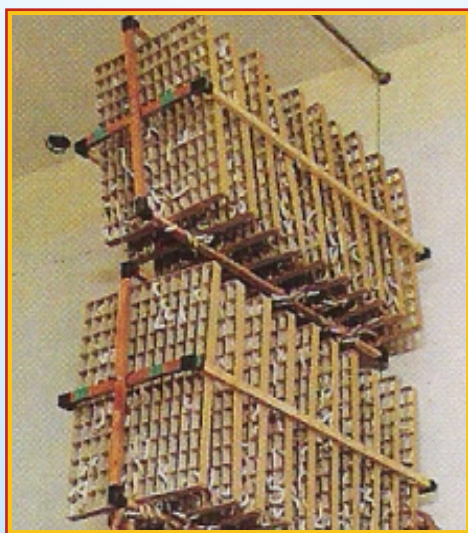
## Rotary Mountages



This is an improved, Japanese type of moutage made with thick paper boards. Each mounting frame has 13 rows and 12 columns containing 156 mounting slots.

Each slot is 4.5 x 3 x 3 cms in size and the dimension is 55 cms in length, 40 cms in width and 3 cms in depth. 10 such mountages are arranged in wooden frame with a distance of 8 cm from one another. The rotary mounting frames are hung from the ceiling during spinning stage and can be packed and stored after cocoon harvesting.

Before mounting the larvae, the rotary frames are placed on old news paper; about 1200 larvae are measured and distributed between the rows on the news paper. Once all the larvae climb on the moutage, the frames are lifted and hanged from the ceiling. Since the spinning larvae exhibit negative-geotrophic behavior, they climb and move up, because of the weight displacement, the moutage rotates, helping the larvae to search an empty slot and settle for spinning. Therefore, this type of moutage is called a rotary moutage.



## Harvesting of Cocoons

Harvesting of cocoons is done on the fifth day of spinning. Whereas seed cocoons should be harvested on eighth day or ninth day of spinning depending upon atmospheric temperature. Harvesting should not be done immediately after pupation. Further, harvesting should be done before the moth emerges out. Too many days delay in harvesting will result in formation of pierced cocoons due to emergence of adult moth or uzi maggots. Cocoons are harvested generally with hand. Simple devices are used to harvest the cocoons from rotatory moutage.



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## MOUNTING AND SPINNING OF COCOONS



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When the fifth instar silkworms complete their growth, they stop feeding and start emitting silk. At this point mountages are used for cocoon spinning. Mounting is considered to be a crucial stage in silkworm rearing for obtaining a bumper harvest and good quality cocoons.

### Features of good moutage

- The material used should be such that the frame can be easily made and should be convenient for spinning good cocoons.
- The mountages should be uniformly distributed and stand firmly.
- It should have proper space for spinning and free air circulation to avoid excessive moisture.
- It should be capable of enhancing the quality of the cocoons and their reelability percentage.
- It should be cost effective and highly durable.
- The maintenance should be simple, easy and should not occupy too much space.

The most effective mounting practice is the use of rotary mountages which provide good ventilation and improve the reelability of cocoons.

### Spinning

When the silkworm becomes matured completely and ready to spin the cocoon, they become translucent, stop feeding mulberry leaves and start to search for a corner. Further, liquid like substance ooze out of the mouth from the spinneret. Then it requires to be shifted to the mountages and transferring of matured silkworm to the moutage or cocoon frames is called mounting. This is an important skilled operation and deviation in identification of maturity of worms can adversely affect cocooning.

### Spinning Care

Picking up ripened worms with hands and transferring them to moutage is the most common method used in our country. This is laborious and due care is needed while handling the mature worms. Care should be taken to maintain 25-26°C temperature, 65-70% humidity and good ventilation. Proper spacing should be given to avoid formation of double cocoons, stained cocoons/urinated cocoons. Optimum density of

worms in the moutage should be 40-50 worms per sq.ft. However, the number of worms in each moutage depends upon the size and type of silkworm hybrid. In an area of 1 mt 800-900 worms can be mounted. Moutage should be kept in inclined position so that, excreta of worms fall on ground. In certain strains of silkworms around 250-300 worms can be conveniently mounted in a standard moutage of 90 x 60 cm size. However the size of moutage varies from place to place. In case of bamboo made chandrike that has a mat on the back ground of size 6' x 4', can easily accommodate 1000 worms.

### Cocooning

The matured silkworm spins the outer protective covering called cocoon and remains in dormant stage inside as pupa. After mounting the ripen worms sticks on to the moutage by oozing out the silk fluid which will harden immediately after coming in contact with air. It starts to ooze out the silk by continuous movement of its head in a very specific manner to form the silk filament in the shape of arithmetic figure 8. It moves its head continuously for about 70-80 times per minute till the compact shell called cocoon is formed and detaches itself from the last layer of silk and then transforming into pupa. The Cocoon will have three layers - Outer floss, Middle compact layers and Inner pelade.

The outer floss layer will be 8-10% of weight of cocoon, though formed of a continuous filament, it is not reelable. The floss percentage varies from breed to breed. Only the middle compact layer is reelable which as a continuous filament. The inner pelade layer is not reeled. Silkworm completes the spinning in 2-4 days depending upon the silkworm strain and climatic conditions provided.

During mounting, care should be taken to use the right type of moutage in convenient size and shape. There are various types of mountages viz., rotary card board mountages, bamboo chandrike, plastic collapsible mountages, bottle brush mountages, bamboo spiral mountages, farmers also use dried grass, straw, mulberry twigs etc., for the purpose. In such cases, cocooning is less, defective cocoons and floss are more, single cocoon and shell weight is less. At present only the following three types are in vogue.

### Bamboo moutage



Bamboo moutages are the traditional type use in southern India. Bamboo strips are fixed in a spiral /circular fashion on the bamboo mats. The ideal size of the moutage is 1.8 x 1.2 meters and gap between the spirals should be 5 to 6 cms. 40 to 60 larvae per sq. ft. can be mounted.

During spinning stage, two mountages placed one behind the other at an inclination of 45°, this reduces the number of bad or rejected cocoons.

### Plastic mountages



Plastic mountages are specially designed for mounting spinning larvae. The height of the corrugation should be 6 cms and each moutage should have 11 corrugations in number. The ideal size of the moutage should be 60 x 90 cms, and this can be easily placed in rearing tray. 300 to 400 worms can be mounted on these mountages.

Before mounting the larvae, old news paper should be spread below the moutage, this will help to absorb the urination, reducing the humidity build up. These types of moutage, require less mounting space and can be easily disinfected. Cocoons can be easily harvested from this type of moutage. Adequate aeration should be provided in the mounting hall.