



wheel is rotated manually to pull out the mountage from backside of the machines. The harvested and deflossed cocoons slide down along the side guards to the cleaning board where dust and undesired materials are separated from the cocoons. From cleaning board, the cocoons fall into the collection tray. The empty mountages comes out at the rear part of the machine. There is no damage or flattening of the mountages while passing through the machine.

### **Cocoon Harvesting Capacity and cost of operation**

In one hour, cocoons from 150 to 170 plastic mountages (100dfls) can be harvested. The machine can harvest 450-600 kg cocoons in a day. Three workers are required for harvesting the cocoons with machine. First worker for inserting the mountage containing the cocoons into harvester, second one for operating the hand wheel for pushing the mountage through the harvester and third worker for supporting and collecting the mountage from rear side the machine. The harvesting cost of the cocoons with machine is worked out to Rs. 2/kg of cocoons against manual harvesting of Rs. 10-12/kg.

It is the first attempt in world to design and develop a machine for harvesting silk cocoons from collapsible plastic mountages. The machine will be very useful to the silk cocoon producers for harvesting the cocoons at a faster rate and minimize the expenditure involved in manual harvesting of the silk cocoons. The machine will also reduce the drudgery involved in cocoon harvesting.

**The cocoon harvester is fabricated and marketed by:**

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## **COCOON HARVESTER FOR PLASTIC COLLAPSIBLE MOUNTAGES**



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The silk cocoon production process comprises of rearing of silkworms, which feed on mulberry leaves for 21-22 days after hatching out of eggs. When the silkworms are matured, they are placed on the mountages for spinning of the cocoons. The plastic collapsible mountages are most commonly used by the farmers in southern Indian states.

The farmers harvest cocoons manually from the plastic mountages, which is not only time consuming but also involves drudgery. Moreover, the workers are exposed to foul smell from diseased larvae, melted cocoons, dust, etc. Most of the time the women workers are engaged for cocoon harvesting. On an average, 3-5 minutes are required by a worker for harvesting cocoons from a plastic moutage.

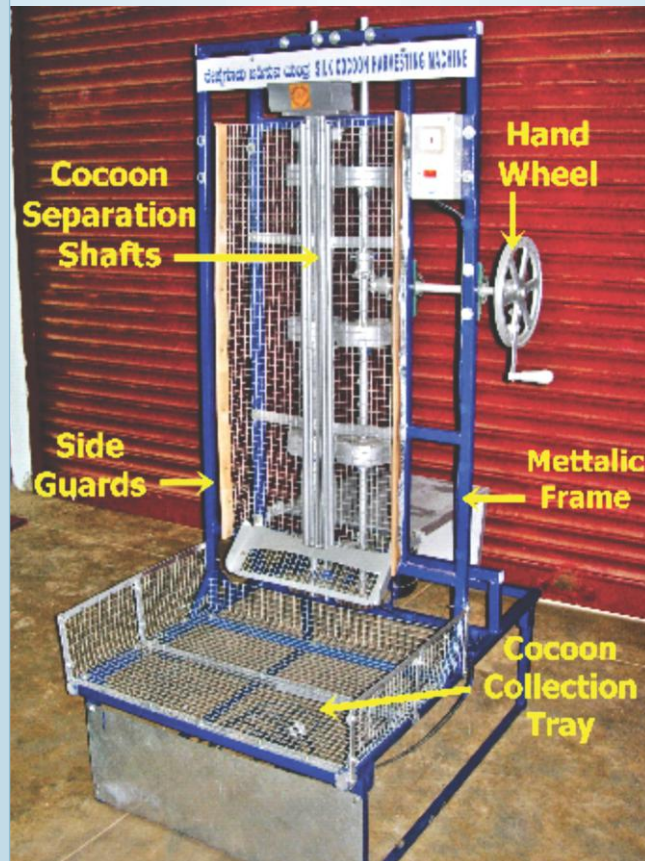


About 3-4 mandays are required to manually harvest cocoons for 100 dfls. For farmers rearing upto 200-300 dfls, the manual harvesting of the cocoons is quite feasible and economical as harvesting can be done with family members. But, when a farmer rears more than 300-400 dfls, many workers need to be engaged beside family members for harvesting of the cocoons. Therefore to

facilitate the farmers, CSRTI, Mysore has designed and developed a Cocoon harvester for plastic collapsible mountages.

#### **Description of Cocoon Harvester**

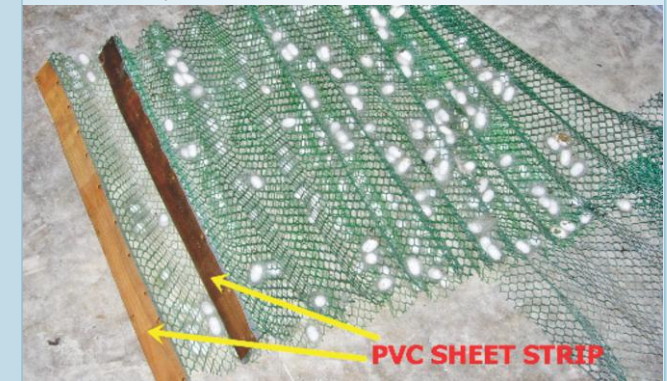
The cocoon harvester comprises of two steel shafts with rough surface rotating in opposite direction at a speed of 3,000 rpm. A plastic moutage containing cocoons is passed between these shafts which detach the cocoons from the moutage. The cocoon harvesting shafts are powered by a ¼ hp 220V 50 Hz electric motor. A set of wooden rollers are provided at the back of the machine to pull out the plastic moutage out of the machine after harvesting of the cocoons.



Two side guards of are provided on each side of the cocoon separation shafts to guide the cocoons towards the cocoon collection tray placed at the bottom of the machine. The silkworm litter, dried leaves and other materials are also separated from cocoons before they reach the collection tray. All the machine components are mounted on a metallic frame.

#### **Operation of the Cocoon Harvester**

The sides of the plastic mountages are uneven and pointed. Therefore, to facilitate easy feeding of the mountages into the harvester, 50 mm PVC strips should be fixed shall be stapled on one side of the mountages. The plastic mountages shall be slightly stretched to loose out the cocoons. The dead larvae, flimsy cocoons, dried leaf, etc. should be removed from it otherwise the good cocoons will be stained by dead larvae.



For harvesting the cocoons, the plastic collapsible mountages are inserted between the cocoon separation shafts. When the machine is switched on, the separation shafts running at high speed in opposite and outward direction detach the cocoons from the moutage and defloss them. The hand