

| S. No. | Item   | Detail   |
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| 1.     | Name of the technology   | <b>Forced convection type solar cocoon dryer</b>   |
| 2.     | Specification and salient features   | The capacity of the solar air heater based forced convection type dryer is about 50 kg cocoons/batch. It consists of cabinet type drying chamber, drying trays, solar air heaters, hot air ducts, blower and electrical backup. Drying chamber is provided with trays (30 nos) for loading the cocoons to avoid direct exposure of silk cocoons to UV radiation. Collector area of the solar air heaters is 16 m <sup>2</sup> . A centrifugal blower (with 1 hp motor) is attached with solar air heating system to draw the hot air and forced into the drying chamber. |
| 3.     | Performance result   | The drying time of the cocoons (from 61% to 12%) in the solar dryer is 16-20 h during summer and 25-30 h in autumn and winter months. Drying air temperature vary from 50-75°C during day in summer months and 40-65°C during autumn months and winter months. Quality of the silk produced from solar dried cocoon is at par with electrical oven dried cocoon in terms of strength of the thread. The solar dryer saves electrical energy to extent of 1.0 kWh/kg cocoon dried.  |
| 4.     | Cost   | Initial investment : Rs 1,50,000/-<br>Operating cost of drying: Rs 3-4/kg of dried cocoon  |
| 5.     | How the new technology will impact the income of the farmer and its benefit over conventional system | The solar dryer reduced the drying cost by 30-35% as compare to electrical oven dryer.   |
| 6.     | Social/environmental benefits  | Solar energy is freely available and pollution free. Saving of the electrical energy can be save emission the Carbon dioxide produced in the power plant.  |
| 7.     | Status of commercialization/IPR right etc.   | Ready for commercialization  |
| 8.     | If commercialized, name and address of the firm  | -  |
| 9.     | Special facilities required  | Nil  |
| 10.    | Photograph   |    |
| 11.    | Contact person   | Director,<br>Central Institute of Agricultural Engineering,<br>Nabibagh, Berasia road, Bhopal-462038 (MP)<br>Ph: 0755-2521133, email: directorciae@gmail.com   |
| 12.    | Source of availability   | -do-   |