



DENMARK

Solar Dome Dryer Technology for Chilli Farmers

Background

Chilli is an important crop of Myanmar cultivated on about 400,000 acres, 1 Million tons of yield per year and providing employment for a large number of small farmers. While most of the chillies produced in Myanmar are used for local consumption, the potential for exports is high as chilli prices have been soaring in the international markets during the recent past. Myanmar is mainly producing three different kinds of chillies – Fresh Chilli, Whole Dried Chilli and Flakes/Powder.

Dried Chilli and Processed Chilli have a good potential for growth due to increasing demand in export markets. One of the competitive advantage is that Chilli is available throughout the year in Myanmar. However, the traditional post-harvest and processing practices that are currently being utilized by farmers and processors are major constraints in achieving the product standards required to get access to the higher-value export markets.



Challenges

Farmers and Processors in Myanmar process fresh chillies using the traditional method of sun drying by spreading them on the open floor, under the sun on plastic or bamboo sheets in front of their houses. The drying conditions are not optimal for food safety.

Contamination of the chillies through livestock, dogs, rodents, birds, humans and dust cannot be avoided and fungus growth cannot be controlled. Inadequate moisture control in the rainy season and cloudy days, results in the growth of poisonous Aflatoxins.

Further, the long exposure to direct sunlight and air by the traditional open sun drying method results in a significant decline in quality and loss of colour, which fetches the product a lower price even in a domestic market.





Description of the Responsible Technology

Solar Dome Dryer Technology for enhancing food safety of Chillies and improving the product quality and potential to gain premium price.

Solar Dome Dryer reduces the post-harvest losses of Dried Chillies substantially by preventing the survival of bacteria and fungi.

Solar Dome Dryers also enable the Farmers and Processors to: precisely control the moisture content of the dried Chillis; produce Aflatoxin free product; and result in a longer shelf life. With the use of Gas Burner, Solar Dryer Dome can be used the whole year without seasonal limitation.

Business Benefits

Solar Dome Dryer technology offers the following business benefits to Chilli Farmers and Processors:

- Reduction of drying time to nearly 50%, thereby lowering the costs of labour and working capital.
- Significant reduction in the risk of spoilage and contamination caused by dust, water, pests and farm animals.
- Increase in selling price of the Dried Chillies and Chilli Flakes/Powder due to the better quality and access to export markets.
- Investment of Medium Sized SDD (8x12 m) MMK 20 million will be recovered in about 2 to 3 years.



15,000 Viss of Dried Chillies	Open Drying	Solar Dome Drying
Wastage and Labour costs	5.55 Million MMK	0.975 Million MMK
Increased revenue due to higher price	22.5 Million MMK	27 Million MMK
Increased profits per year for a capacity of 15,000 Viss per annum	9 Million MMK	

Other Benefits

- Decreased stress and workload for the farm workers about the post-harvest challenges with traditional methods of drying.
- Increased knowledge and skills for the farmers in harnessing environmentally friendly solar technologies.

For more information - Contact

Name : U Thein Hlaing
 Ph: No : 09-5188558
 Address : Shwe Hta Naung Wholesalers & Oil Processor
 Yewun Zaytan Yet, Myittha Township
 Email : kotheinhlaingkyaukse@gmail.com

Lesson Learnt

- During the off season of Chilli, using Solar Dryer Dome for drying of other crops should be considered to generate more income.
- Since the Solar Dome Dryer Technology is new to Myanmar and very few suppliers operate in the country, it is difficult to negotiate favorable prices and a high level of service and training support for Chilli Farmers and Processors.
- Need to closely monitor the quality of polycarbonate sheets, metal frames and sealants, all of which are crucial for high quality drying.
- Investment in other processing equipment is necessary to succeed with the improvement of food safety standards and enhance the overall product quality to access the premium market.