



Success story of Solar Energy in Agriculture and Establishment of Post Harvest Technology unit for primary processing and Value addition under RKVY

Introduction

Coconut is one of the major crops cultivated in Kanyakumari District. The Soil and Climatic conditions prevailing in this region are highly suited for cultivation of Coconuts and each and every household has at least one or two Coconut palms. Oil extraction from dried coconut i.e. Copra is common in this district.



Challenges faced in Drying Coconut in Traditional Method



Traditional open sun drying is the method followed with the objective of reducing the moisture content of the Coconut kernel. In this method, farmers spread coconuts on mats, cement floors, roof tops or even on soil along the road sides or in the fields for drying. During this process, the internal temperature of the coconuts rises without regulation, which destroys colour, vitamins and flavor.

It will also be contaminated by insects, birds and windborne problems like dust, dirt etc., which ultimately degrades the quality of the Copra. The duration for drying Coconut kernels into Copra is more in this method.

Initiatives by the State under RKVY

Solar energy is one of the most promising renewable energy sources. Solar driers are one of the options to overcome the problems encountered in open sun drying. Drying using Polycarbonate sheet covered green house type solar drier is the method of controlled sun drying to enhance the quality of dried products.







Agricultural Engineering Department provides Polycarbonate sheet covered green house type Solar drying units of various sizes (i.e.) floor area ranging from 400 to 1000 sq.ft area to the farmers/farmer's group with 40 percent subsidy assistance for drying various agricultural produces viz., Oil seeds like Copra, Groundnut, Gingelly etc., fruits like Banana, Amla etc., Spices like Clove, Ginger, Chillies etc., Moringa leaves, Curry leaves, Herbal leaves etc.,

Also, Agricultural Engineering Department provides 40% subsidy assistance for the purchase of Post harvest technology management (PHTM) machinery like Oil Extracting Machine, Coconut Dehusker, Flour Mill, Mini Dhal Mill, Mini Rice Mill, Rice Dehusking Machine, Pulveriser, Banana Fibre Extractor, Arecanut Dehusker, Cattle Feed Machine, Ragi Cleaner and Destoner, Groundnut Decorticator cum Grader, Groundnut Stripper etc. to enable the individual farmers to value add their produce, to increase the shelf life of the produce and get more income.

Success Story of the farmer Mr.G.Selvaraj, Thuvarancadu, Thovalai Taluk, Kanyakumari District

Thiru G.Selvaraj a farmer from Thuvarancadu village is cultivating coconut in his land. He used to dry the coconuts harvested in his own land as well as the coconuts purchased from other farmers in traditional open sun drying method, to convert them into copra. It took almost 10 days to dry the coconut kernels into copra in this method. He also found that the colour of the copra changed due to dust particles present in the atmospheric air and the duration of drying time is more in this process of drying.

Besides this, during sudden rain, in order to protect the coconut kernels, the kernels should be shifted to some other place and vice versa which increases the work load to farmers and also the labour wages.



Since, he experienced these problems and difficulties; he has approached Agricultural Engineering Department and enquired about the solar drying process and scheme.

He installed a solar drier for 620 Sq.feet at a total cost of Rs.4,89,180/- during the financial year 2019-20 with subsidy assistance of Rs.2,44,590/- through Agricultural Engineering Department.

The farmers usually extract oil from the Copra. The oil extracted through the primitive oil extracting machines gets heated up and the quality of the oil deteriorates quickly. So, the farmer purchased a wooden oil extractor at a total cost of Rs. 200600/- under "Distribution of Post Harvest Technology and Management (PHTM) Machinery " project under RKVY/NADP with subsidy assistance of Rs.1,00,300/- during the year 2020-21 through Agricultural Engineering Department. Now he is extracting oil with this wooden oil extractor and adding value to the produce and marketing in his own company name "GSR". Thus, by way of reduction in the post harvest losses of the produce and value addition of produce the farmer's income has increased considerably.



Drying coconut kernel in solar drier



Wooden oil extractor and selling oil



Impact of the RKVY Project

- 1. Drying time has decreased by about 50% when drying the produces in Solar drier.**
- 2. Coconut Kernels dried in Solar drier is retaining its natural quality and flavor.**
- 3. Increased drying efficiency and also reduced microbial content.**
- 4. Coconut kernels are also protected from flies, pest, dust and rain.**
- 5. The colour, taste, flavor, quality and texture of copra are superior to the open sun dried copra.**
- 6. The Coconut kernels dried in Solar drier are protected from being infected by**
- 7. fungus and other pests. So the chemical substances such as sulphur which causes health hazards need not be used.**
- 8. The income and the standard of living of the farmer have increased.**

Key result

As the farmer is using the Solar drier for drying the Copra and extracting oil with the new wooden oil extractor, he is adding value to the produce and marketing the product in his company name "GST". As a result, the sales turnover has increased which ultimately has increased his total income/profit and his standard of living.

