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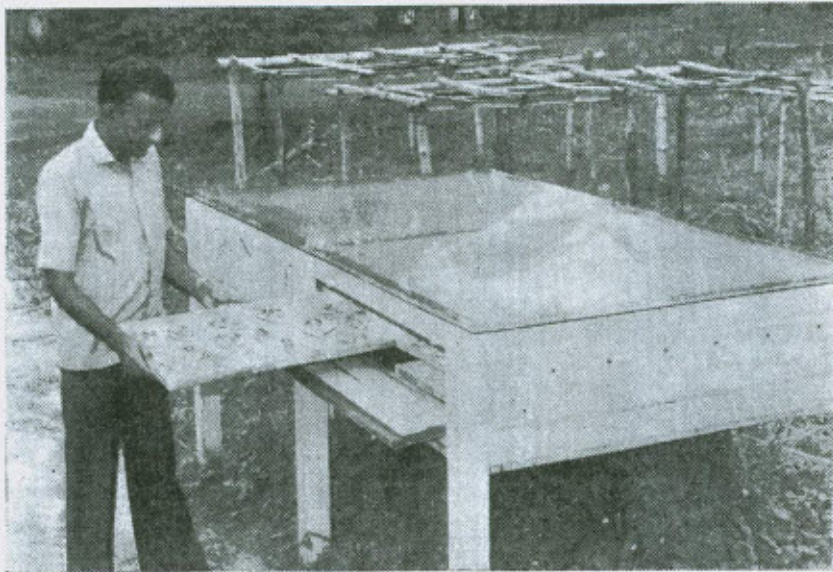
Fish technology

NEWSLETTER

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SOLAR DRIER FOR RAINY DAYS



A solar drier developed by CIFT

Sundrying is a widely accepted method for the preservation of perishable foods all over the world for centuries. It is convenient even for small scale drying at home. The reason for wide popularity of sundrying is the simplicity of the method and availability of free solar energy. However, its disadvantages are slow drying, poor hygiene and unreliable sunshine during rainy days. To overcome this CIFT has developed several solar driers which are weather dependent, but the present one developed by CIFT is weather independent.

The principle underlying the design of the drier is the black body absorption theory. The drier consists of a wooden box supported at a convenient height from the ground. It is covered with two glass plates to allow solar radiation to fall inside the box which is lined internally with black aluminium sheet. The top glass plate covers the wooden box fully in such a way that no rain water can enter into the box. The box is provided with a side door, perforated aluminium trays on supports, brass/stainless steel rods for hanging fish/food stuff for drying, and an air vent for the escape of hot air with water vapour during drying. The unit easily weathers exposure to rain and sun. The double glass plate solar energy collector aided by black body absorption

system is found to be very effective in raising the temperature of the chamber even during rainy/cloudy days when sunshine is very much reduced.

The rise in temperature inside the drying chamber is 30 to 50°C above ambient temperature during rainy and summer days. During summer, temperature of the chamber can be as high as 93-95°C at noon which can be brought down to 45-50°C (normal drying temperature) by covering the glass plate with suitable semitransparent polythene sheet/paper or cloth to filter out the solar radiations into drying chamber. Owing to compact nature of design, the material is well protected against all external agents including rain. In this system, the user is guaranteed that once

the wet material is loaded, it is well protected and can be taken out fully dried after one/two days even the weather is not favourable. As it does not require any additional power it is an ideal system for remote villages. This system is ideally suited for drying materials with low moisture content such as press cake of fish, fish products and materials which are not very heat sensitive. Drying of fatty fishes with high moisture is difficult during summer unless temperature is controlled at proper level. The cost of a 20 kg capacity unit works out as Rs. 6000/., which makes the system ideal for small cottage units. Individual families can use smaller units for drying/heating up materials of day to day use safely even in rains when sun drying is not possible.

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