

Development of solar assisted paddy husk fuelled dryer for dehydration of fruits, vegetable and spice crops (CARP funded project)

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Rural agriculture sector in developing countries such as Sri Lanka is still lacking efficient and cost effective devices for processing of agriculture produce. A dual heat dryer which utilizes rice husk and solar energy for thermal energy generation required for the drying process was designed and developed at the institute of post Harvest Technology (IPHT), Sri Lanka for dehydration of agriculture produce. By the farming community, the dryer gave promising result for adoption by the farming community. The dryer is able to generate drying air temperatures ranging from 40 °C to 110 °C thus, facilitating a variety of crop produce to be dried, such as drumsticks, bitter gourd, papaya, mango, lemon grass, mushroom and many more, with natural convection airflow. In most instances drying using solar energy alone is insufficient to accomplish the drying operation because the drying process has to be continued up to 10-15 hrs extending into the night. The incorporating of biomass energy into solar drying enables the drying process to be continued even in the absence of sunshine and thereby ensuring product quality. The benefit / cost ratio is 10:1 in dryer and hence adoption by the farming community or in rural areas is extremely feasible.