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A review of solar food dryers with thermal energy storage.

Abstract

Food is the most essential need for both human and animal survival. During food production, and in high harvesting times, the food supply can be greater than food demand. This will result in more food wastage. The use of a solar dryer will reduce food wastage and preserve food for a longer time before consumption. Solar drying improves the quality of the dried products significantly, and also reduces crop losses when compared to the traditional method of open sun drying. A lot of recent work has been carried out on solar food drying for various agricultural products using different types of solar food dryers. The use of solar food drying can be disadvantageous since the sun is not available at night or during cloudy periods. Few studies have addressed this disadvantage by combining thermal energy storage (TES) with solar food dryers for superior thermal and economic performance leading to an increase in the drying capacity. Therefore, in this review paper, an attempt has been made to summarize the past and current research in the field of solar food drying combined with thermal energy storage. With the integration of the heat storage system, agricultural foods can be dried during late evenings or at night which cannot be done with a normal solar food dryer.

Keywords: Crops; Solar Food Dryer; Thermal Energy Storage (TES)

Apply to be considered for a student ; award (Yes / No)?

Yes

Level for award;(Hons, MSc, PhD, N/A)?

Msc

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