

SOLAR AIR HEATING SYSTEM FOR PRODUCTION OF RAISINS

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ABSTRACT

Drying crops by solar energy is of great economic importance the world over, especially in India where most of the crops and grain harvests are lost to fungal and microbial attacks. These wastages could be easily prevented by proper drying, which enhances storage of crops and grains over long periods of time. India is blessed with abundant solar energy all the year round. Drying is one of the important and most energy consuming processes in the food processing, chemical, printing, fabric dyeing industries, etc., In farmer level drying is being done on open yards without any good hygienic conditions. Generally thermal energy, maintained between 45⁰C to 25⁰ C depending on the products and production methods. That energy is being produced by a conventional fuel like electricity, firewood, diesel, furnace oil, kerosene, etc. The objective of this project is to modify design of a forced convection indirect solar dryer and its performance test on Grapes. The system consists of an air heating section. The solar air dryer consists of different components such as Solar Collector Plate, Air Blower and insulating hot air Duct and its life is approximate 20 years. It offers a better control over drying and the product obtained is of better quality than sun drying. Solar Dryer Can be operated at higher temperature, recommended for deep layer drying. It is also Highly recommended for photo-sensitive substance.