

Title Using “Green Energy” and “Energy Saving Methods” in drying of fruits and vegetables
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Abstract

Thermal preservation methods like warm air drying too are all so called “high energy consuming” ones. The drying medium-namely the warm air with low relative humidity-traditionally is burning fuel oil or natural gas. Although burning natural gases emits carbon dioxide in relatively low quantity into atmosphere all the same it pollutes the environment. Furthermore, the traditional energy sources like those mentioned above are available in decreasing quantity in the nature and in increasing prices on the market. Finally, that mediums are sometimes used as political weapons too, namely their supply off for the consumers. Both their disadvantageous characteristics and arising difficulties summed up above have been demanding more and more heavily the application of so called “green energy sources” as well as “energy saving techniques”.

In the paper, for the first time, the possible types and sources of green energy will be surveyed. In this chapter, we put special respect on using solar energy and heat pump respectively or in compounding them to produce heating medium for drying and/or other operations of handling of fruits and vegetables – for example “warm water” to wash the produces – and – at the same time – cold air for pre-cooling and/or cold storing those ones. We show example and data on development and application of so called “solar air collector” for a small scale soft dryer, furthermore its compound use with traditional gas heater. Calculation on effectiveness of solar air collector will be presented on the basis of data on solar radiation measured by staff of Department of Physics and Process Control, Gödöllő, Hungary.