

ABSTRACT

Ph.D Thesis

MODELLING OF A SOLAR DRYER WITH NATURAL CONVECTION WHICH WILL BE USED AROUND AYDIN FOR FIG DRYING

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Dried fig, which is one of the top export goods of Turkey, is mostly produced in Aydın region. During this research, a fig dryer with natural convection model, that will especially enable small family enterprises to make production under hygienic conditions was designed. In the study; the effects of air temperature, wind speed, relative humidity and solar radiation on the drying process are studied. In order to determine their relations with moisture ratio multiple regression analysis were performed. Consistencies of regression equations that are found as the analysis results are checked and R^2 , root mean squared error (RMSE) and chi-square (X^2) values are examined. For these tasks, Statistica and JMP software are used. In the last part of the study is the results are discussed.

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Key Words

Dried fig, Solar Energy, Dryers, Drying, Statistical Analysis