

29. A Study on the Thermal Characteristics of the Large Low Temperature Vacuum Dryer for Biological Drying

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In tradition, there have been two kinds of drying methods, which are sun drying and artificial drying. The sun drying method which has been adopted traditionally has been replaced by the hot-air drying method which is one of the most general methods of artificial drying, with its simple drying system, low initial cost of drying plant, and easy operating method. But the hot-air drying method has some defects ; (1)much energy loss happens due to the discharge of hot air during the drying process, (2)control of drying rate is not easy on account of changing relative humidity of inlet air for uniform hot air temperature, (3)high temperature of foods in drying process brings about the production of low-grade drying products. Vacuum drying takes advantage of energy saving and mass production because it reduces the drying time by increasing the drying rate under low temperature condition.

The aim of this paper is to develop the low temperature vacuum dryer, with low initial

