RESEARCH ON THE INFLUENCE OF AIR SPEED ON THE KINETICS GREEN MALT DRYING

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Abstract

In breweries its know that malt is made from barley blank, and is a natural product rich in enzymes and vitamins. In order to optimize the work for drying green malt has been investigated in laboratory conditions. The malt subjected to drying was achieved using Jacobsen germination table. Research on dryng malt were made in the laboratory with a vertical air drying with a drying agent, heated air. The main goal in this work was to monitor the work process for drying green malt moisture of 46.31 % and a thickness of 1 cm. Dehydration was carried out at different speeds of the drying agent in order to observe how and when the evaporation of water. We have used four samples of malt obtained under the same conditions from the same batch of barley with the same parameters of final moisture, but which has been dried in the same diagram of temperatures but at different speeds of the drying agent (warm air). The speed of drying agent was 1.1 m/s, 1.5 m/s, 2.1 m/s and 2.5 m/s. The air temperature in the dryer was between 44 °C and 80°C. The time consumed for drying of each of the four samples was the same for each. It should be mentioned that all the four samples of malt had the same mass and the same parameters (moisture content W = 46.31) and temperature (21 °C) at the beginning of the drying. The results obtained at the end of the drying process shows different values of the humidity in the final malt, very close to the value of the air velocity at 1.1 m/s and 1.5 m/s. It should be mentioned that the lowest moisture content is obtained if the speed experience hot air was 2.5 m/s. The conclusion is that the drying agent used at the same temperature but with a higher circulation rate (in this case 2.5 m / s) to facilitate the evaporation of large quantities of water.

Keywords: malt, germination, moisture content, drying air velocity, dryer.