World Academy of Science, Engineering and Technology
International Journal of Biotechnology and Bioengineering
Vol:8, No:09, 2014

Drying Kinetics of Okara (Soy Pulp) Using the Multi-Commodity Heat Pump Dryer (MCHPD)

Authors : Lorcelie B. Taclan, Jolly S. Balila, Maribel Balagtas, Eunice M. Aclan, Myrtle C. Orbon, Emson Y. Taclan, Irenea A. Centeno

Abstract : Okara (soy pulp), a by-product and waste from the production of soymilk, tufo and tokwa and soybean-based vegan food products is readily available in the university thrice a week. The Food Factory owned and managed by AUP produces these food products weekly. Generally the study was conducted to determine the drying kinetics of soya pulp using the MCHPD. Specifically, it aimed to establish the time of drying; moisture loss per hour and percent moisture content of soya pulp and to establish the dried okara as an ingredient to other foods. The MCHPD is drying equipment that has an ideal drying condition of 50.00C and 10.0% relative humidity. Fresh and wet soya pulp were weighed at 1.0 kg per tray (21 drying trays), laid on the trays lined with cheese cloth. The MCHPD was set to desired drying conditions. Weight loss was monitored every hour and calculated using standard formulas. Research results indicated that the drying time for soya pulp was 19.0 hours; the % moisture content was reduced from 87.6.0% to 9.7.0% at an average moisture loss of 3.0 g/hr. The nutritional values of okara were favorably maintained with enhanced color. The dried okara was added as an ingredient to other healthy bakery products produced by the AUP Food Factory. Making use of okara would add nutritional values to other food products and would also help waste management concerns inside the university.

Keywords : okara, MCHPD, drying kinetics, nutritional values, waste management
Conference Title : ICBPE 2014 : International Conference on Biotechnology and Process Engineering
Conference Location : Los Angeles, United States
Conference Dates : September 29-30, 2014