

**Title** A Study on Continuous Drying of Chilies Using Fluidized-bed Technique  
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### **Abstract**

The objective of this research is the design and development of a continuous chili drying machine using a Fluidized-bed technique, and to study the method of the continuous drying. The drying experiment, in several conditions, determined the relationship of various factors, which were weight, moisture content, temperature, hot air velocity, moisture ratio and drying rate. The inlet hot air temperatures of the drying test were 70, 80, 90 and 100 °C, and hot air velocities were 3.5, 4.0, 4.3 and 4.5 m/s. Data obtained from experimentation showed that the weight, moisture content, moisture ratio and drying rate of chilies decreased with increasing time. Temperatures of hot air were important factors when compared with hot air velocity. But hot air velocity effected the drift of chilies particles with 30-50% in wet basis, and continuously moved from the dryer chamber with 10-40% in wet basis, in every condition of the experiment. The optimal results of this experiment were 4.5 m/s of hot air velocity, 90 °C of inlet hot air temperature, 11.74% wet basis, 13.30% dry basis of moisture content, and 0.15 of constant moisture ratio, within 3 hours and 40 minutes. Chilies were drifted or continuously moved from the dryer chamber by Fluidized-bed drying, necessary to the relativity of hot air velocity with temperature drying and several factors that controls drying within the same time frame of the experiment.