

A recirculating batch corn dryer can solve much more different moisture content of corn in ordinary batch dryer. A study of this dryer was classified into two parts. One is a mathematical simulation of dryer in order to find suitable design variable of this corn drying. Another one is the experimentation dryer in order to compare result of experimentation against with result of simulation.

The result of the mathematical simulation was achieved that significant variable in corn drying are as follows : a) temperature of hot air for corn drying should be high temperature so that using the least drying time but not over 185°F for feed stuff. b) Air flow rate for corn drying, if it is higher, drying time will be less. c) initial moisture content should not be too high for time and energy saving. If initial moisture content is higher, drying time is more. d) Batch thickness. If it is thinner, capacity of dryer is less and drying time is less too. e) Period of drying per cycle should have a short time so as to mix corn smoothly and the difference of moisture content of corn will be decreased.

The result of the simulation and the experiment are compared and achieved that moisture content of corn at any time, rate of decreasing of moisture content, outlet air temperature from dryer and drying time were much different. The most of error was happened by heat lost and some minor error by technicians.

The result of the experimentation has been found that heat lost is the only one important aspect which was made the result of the simulation deviate from the result of the experimentation. This solving method will be done by covering heat insulator and the circulation of corn should be circulated inside the dryer itself.