

Title Wet maize (*Zea mays* L.) drying under continuous nitrogen flow.  
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#### **Abstract**

The adoption of a combined system for drying and storage of grain using continuous nitrogen flow is a technological advance that combines distinct steps of pre-processing. This results in a reduction of postharvest costs, as continuous flow is applied directly to the freshly harvested grain, stored in drying silos, where it is kept until put on the market. The present work aims to evaluate the efficiency of continuous N<sub>2</sub> flow at ambient temperature, at a concentration of 99%, in the drying of freshly-harvested maize with an initial m.c. of 19.5% (wet basis). The flows applied were 4 and 8 litre/minute, and drying was achieved in a minimum of 24 h and a maximum of 144 h. As N<sub>2</sub> has low vapour pressure, it is necessary to first establish the flow pressure of the gas and then to recirculate it through the product to achieve uniform drying and avoid over drying the grain in the lower layers. From the results, it is concluded that N<sub>2</sub> had drying potential in a combined system for drying and storage of maize. Further studies have to be carried out to verify the effect of N<sub>2</sub> flow during drying, and later in storage under modified atmosphere, on toxigenic moulds and insect pests.