

Abstract

Flint and dent corn were forced air-dried at 70–110 °C to a final moisture of about 12.0%. The rates of water absorption of both hybrids in the presence of 0.25% SO₂ aqueous solution were evaluated in terms of the diffusion coefficient. Drying temperature affected negatively the rate of absorption of both hybrids. A laboratory wet-milling procedure was developed to evaluate starch recovery of corn samples. For flint corn starch recovery drop from 96.5% (undried) to 82% (dried at 110 °C); for dent corn the drop was from 97.5% to 90%. The starch isolated from air-dried corn contained greater amounts of protein than starch originated from undried corn. The effect was more marked for flint than for dent corn and increased with the drying temperature. Sorptional characteristics of starch were practically unaffected by drying temperature. DSC transition temperatures of starch showed an increasing tendency with drying temperature. For both hybrids the gelatinization enthalpy of starch decreased with the increasing of drying temperature, the effect being more marked for flint than for dent corn.