Abstract

Rice flour, corn flour and deoiled rice bran blends were used to prepare ready-to-eat extrudates
at barrel temperature (1100C, 1200C and 1300C) and moisture content (14%, 15% and 16%). A three-level, two-factor central composite rotatable design was employed to investigate the effect of temperature and feed moisture content and their interactions, on the mechanical hardness of extruded product. It was found that the increase in feed moisture content leads to increase in hardness of extrudates while increasing temperature leads to decrease in hardness of product. A numerical optimization technique was used to obtain compromised optimum processing conditions of barrel temperature (1200C) and moisture content (15%). A good agreement between the predicted (14.91N) and actual value (15.105N) of the response confirms the validation of RSM model. The surface morphology of extrudates, examined through scanning electron microscopy (SEM) showed large number of sheared and flattened granules at varied temperature. The more damage of starch granules was observed at higher temperature i.e. at 1300C.

References

Textural and Micro Structural Properties of Extruded Snack Prepared from Rice Flour, Corn Flour and Deoiled Rice Bran by Twin Screw Extrusion


Index Terms

Computer Science  Applied Science

Keywords

Rsm  Barrel Temperature  Hardness  Sem  Extruded Product.