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Effect of Extrusion Parameters on the Rheological Properties of Ready-To-Eat Extrudates Developed from De-Oiled Rice Bran

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Abstract : Mechanical properties of ready-to-eat extrudates are perceived by the consumers as one of the quality criteria. Texture quality of any product has a strong influence on the sensory evaluation as well as on the acceptability of the product. The main texture characteristics influencing the product acceptability are crispness, elasticity, hardness and softness. In the present work, the authors investigated one of the most important textural characteristics of extrudates i.e. hardness. A five-level, four-factor central composite rotatable design was employed to investigate the effect of temperature, screw speed, feed moisture content and feed composition mainly rice bran content and their interactions, on the mechanical hardness of extrudates. Among these, feed moisture was found to be a prominent factor affecting the product hardness. It was found that with the increase of feed moisture content, the rice bran proportion leads to increase in hardness of extrudates whereas the increase of temperature leads to decrease of hardness of product. A good agreement between the predicted (26.49 N) and actual value (28.73N) of the response confirms the validation of response surface methodology (RSM)-model.

Keywords : deoiled rice bran, extrusion, rheological properties, RSM
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