

鸡肉-大米膨化食品双螺杆挤压工艺参数的优化研究

Optimization of extrusion cooking conditions of extrusion-cooked chicken-rice snack with twin-screw extruder

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中文摘要:

以鲜鸡肉和大米为原料,对双螺杆挤压工艺条件进行研究,以期开发出新型鸡肉挤压膨化休闲食品,提高鸡肉的附加值。试验采用可旋转中心组合设计,综合考察物料湿度(X_1)、机筒温度(X_2)和螺杆转速(X_3)三个变量对糊化率(Y)的影响。在此基础上由试验数据推导出描述糊化率的二次回归模型,并对变量进行响应面分析,得出最佳挤压工艺条件为:物料湿度35%、机筒温度123℃、螺杆转速220 r/min。

英文摘要:

Based on chicken and rice as raw materials, the extrusion cooking conditions of extrusion-cooked chicken-rice snack were studied with twin-screw extruder in order to develop a new kind of snack and to heighten the additional value of chicken. A central composite rotatable design was adopted to analyze effects of material moisture content (X_1), cooking temperature (X_2) and screw speed (X_3) on degree of gelatinization (Y). Based on this approach and experimental data, the quadratic regression model of gelatinization was deduced. Then analyses of variance were conducted with response surface analysis, and the optimal extrusion cooking conditions were obtained as follows: material moisture content was 35%, cooking temperature was 123℃, and screw speed was 220 r/min.

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