

单螺杆挤压机对农产品加工因素的优化

Optimization of Processing Factors of Agricultural Product with Single-screw Extruder

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中文摘要:

在农产品和食品挤压机加工过程中,由于各种因素的变化,对产品的膨化质量有很大影响。通过挤压机螺杆与螺套之间的间隙、螺杆转速和物料含水率的变化,对产品的膨化指数,挤压机的生产率和功耗进行测定,分析在不同工况下挤压的工作情况以及产品特性。试验结果表明,影响试验指标的主要因素是螺杆与螺套之间的间隙,试验因素主次排列为间隙,含水率和转速,其较优组合为螺杆螺套之间的间隙0.75mm,螺杆转速300r/min,物料含水率18%。

英文摘要:

In agricultural product and food extruding process, changes of various factors such as clearance between the screw and its sleeve, rotation speed of the screw and moisture content of materials have great effect on expansion quality. The expansion index of product, the productivity and power consumption of the extruder were measured. Performance of the extruder and the feature of the product under various working conditions are analyzed. The experiment results show that the most important factor affecting expansion index is the clearance between the screw and its sleeve, and the important order of factors is the clearance, moisture content of materials and rotation speed of the screw. The optimized combination of factors is the clearance 0.75 mm, the rotation speed 300 rpm and moisture content 18%.

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