

小麦胚芽的微波在线稳定化试验 Study on Technology of Stabilized Storage of Wheat Germ by On-line Microwave Processing

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摘要: 麦胚具有快速酸败变质的特性, 为提高麦胚稳定性, 利用研发的麦胚在线微波稳定化处理工艺和装备, 选取不同微波功率和处理时间等工艺参数进行试验, 研究不同条件对麦胚稳定化效果的影响。结果表明, 采用微波功率2.8kW、时间4min处理的麦胚, 在30d加速贮藏后, 脂肪酶相对酶活17.63%, 过氧化值3.81mmol/kg, 酸价14.65mg/g, VE损失率5.29%, 氮溶解指数51.10%, 含水率3.72%, 脂肪酸组成和相对含量未产生明显变化。研究表明, 该微波装备能与面粉生产线相配套, 有效钝化麦胚脂肪酶, 保持麦胚营养, 延长保质期, 且具有节能降耗的优点。Microwave processing technology and equipment were developed to solve the problem of wheat germ's easily acidification and deterioration, aiming at improving the storage stability of wheat germ and better prepare for its further processing. With this developed equipment, microwaves of different power and processing time were selected to test their respective influence on the wheat germ stabilization. The result showed that processed with microwave of 2.8kW for 4 minutes, wheat germ relative lipase activity is 17.63%, peroxide value is 3.81mmol/kg, acid value is 14.65mg/g, VE loss is 5.29%, NSI is 51.10%, moisture content is 3.72%, and no distinct change in its fatty acid composition and relative content. Furthermore, the equipment developed was tested to be collocated with wheat flour product line with the daily capacity of producing 300t. This equipment effectively passivates lipase in wheat germ, preserves various nutrition, and lengthens quality guaranteed time at the cost of lower power.

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