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不同干燥方法对罗非鱼片品质和微观结构的影响

Effects of drying methods on qualities and microstructure of tilapia fillet

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中文摘要:

为了解不同干燥方法对罗非鱼片干燥后品质和微观结构的影响,采用热风干燥、真空冷冻干燥、超临界CO₂干燥等3种方法对罗非鱼片进行干燥,研究其对营养成分、微生物、感官特征、复水性能、质构特征、微观结构等的影响。结果表明:与热风干燥和真空冷冻干燥相比,超临界CO₂干燥的鱼片,粗蛋白含量高,脂肪含量较低;且在杀灭微生物方面有着显著的优势;但其鱼片的收缩率和复水特性稍差于真空冷冻干燥,而其感官、质构和微观结构等品质均与真空冷冻干燥的相当,而所有品质都明显优于热风干燥;结合经济性等综合考虑,罗非鱼片应用超临界CO₂干燥是可行的。研究结果可为罗非鱼片干燥技术的选择提供参考。

英文摘要:

Tilapia fillets were dried by hot-air drying, vacuum freezing drying and supercritical carbon dioxide drying and the effects of three drying methods on qualities and microstructure of tilapia fillets were investigated. Qualities (nutrition, microbe, sensory, rehydration, texture) and microstructure of tilapia fillets were determined and analyzed. The results showed that, compared with hot air drying and vacuum freezing drying, the content of crude protein of tilapia fillet was higher and the content of its crude fat was lower by supercritical carbon dioxide drying. Supercritical carbon dioxide drying had the better effect of sterilization than hot air drying and vacuum freezing drying. Shrinkage and rehydration rates of tilapia fillet by supercritical carbon dioxide drying were slightly less than those by vacuum freezing drying. But sensory, texture and microstructure of tilapia fillet by supercritical carbon dioxide drying were similar to those by vacuum freezing drying. The qualities of tilapia fillet by supercritical carbon dioxide drying were much better than those by hot air drying. From the view of drying economics, supercritical carbon dioxide drying of tilapia fillet is feasible. The results can provide a reference for choosing the drying method of tilapia fillet.

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