

热泵干燥过程中竹荚鱼水分迁移特性 Characteristics of Moisture Migration during Drying of Horse Mackerel by Heat Pump Dehumidifier

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关键词: 竹荚鱼 热泵干燥 水分迁移 含水率梯度 温度分布

摘要: 以竹荚鱼为试验材料, 对热泵干燥过程中鱼片的内部温度分布和水分迁移特性进行了研究。结果表明: 热泵干过程的大部分时段中(干燥中、后期), 竹荚鱼片内部温度分布比较均匀, 基本未呈现出整体性的温度梯度。干燥过程中, 竹荚鱼片沿厚度方向存在含水率梯度, 并且随着干燥温度、风速的变化而变化。热泵干燥前期, 鱼体干燥速度取决于鱼体表面水分蒸发的速度; 干燥后期, 干燥速度取决于鱼体内部水分移动的速度。热泵干燥过程中, 竹荚鱼片的水分迁移主要是含水率梯度的作用。 With horse mackerel as experimental material, the temperature distribution and migration characteristic of moisture during fish fillets drying by heat pump dehumidifier (HPD) were studied. The results showed that temperature distribution inside horse mackerel fillets is uniform during the great part of drying periods, and the regular temperature gradient along the direction of fish fillets thickness doesn't occur. During horse mackerel drying by HPD, an obvious moisture gradient along the direction of thickness of fillets is found with drying temperature and velocity. In the initial stage of drying, drying rate of fish fillets is mainly depended on moisture evaporation. In the next stage of drying, drying rate of fish fillets is mainly depended on moisture diffusion. The moisture migration is mainly controlled by moisture content gradient.

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