热泵干燥北极虾和鱼块的干燥特性研究(英文)

Drying characteristics of heat pump dried shrimp (*Pandalus borealis*) and fish cake

投稿时间：2005-10-10　　最后修改时间：2006-3-10

稿件编号：20060939

中文关键词：热泵干燥； 干燥特性； 北极虾*(Pandalus borealis)*； 鱼块； 干燥模型

英文关键词：heat pump drying; drying characteristics; shrimp*(Pandalus borealis)*; fish cake; drying model

基金项目：This study was supported by UNU Fisheries Training Programme (Iceland)

作者	单位
张国琛	大连水产学院机械工程学院,大连 116023
Sigurjón Arason	冰岛国家渔业实验室, P.O.Box 1405,雷克雅未克, 冰岛;冰岛大学食品科学系, 雷克雅未克, 冰岛
Sveinn Víkingur árnason	冰岛国家渔业实验室, P.O.Box 1405,雷克雅未克, 冰岛

中文摘要：

利用热泵干燥机，分别在-2～0℃和20℃两种温度下对北极虾整虾、去头北极虾、去壳北极虾和尺寸分别为50 mm(直径)×(7～9)mm(厚度)和50 mm×(14～18) mm的鱼块进行了干燥研究。结果显示，虾的状态(有壳或无壳、有头或无头)和鱼块的厚度对其干燥特性有着显著影响。无论干燥温度为-2～0℃还是20℃，去壳虾所需干燥时间均最少，去头虾的干燥速度均大于整虾；薄鱼块的干燥速度在20℃显著大于厚鱼块的干燥速度。扩散模型*MR=Aexp(-kt)*可以很好地描述热泵干燥北极虾和鱼块的干燥特性，根据试验结果建立的一系列统计回归模型显示，当热泵干燥温度由-2～0℃增加到20℃时，干燥速度和K值显著增加，干燥时间明显减小。

英文摘要：

The peeled, headed and whole shrimps*(Pandalus borealis)* as well as the fish cake of 50 mm(diameter)×(7～9) mm(thickness) and 50 mm×(14～18)mm were dried in a heat pump dryer at (-2～0)℃ and 20℃. The results showed that the drying characteristics of shrimp and fish cake were significantly affected by the handling conditions(with shell or without shell, with head or without head) of shrimp and the thickness of fish cake. The peeled shrimp has the shortest drying time and the headed shrimp is dried faster than the whole shrimp both at the drying temperature of (-2～0)℃ and 20℃, and the drying rate of thin fish cake is faster than thick fish cake especially at 20℃. The drying characteristics could be well described by diffusion model*(MR=Aexp(-kt))*. A series of empirical regression equations have been established and these models indicate that increasing the drying temperature from (-2～0)℃ to 20℃ significantly enhanced the drying rate and k-values, and the drying time decreased greatly.

查看全文　　关闭　　下载PDF阅读器