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## 打磨法提取亚麻籽胶粉的工艺

### Process of extracting flaxseed gum powder by abrasion

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中文摘要:

为提高亚麻籽综合加工效益,解决现有亚麻籽胶生产存在问题,在对亚麻籽结构充分了解基础上,利用亚麻籽胶分布在亚麻籽外表面的结构特点,提出采用高速旋转砂辊对亚麻籽表面进行打磨提取亚麻籽胶粉的技术设想,并借助实验砂辊碾米机开展研究。结果表明:采用砂辊打磨亚麻籽在控制亚麻籽装填率在40%~80%时打磨均能够顺利获取亚麻籽胶粉,说明打磨提取亚麻籽胶粉技术可行;在装填率40%、打磨时间200 s脱脂胶粉得率最高达6.06%±0.51%;在装填率80%情况下,打磨设备提取的脱脂亚麻籽胶粉产量最高,打磨时间200 s,胶粉黏度测定值为(5 200±680) mPa.s,高于现有市售干法亚麻籽胶产品黏度而低于市售湿法亚麻籽胶产品黏度;通过对比检测打磨前后压榨亚麻籽油的色泽、气滋味、酸价和过氧化物指标,打磨提取亚麻籽胶粉过程对亚麻籽压榨油品质无明显影响。采用先打磨提取部分亚麻籽胶粉再进行压榨制油加工,将增加亚麻籽加工产品品种,提高加工效益。

英文摘要:

Abstract: In order to improve the comprehensive utilization benefits of flaxseed processing, and to resolve some outstanding problems in the present processing of flaxseed gum extraction, the ideal of obtaining flaxseed gum by means of a rotating sand roller abrading of the surface of flaxseeds was conceived on the basis of the structural characteristics that the flaxseed gum is in the outermost layer of flaxseeds, and of the working principle that the high-speed rotating sand roller can abrade the surface of materials. It was tested with a sand roller rice mill used in a laboratory. The results show that: using the sand roller grinding, controlling flaxseed filling rate at 40%-80%, were able to obtain flaxseed gum powder successfully, extraction of flaxseed gum powder by grinding technology is feasible; at the loading rate 40%, grinding time 200s, defatted flaxseed gum powder rate was the highest at 6.06% ± 0.51%; at the loading rate 80%, defatted flaxseed gum yield of the grinding equipment was the highest, at grinding time 200s, viscosity of the flaxseed gum powder was (5200 ± 680) mPa.s, much higher than the current commercially available dry flaxseed gum product viscosity and lower than that of commercially available wet flaxseed gum product viscosity. By contrast detection color, taste, acid value and peroxide value of the pressed flaxseed oil before and after grinding, grinding process has no obvious effect on pressing flaxseed oil quality. Using grinding method extraction of flaxseed gum powder first and then pressing flaxseed oil, will increase flaxseed processed products, and improve the processing benefit.

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