

阮竞兰,向光波,程相法.胶辊砻谷机性能参数试验与优化[J].农业工程学报,2011,27(5):353-357

胶辊砻谷机性能参数试验与优化

Experiments and optimization of performance parameters on rubber roll husker

投稿时间: 8/5/2010 最后修改时间: 5/2/2011

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英文关键词: [agriculture products](#) [processing](#) [design](#) [rubber roll husker](#) [roller pressure](#) [line speed](#) [flow](#) [breakage rate](#)

基金项目:

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中文摘要:

为了提高胶辊砻谷机的工艺性能,确定胶辊砻谷机的最佳工作参数,对胶辊砻谷机的工作参数与工艺效果进行了试验与优化。研究表明,在固定流量、快辊线速和线速差的情况下,当胶辊砻谷机辊压为7.0 kg/cm时,脱壳率93.35%、产量146.41 kg/cm·h、胶耗4.63 g、破碎率4.66%等工艺参数都达到最优。同理,在固定其他工作参数不变的情况下,快辊线速为18.47 m/s时,破碎率5.29%、产量142.16 kg/cm·h和胶耗3.22 g等工艺参数都取得最优;流量为172.31 kg/cm·h时,产量148.36 kg/cm·h、破碎率4.63%、胶耗3.62g等均取得最优;线速差为3.16 m/s时,脱壳率90.83%、胶耗4.51 g、破碎率4.41%等均达到最优值。研究结果可为胶辊砻谷机的设计提供重要依据。

英文摘要:

To improve the process performance of the rubber roll husker and determine the optimum technical parameters, optimization on the technical parameters and the experiments on the process effect were carried out. The results indicated that the process parameters were all optimal, such as husked rice ratio (93.35%), output(146.41 kg/cm·h), rubber consumption (4.63 g) and percentage of raw broken (4.66%) when the roll pressure of rubber roll husker was 7.0 kg/cm on the condition that feeding, fast linear speed and difference of linear speed were all invariable. By the same ruler, when the fast linear speed was 18.47m/s, the process parameters of percentage of raw broken, output and rubber consumption were optimal, which were 5.29%, 142.16 kg/cm·h and 148.36 kg/cm·h respectively. When the feeding was 172.31 kg/cm·h, the optimal results were achieved which were 148.36 kg/cm·h in output, 4.63% in percentage of raw broken, and 3.62 g in rubber consumption; And when the difference of linear speed was 3.16 m/s, the optimal results were obtained, which were 90.83% in husked rice ratio, 4.51 g in rubber consumption and 4.41% in percentage of raw broken. The research results can offer references for the design of rubber roll huskers.

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