苜蓿转筒干燥时茎叶分离出口气流场模拟与优化 Simulation and Optimization of the Wind Field of the Separation Exit of Alfalfa Rotary Drum Dryer

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摘 要： 针对转筒干燥苜蓿的茎叶垂直分离原理，基于90℃左右干燥气流的风速条件，应用CFD技术对三回程苜蓿干燥分离转筒出口附近的气流场进行了模拟和优化设计。通过速度云图分析，获得了在总体结构不变的情况下中筒末端和外筒末端之间相对适宜的尺寸。通过气流场速度矢量分析，提出了改进茎叶分离效率的方案。 The vertical separation principle of alfalfa in alfalfa rotary drum dryer was studied, and the wind field of separation exit of the three pass rotary drum dryer was optimized by using CFD based on the range of separation velocity when the gas temperature was about 90℃. An optimum structural dimension between the bottoms of the middle and outer drums of a triple pass rotary drum dryer, modified to achieve drying and leaf-stem separation of alfalfa in one process, was recommended based on the CFD simulation results of a series of the contours of velocity and wind field of velocity vectors at different dimensional conditions.

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