INTEGRATING A DEHULLING MACHINE WITH SHAKERS TO IMPROVE THE DEHULLING PROCESS

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Abstract

The cotton industry has been an integral part of U.S. agriculture for more than two centuries. It has provided us with more than just clothing; it has given us and livestock a protein rich food source as well as enhancing fertilizer by keeping in moisture, and it can be used in cooking and cosmetics as well. This project involves improving the process in which the cottonseed is extracted from their hulls or shell. The goal is to speed up the process and to create a machine that can mass produce cottonseed for its many uses on a larger scale. The methodology consists of integrating a dehulling machine with shakers and to improve the machines where needed to minimize the constant labor involvement with transporting the materials to the different machines or adjusting the machines. Improvement of efficiency is another goal of the project specifically in getting the whole cottonseeds out of its kernels. Some tests were performed to stabilize the shaker, improve the efficiency of cracking the kernels in the dehulling machine, and overall integrating the two systems together by having the seeds from the dehuller feed down into the shaker in one easier process. Analytical data was used to ultimately up-scale the process into mass production for the future. Upon completion of the design it is expected that the propose approach can improve the process by at least half the time and become more efficient.