عنوان مقاله:

Simulation and Experiment on Conveying Device of Cutting System of Small Sugarcane Harvester

محل انتشار:

ماهنامه بین المللی مهندسی, دوره 26, شماره 9 (سال: 1392)

تعداد صفحات اصل مقاله: 10

نویسندگان:

sh li - *College of Physical and Material, Qinzhou University, ۵۳۵۰۰۰, Qinzhou , Guangxi, China*

zh shen - *College of Light Industry and Food Engineering, Guangxi University, ۵۳۰۰۰۴ , Nanning, China*

f ma - *College of Mechanical Engineering, Guangxi University, Nanning ۵۳۰۰۰۴, China*

j gao - *College of Mechanical Engineering, Guangxi University, Nanning ۵۳۰۰۰۴, China*

خلاصه مقاله:

The main problem is less efficiency and blocking during sugarcane harvesting in hilly areas. This paper researched the cutting and transporting system of a small sugarcane harvester using virtual prototypetechnology. The dynamics simulation analyses were carried out to study the transporting status withdifferent friction coefficients between the sugarcane and the spiral and different numbers of the rubber around the drum. The virtual test results show that increasing the friction coefficient can enhance the transporting speed of the sugarcane, and adding more rubbers on the drum can also increase the speedfurther. Then, the paper analyzed the logistic process of the cut sugarcane with different friction coefficients between the sugarcane and the spiral and four rubbers mounted on the drum based on the high-speed photography in the field simulation test. The results also show that the transporting speed ofthe cut sugarcane can increase 40% when the friction coefficient and the rubbers are added. Thesimulation and field test results verify that the virtual prototype technology can provide reference for the development of the physical prototype

کلمات کلیدی:

Sugarcane Harvester,Cutting System,Conveying System,Virtual Simulation