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手推式矮丛蓝莓采摘机设计与试验

Design and experiment of hand-push lowbush blueberry picking machine

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中文摘要:

为实现矮丛蓝莓收获的机械化,降低工人的劳动强度,设计一款手推式矮丛蓝莓采摘机。该文首先对收获机理分析,得到了设计依据。应用ADAMS对关键部位进行仿真,确定采摘部分工作参数,为传动系统设计提供了依据,并试制样机。应用样机进行采摘试验,分析试验数据得到,单台采摘量为12kg/h,果实损坏率10%,采净率86%。分析了影响采摘效率的因素,并提出改进措施。

英文摘要:

To realize the mechanization of blueberry harvest and reduce the workers' labor intensity, a hand-push picking machine for the lowbush blueberry was designed. The design basis was got by analyzing the mechanism of the harvesting machine, and then the simulation of the key parts was did with ADAMS to determine working parameters of the picking mechanism, according that, the transmission system could be designed. At last the picking machine was made. The experimental data were obtained from the picking experiments using the prototype. The picking rate of one machine was 12 kg/h, and the damage and the clearly picking rates were 10% and 86% respectively. Finally influence factors of the low picking efficiency were summarized and improvement measures were put forward.

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