

韩 豹,申建英,李悦梅.3ZCF-7700型多功能中耕除草机设计与试验[J].农业工程学报,2011,27(1):124-129

3ZCF-7700型多功能中耕除草机设计与试验

Design and experiment on 3ZCF-7700 multi-functional weeding-cultivating machine

投稿时间: 3/10/2010 最后修改时间: 5/25/2010

中文关键词: [农业机械](#) [设计](#) [杂草防治](#) [旱作农业](#) [苗间松土除草](#)

英文关键词: [agricultural machinery](#) [design](#) [weed control](#) [dry farming](#) [scarification and weeding between seedlings](#)

基金项目: 国家“十一五”科技支撑项目(项目编号2006BAD11A05-06)

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摘要点击次数: 374

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中文摘要:

为了解决机械除草过程中作物苗间与秧苗附近杂草较难铲除以及伤苗严重和除净率低等问题, 研制出与大功率拖拉机配套的3ZCF-7700型多功能中耕除草机。该机在玉米、大豆等作物的中耕作业过程中能完成侧深施肥、苗间松土除草、起垄、培土和深松等工序的作业。该文论述了3ZCF-7700型多功能中耕除草机的结构、工作原理及关键部件的设计, 田间试验结果表明: 用于玉米苗间杂草除净率为76%, 行间杂草除净率95.7%, 伤苗率小于4.4%, 其它各项技术性能指标均符合设计要求。该机可满足旱田作物中耕管理作业的农艺要求。

英文摘要:

In order to solve problems which existed in the former designed weeding-cultivating machines, such as injuring seedlings seriously, weeding difficultly and the low weeding rate on the course of mechanical weeding between crop seedlings, 3ZCF-7700 multi-functional weeding-cultivating machine matching with high-power tractors was developed. The machine which was suitable for cultivating in the field of corn, soybean and beat could finish the processes of deep side fertilizing, scarification and weeding between seedlings, earth up, ridging and deep loosening. Its main structure, working principle and the design of critical components were briefly described. The experimental results of the machine in the corn field showed that the average weeding rate between seedlings was 76%, the injury seedling rate was less than 4.4%, the average weeding rate between rows was 95.7%, and the other various performances met the design requirements. The machine can satisfy with the agronomic requirements of intertillage management in dry farmland.

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