

免耕播种机防堵技术研究现状与发展趋势

Present situations and prospects of anti-blocking technology of no-tillage planter

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作者	单位
廖庆喜	华中农业大学工程技术学院, 武汉 430070
高焕文	中国农业大学工学院, 北京 100083
舒彩霞	华中农业大学工程技术学院, 武汉 430070

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中文摘要:

免耕播种机在残茬覆盖地作业是否具备良好的防堵性能,已成为影响免耕播种机生产效率和播种质量的关键因素之一。该文系统分析了免耕播种机防堵的必要性和防堵技术研究现状,提出了免耕播种机应着手找准防堵技术的切入点,加强免耕播种机防堵技术与作业工艺措施有机结合,加强作物残茬的几何特性和机械特性的基础研究,并降低防堵装置功率消耗和转速,提高定向抛撒能力和秸秆覆盖量适应性以及具有安全性能好和作业粉尘低等方面研究,同时加强利用高速摄影和虚拟仪器等现代先进测试仪器与技术开展秸秆抛撒运动规律研究,以探讨改善防堵性能的途径,提高免耕播种机播种质量和生产效率,加快旱地农业保护性耕作技术的推广应用。

英文摘要:

A better anti-blocking capability of no-tillage planter in the stubble mulch farmland has become one key factor of production efficiency and seeding quality. Anti-blocking necessities and research status of anti-blocking technology for no-tillage planter were analyzed in this paper, some research directions of anti-blocking technology for no-tillage planter were put forward, such as finding the key point of anti-blocking technology of no-tillage planter, strengthening the combination between anti-blocking technology of no-tillage planter and operation technological measurement, strengthening the basic research of mechanical and geometrical characteristic of crop stubble and reducing power consumption and rotation speed of anti-blocking mechanism, and increasing capacity of directional throwing, and improving flexibility of all kinds of stubble mulch farmland and security and so on. And some throwing movement rules should be strengthened to research by modern testing instrument and technology such as virtual instrument technology and high-speed photography, in order to research reforming approach to anti-blocking capability, and improve production efficiency and seeding quality of no-tillage planter and quicken spread and application of conservation tillage technology for dry-land farming.

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