

## 精准农业技术系统集成在新疆棉花种植中的应用

### Application of the integrated precision farming system of cotton growing in Xinjiang Region

投稿时间: 2004-11-3 最后修改时间: 2005-5-11

稿件编号: 20050818

中文关键词: 棉花; 精准种植; 系统集成; 新疆

英文关键词: cotton; precision farming system; system integration; Xinjiang

基金项目: 国家863计划“数字农业”专项(2003AA209091); 中国科学院知识创新项目(K2CX2-404-4)

作者	单位
孙莉	中国科学院新疆生态与地理研究所, 乌鲁木齐 830011
张清	中国科学院新疆生态与地理研究所, 乌鲁木齐 830011
陈曦	中国科学院新疆生态与地理研究所, 乌鲁木齐 830011
王军	新疆石河子科学技术委员会, 石河子 832000
包安明	中国科学院新疆生态与地理研究所, 乌鲁木齐 830011
张斌	新疆石河子科学技术委员会, 石河子 832000

摘要点击次数: 164

全文下载次数: 69

中文摘要:

根据新疆生产建设兵团农业机械化、集约化、规模化生产的特点, 结合新疆兵团棉花种植的实际情况和基础条件, 利用GIS、RS、GPS、ES、MS等最新技术在棉花精准种植试验区开展研究工作。跟踪国内外精准农业的最新研究发展水平, 在数字农业技术创新的基础上, 整合国内已有的研究成果, 利用信息技术对新疆现有的农业生产设备进行组装配套, 研制、开发、集成具有新疆特色的数字农业技术体系与推广模式, 进行规模化应用示范。在农田信息采集、处理和实施系统3个方面进行棉花精准种植信息系统集成研究, 取得了初步成果: 利用自主开发与引进的硬件平台, 组装集成的配套技术体系, 在棉花的精准播种、节水灌溉、变量施肥、病虫害预测预报与防治、长势监测等产前、产中管理决策中应用, 形成一套适宜新疆的先进成熟的棉花生产管理智能化决策系统, 同时与变量作业机具组装配套进行示范, 该成果可为新疆及其它地区棉花精准种植提供参考模式, 具有重大的推广意义, 市场前景广阔。

英文摘要:

A study on the precision cotton growing in Shihezi Experimental Area in Xinjiang was carried out based on the characteristics of the mechanized, intensive and large-scaled production and the consideration of the actuality and basic conditions of cotton growing in Xinjiang Group Company of Production and Construction by using the new technology, conception, ways and means of GIS, RS, GPS, ES and MS. After following up the advanced study achievements and development level of domestic and foreign precision agriculture, the characteristic digital farming system and popularization mode were developed by completing, developing and integrating the available farming devices in Xinjiang based on the innovation of digital farming technologies and the integration of domestic available research achievements and technologies as well as the information technology, and a large-scaled application demonstration was carried out. After making great efforts under the cooperation with some units, a study on the integration of information system for the precision cotton growing was carried out in three aspects including the farmland information collection system, information processing system and implementation system, and some preliminary achievements have been achieved. These achievements were applied in the management decision-making of the integrated and completed technological system, precision cotton seeding, water-saving irrigation, variable fertilization, prediction and control of plant diseases and insect pests, cotton growth monitoring, etc. based on the developed and introduced hardware platform. Thus, a set of advanced, matured and intellectualized decision-making systems for precision cotton growing and management were formed, which were suitable for cotton growing in Xinjiang, and those were integrated with the variable farming devices in the demonstration. The achievements in this study can be referred in precision cotton growing in Xinjiang and other regions in China, they have popularization significances in Xinjiang and even in other provinces of China, and the market potential is huge.

您是第606958位访问者

主办单位：中国农业工程学会 单位地址：北京朝阳区麦子店街41号

服务热线：010-65929451 传真：010-65929451 邮编：100026 Email: [tcsae@tcsae.org](mailto:tcsae@tcsae.org)

本系统由北京勤云科技发展有限公司设计