

中国科技核心期刊 (CSTPCD) 中国农林核心期刊 RCCSE中国准核心学术期刊
中国学术期刊网络出版总库 (CNKI数据库) 收录 万方数据库收录

ISSN 2095-1795
CN 11-6025/S

农业工程

3

2021

AGRICULTURAL ENGINEERING

第11卷 Vol.11



www.d1ae.com

ISSN 2095-1795



农业工程杂志社

NONGYE GONGCHENG

中国农业机械化科学研究院主管 北京卓众出版有限公司主办

万方数据

农业工程

NONGYE GONGCHENG

2021年 第11卷 第3期 (总第89期)

目次

高端访谈

陈学庚院士：扎根边疆 60 载不懈怠，致力棉花全程机械化迈上新征程 王艳红 (2)

装备与机械化

大田无人农业发展现状与实现路径 徐 峰 朱慧琴 程胜男 彭俊明 (11)

果园升降作业平台国内外发展现状与对策建议 张鲁云 孟祥金 段爱国 殷彩云 韩保保 (15)

智能水肥机控制系统关键技术装备研制 韩卫华 (20)

《非道路柴油移动机械污染物排放控制技术要求》浅析
..... 刘顺利 王明达 纪 亮 李 刚 王 瑾 吉 喆 (25)

摩擦传动在行走机械中的应用 洪 曼 王 志 田 甜 刘学文 (29)

播种机防缠绕装置设计与应用 王海江 (34)

信息与电气化

母猪智能化精准饲喂系统研究现状及展望
..... 程维波 吴德胜 李 辉 查德翔 谭荣英 张春颖 (37)

福建省农业技术推广信息化展示平台设计与实现
..... 阙 翔 陈日清 刘必雄 罗 超 李梦航 苏少强 (43)

基于二维相关的土壤养分元素激光诱导击穿光谱分析
..... 梅岸君 李 佳 王长伟 董 鑫 王丽丽 王天瑛 吕程序 (50)

小规模智慧果园系统设计 王莲花 李 侃 山红梅 (55)

无人驾驶拖拉机底层控制系统设计 郝帅红 武志明 郭韦韬 余科松 温鑫伟 (62)

生物环境与能源

办公室智能立体种植系统设计与应用 董 微 李秀刚 兰立波 马 铁 周增产 李宝安 (67)

竹炭改性及其强化生物可降解复合材料研究进展 何 欢 田佳榕 张家溪 向平安 (70)

农副产品加工与贮藏

禽蛋产品检测和分级机械化技术研究现状 高 娇 禹振军 蒋 彬 熊 波 张迪婧 (74)

水土工程

- 水利工程坝后保温板抗裂防冻害技术应用研究 高 鹏 (78)
不同灌水量对红枣果实生长及产量的影响
..... 马 雁 贾生海 白有帅 赵 霞 寇 睿 高 峰 杨述睿 (84)

土地资源管理

- 西南岩溶地区耕地利用效率及其影响因素 唐梅蓉 杨奇勇 (89)

设计制造及理论研究

- 刀盘内倾式甘蔗切根装置设计与试验 刘芳建 刘立晶 郭家文 刘赟东 狄明利 (95)
丘陵山区玉米收获机研制与应用 徐海港 张春祥 张小军 王建强 (102)
移动式草莓人工光立体种植装置设计及应用 胡福生 周增产 姚涛 张晓文 曲维明 (108)
牵引式玉米秸秆切割揉碎方捆打捆机设计与试验
..... 董佳佳 王 强 杨 莉 翟改霞 戴晓军 赵小娟 孙文婷 郭喜燕 (113)
高粱穗瓣籽粒拉伸力学特性研究 冯 禹 邱述金 原向阳 崔清亮 武翠卿 (119)

教学研究

- 大学生提前参与科研项目实践培养模式 张 伏 付三玲 张亚坤 王甲甲 (125)
普渡大学农业工程专业本科生创新与实践能力培养的借鉴与思考 刘 洁 卫 佳 梁秀英 (128)

农学与生物技术

- 青豌豆农机农艺融合配套技术试验
..... 刘 旺 赵丽霞 李传友 张 莉 滕 飞 李 震 刘京蕊 (132)
山西省五寨县黄芪生长气象条件及栽培技术 马子平 王志伟 郝纹进 郑秀文 刘丽英 (136)

农业经济管理

- 青贮玉米种植、饲喂和收获效益分析 郭 勇 王 楠 (140)
先进装备业助推产业振兴
——以安徽省部分市县为例 曹 怡 (144)
基于区块链技术的陕西省猕猴桃产销体系构建 浮永梅 (148)

AGRICULTURAL ENGINEERING

Vol. 11 No. 3 2021

Contents

Top Interview

- Academician Chen Xuegeng: Rooting in Frontier for 60 Years without Slacking,
Committing to Cotton Full Mechanization to a New Journey WANG Yanhong (2)

Equipment and Mechanization

- Development Status and Realization Path of Unmanned Agriculture in Field
..... XU Feng, ZHU Huiqin, CHENG Shengnan, PENG Junming (11)
- Development Status and Countermeasures of Orchard Lifting Platform at Home and Abroad
..... ZHANG Luyun, MENG Xiangjin, DUAN Aiguo, YIN Caiyun, HAN Baobao (15)
- Development of Key Technology and Equipment of Intelligent Water and Fertilizer Machine Control System
..... HAN Weihua (20)
- General Analysis of “Emissions Control Technical Requirements of Non-road Diesel Mobile Machinery”
..... LIU Shunli, WANG Mingda, JI Liang, LI Gang, WANG Jin, JI Zhe (25)
- Application of Friction Drive in Walking Machinery
..... HONG Man, WANG Zhi, TIAN Tian, LIU Xuewen (29)
- Design and Application of Anti-winding Device for Seeder WANG Haijiang (34)

Information and Electrification

- Research Status and Prospect of Intelligent Precision Feeding System for Sow
..... CHENG Weibo, WU Desheng, LI Hui, ZHA Dexiang, TAN Rongying, ZHANG Chunying (37)
- Design and Implement of Information Display Platform for Agricultural Technology Extension in Fujian Province
..... QUE Xiang, CHEN Riqing, LIU Bixiong, LUO Chao, LI Menghang, SU Shaoqiang (43)
- Laser-induced Breakdown Spectroscopy Analysis of Soil Nutrient Elements Based on
Two-dimensional Correlation Method
... MEI Anjun, LI Jia, WANG Changwei, DONG Xin, WANG Lili, WANG Tianying, LV Chengxu (50)
- Design of Small-scale Intelligent Orchard System WANG Lianhua, LI Kan, SHAN Hongmei (55)
- Design of Bottom Control System for Unmanned Tractor
..... HAO Shuaihong, WU Zhiming, GUO Weitao, YU Kesong, WEN Xinwei (62)

Biological Environment and Energy

- Design and Application of Office Intelligent Stereoscopic Planting System
..... DONG Wei, LI Xiugang, LAN Libo, MA Tie, ZHOU Zengchan, LI Baoan (67)
- Progress of Modification of Bamboo Char as Reinforcements in Biodegradable Composites
..... HE Huan, TIAN Jiarong, ZHANG Jiayi, XIANG Pingan (70)

Processing and Storage of Farm and Sideline Products

- Research Status of Testing and Grading Mechanization Technology of Poultry Egg
..... GAO Jiao, YU Zhenjun, JIANG Bin, XIONG Bo, ZHANG Dijing (74)

Water-soil Engineering

- Application and Research of Anti Racking and Anti Freezing Technology of Thermal Insulation Board Behind
Dam of Water Conservancy Project GAO Peng (78)
- Effect of Different Irrigation Quantity on Fruit Growth and Yield of Jujube
..... MA Yan, JIA Shenghai, BAI Youshuai, ZHAO Xia, KOU Rui, GAO Feng, YANG Shurui (84)

Land Resource Management

- Cultivated Land Use Efficiency and Influencing Factors in Karst Area of Southwest China
..... TANG Meirong, YANG Qiyong (89)

Design, Manufacture and Theoretical Research

- Design and Experimental Study of Base Cutter with Inward-leaning Angle in Sugarcane Harvester
..... LIU Fangjian, LIU Lijing, GUO Jiawen, LIU Yundong, DI Mingli (95)
- Development and Application of Corn Harvester for Hilly Area
..... XU Haigang, ZHANG Chunxiang, ZHANG Xiaojun, WANG Jianqiang (102)
- Design and Application of Mobile Artificial Light Stereoscopic Planting Device for Strawberry
..... HU Fusheng, ZHOU Zengchan, YAO Tao, ZHANG Xiaowen, QU Weiming (108)
- Design and Test of a Traction Type Corn Stalk Cutting and Crushing Rectangular Baler
..... DONG Jiajia, WANG Qiang, YANG Li, ZHAI Gaixia,
DAI Xiaojun, ZHAO Xiaojuan, SUN Wenting, GUO Xiyan (113)
- Tensile Characteristics of Sorghum Spikelet and Grains
..... FENG Yu, QIU Shujin, YUAN Xiangyang, CUI Qingliang, WU Cuiqing (119)

Research on Teaching

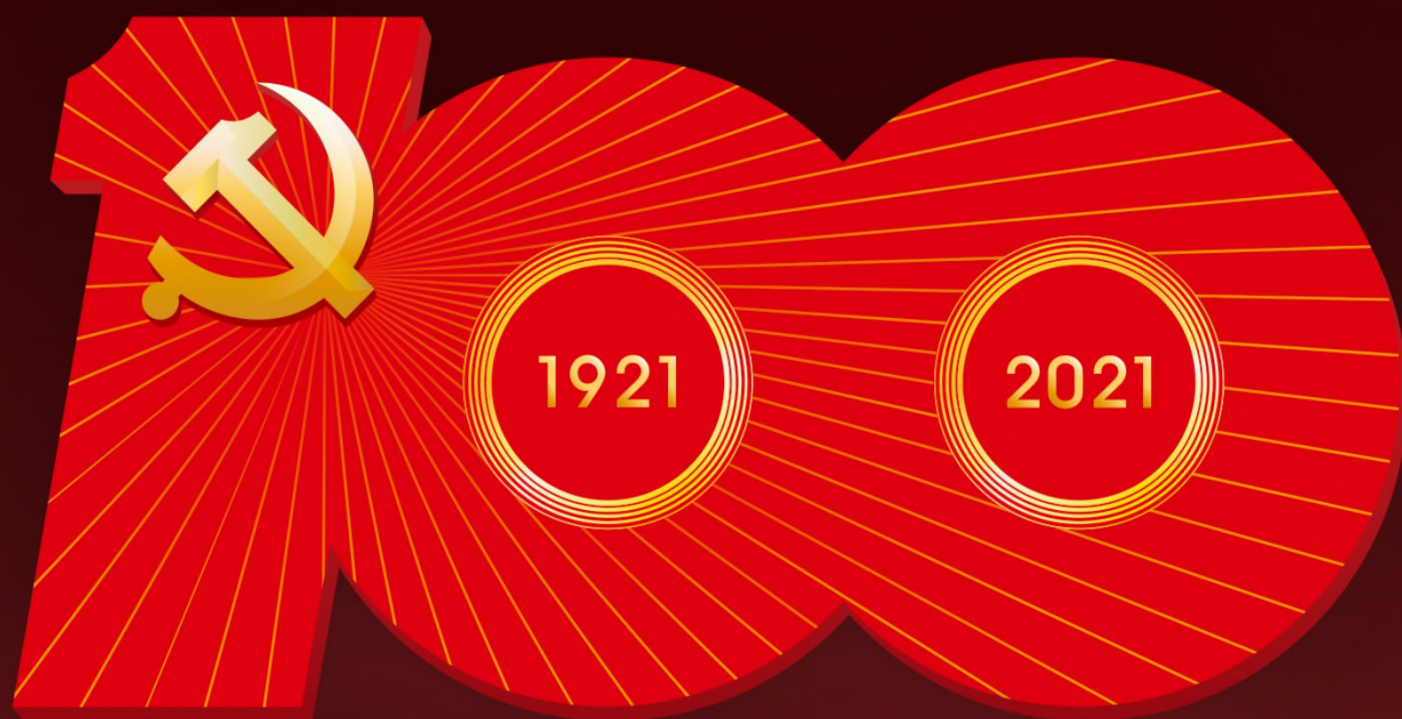
- Training Mode of College Students' Participation in Scientific Research Project Practice in Advance
..... ZHANG Fu, FU Sanling, ZHANG Yakun, WANG Jiajia (125)
- Reference and Reflection on Cultivation of Innovation and Practice Ability of Agricultural Engineering
Undergraduates in Purdue University LIU Jie, WEI Jia, LIANG Xiuying (128)

Agronomy and Biotechnology

- Experiment on Integrated Technology of Agricultural Machinery and Agronomy for Green Pea
..... LIU Wang, ZHAO Lixia, LI Chuanyou, ZHANG Li, TENG Fei, LI Zhen, LIU Jingrui (132)
- Meteorological Conditions for Growth and Cultivation Techniques of *Astragalus membranaceus* in
Wuzhai County of Shanxi Province
..... MA Ziping, WANG Zhiwei, HAO Wenjin, ZHENG Xiuwen, LIU Liying (136)

Management of Agricultural Economy

- Benefit Analysis of Silage Corn Planting, Feeding and Harvesting GUO Yong, WANG Nan (140)
- Advanced Equipment Industry Boosting Industrial Revitalization:
Taking Some Cities and Counties in Anhui Province as Examples CAO Yi (144)
- Construction of Production and Marketing System for Kini Fruit in Shaanxi Province Based on
Blockchain Technology FU Yongmei (148)



庆祝中国共产党成立100周年

The 100th Anniversary of the Founding of
The Communist Party of China

