

# 农业工程

AGRICULTURAL ENGINEERING

2022年 第12卷 第8期 (总第107期)

## 目次

### 综述与评析

乡村振兴背景下农业工程学科的生态农业工程创新拓展 ..... 魏秀菊 朱明 廖艳 (5)

### 装备与机械化

柿子机械化采收技术现状及解决对策——以北京市为例 ..... 郭建业 常青 赵景文 张艳红 潘张磊 (15)

双圆盘式固体肥料抛撒机抛撒性能试验  
..... 禹振军 赵铁伦 安红艳 贾生 胡浩 扶明开 刘旺 盛顺 (20)

### 信息与电气化

基于 PLC 的马铃薯水肥一体化精准混肥系统设计 ..... 刘文亮 杨然兵 张健 杨猛 (24)

基于云计算技术的农业信息化管理平台设计 ..... 郭文浩 (30)

亳州市中药材产业互联网发展现状及建议 ..... 陈书梅 高凌宇 黄蕾 (36)

### 生物环境与能源

设施大棚多元立体种植全方位优劣势 ..... 张加清 沈建生 朱建锡 王涛 孙萍 郑涛 陈长卿 王刚 (39)

人工增雨对缓解阜新市农业干旱的作用 ..... 孙宝利 孙可 张旭 杨晓彤 魏泽楷 舒海燕 (44)

陕西省杨陵区绿色食品产地环境质量监测与评价 ..... 甘海玲 郝心怡 (51)

### 农副产品加工与贮藏

蔬菜冷链加工智能工厂建设全程解决方案 ..... 张克 刘建新 王露延 李培刚 王冰 宋燕燕 (56)

谷朊粉颗粒热风干燥动力学模型及水分迁移规律 ..... 贲宗友 张季伟 韩动梁 肖茂华 陈坤杰 (62)

稻谷收获、干燥和仓储节粮减损技术 ..... 潘保利 潘久君 (68)

### 食品科学与工程

酶抑制率农药残留快检方法存在的问题及研究进展  
..... 王斌 曹丽芬 周钦方 郭柏坤 王莲芳 王雯 王丽芳 张瑜 (72)

## 土地资源管理

基于生态系统服务的附属农用地生态景观模块化设计 ..... 易帅莹 张丽媛 黄璐 陈新明 胡广 (78)

## 设计制造与理论研究

秸秆切割揉碎卷制成型机设计与试验

..... 郭喜燕 张宁 鲍志亮 高晓宏 包乌云毕力格 王强 高磊 王增 (87)

谷子收获机风筛式清选装置试验 ..... 侯华铭 崔清亮 陈益胜 畅治兵 (93)

紫花丹参种子物理特性试验 ..... 陈明东 姚文彬 王东伟 尚书旗 王家胜 连政国 (99)

基于太阳能的小型降温系统研发设计 ..... 颜鲁薪 (103)

## 科研与教学

农业工程实验室运行管理模式——以南京农业大学工学院为例

..... 窦祥林 余洪锋 顾家冰 安秋 郑广隶 於海明 何瑞银 (108)

基于创新实践能力培养与 BYOD 模式的“工业机器人”课程教学改革

..... 陈林涛 朱衡绅 蓝莹 向金山 薛俊祥 (112)

“食品添加剂”课程线上教学探究与实践 ..... 戴璐 薛雯 马文哲 马兆瑞 龙明华 程春全 (119)

“食品微生物检验技术”课程思政教学探索与实践 ..... 张红娟 戴璐 贺立虎 张晓林 (123)

## 农学与生物技术

抗烟嘧磺隆谷子品种冀谷 43 选育及试验

..... 张婷 王根平 李琳 赵玲 师志刚 罗焱杰 李秉华 程汝宏 (127)

6 种农药对陕西省关中地区草地贪夜蛾的田间药效试验 ..... 雷琼 林鑫 巨亚绒 (131)

## 农业经济管理

基于案例研究视角的农批市场转型升级影响因素与机制 ..... 余东来 文晓巍 朱莹 刘雪凡 (135)

我国典型地区农产品流通渠道模式比较借鉴——对山西省特色农产品流通渠道模式的启示

..... 郭玉冰 闫瑞菲 石文俊 (143)

海洋牧场促进渔业转型与传统渔民角色升级 ..... 吴奕 张帆 李军 (149)

山东省农业现代化建设现状及发展建议——基于农业劳动力数量 ..... 刘欣怡 李梅芳 (155)

# AGRICULTURAL ENGINEERING

Vol. 12 No.8 2022

## Contents

### Review and Comments

Innovation and Expansion towards Ecological Agricultural Engineering in Agricultural Engineering Discipline under Background of Rural Revitalization ..... WEI Xiuju, ZHU Ming, LIAO Yan ( 5 )

### Equipment and Mechanization

Current Status and Solutions Analysis of Mechanized Harvest Technology of Persimmons: Taking Beijing City as an Example ..... GUO Jianye, CHANG Qing, ZHAO Jingwen, ZHANG Yanhong, PAN Zhanglei ( 15 )

Dispersal Performance Test of Double Disc Solid Fertilizer Spreader  
..... YU Zhenjun, ZHAO Tielun, AN Hongyan, JIA Sheng, HU Hao, FU Mingkai,  
LIU Wang, SHENG Shun ( 20 )

### Information and Electrification

Design of Precision Mixing Fertilizer System for Potato Water and Fertilizer Integration Based on PLC  
..... LIU Wenliang, YANG Ranbing, ZHANG Jian, YANG Meng ( 24 )

Design of Agricultural Information Management Platform Based on Cloud Computing Technology  
..... GUO Wenhao ( 30 )

Current Situation and Suggestions on Internet Development of Bozhou Traditional Chinese Medicine Industry  
..... CHEN Shumei, GAO Lingyu, HUANG Lei ( 36 )

### Biological Environment and Energy

All-Round Advantages and Disadvantages of Multi-Dimensional Planting in Facility Greenhouse  
..... ZHANG Jiaqing, SHEN Jiansheng, ZHU Jianxi, WANG Tao, SUN Ping, ZHENG Tao,  
CHEN Changqing, WANG Gang ( 39 )

Effect of Artificial Precipitation on Alleviating Agricultural Drought in Fuxin City  
..... SUN Baoli, SUN Ke, ZHANG Xu, YANG Xiaotong, WEI Zekai, SHU Haiyan ( 44 )

Environmental Quality Monitoring and Assessment of Green Food Producing Areas in Yangling District of Shaanxi Province ..... GAN Hailing, HAO Xinyi ( 51 )

### Processing and Storage of Farm and Sideline Products

Whole Process Solution for Construction of Vegetable Cold Chain Processing Smart Factory  
..... ZHANG Ke, LIU Jianxin, WANG Luyan, LI Peigang, WANG Bing, SONG Yanyan ( 56 )

Dynamic Model and Moisture Migration Law of Gluten Pellets in Hot Air Drying  
..... BEN Zongyou, ZHANG Jiwei, HAN Dongliang, XIAO Maohua, CHEN Kunjie ( 62 )

Technology of Grain Saving and Loss Reduction for Paddy Harvesting, Drying and Storage  
..... PAN Baoli, PAN Jiujun ( 68 )

### Food Science and Engineering

Problems and Research Progress of Enzyme Inhibition Rapid Detection of Pesticide Residues  
..... WANG Bin, CAO Lifen, ZHOU Qinfang, GUO Baikun, WANG Lianfang, WANG Wen,  
WANG Lifang, ZHANG Yu ( 72 )

## Land Resource Management

- Modular Design of Ecological Landscape of Affiliated Agricultural Land Based on Ecosystem Services  
..... YI Shuaiying, ZHANG Liyuan, HUANG Lu, CHEN Xinming, HU Guang ( 78 )

## Design, Manufacture and Theoretical Research

- Design and Experiment of Straw Cutting and Kneading Round Baler  
..... GUO Xiyan, ZHANG Ning, BAO Zhiliang, GAO Xiaohong, BAO Wuyunbilige, WANG Qiang,  
GAO Lei, WANG Zeng ( 87 )
- Experiment on Air and Screen Cleaning Device of Foxtail Millet Combine Harvester  
..... HOU Huaming, CUI Qingliang, CHEN Yisheng, CHANG Zhibing ( 93 )
- Experimental Study on Physical Characteristics of Purple Flower *Salvia miltiorrhiza* Seeds  
... CHEN Mingdong, YAO Wenbin, WANG Dongwei, SHANG Shuqi, WANG Jiasheng, LIAN Zhengguo ( 99 )
- Research and Design of Small Cooling System Based on Solar Energy ..... YAN Luxin ( 103 )

## Scientific Research and Teaching

- Operation and Management Mode of Agricultural Engineering Laboratory: Taking Engineering College of Nanjing Agricultural University as an Example  
..... DOU Xianglin, YU Hongfeng, GU Jiabing, AN Qiu, ZHENG Guangli, YU Haiming, HE Ruiyin ( 108 )
- Teaching Reform of "Industrial Robot" Course Based on Cultivation of Innovative Practical Ability and BYOD Mode  
..... CHEN Lintao, ZHU Hengshen, LAN Ying, XIANG Jinshan, XUE Junxiang ( 112 )
- Exploration and Practice of Online Teaching of "Food Additives" Course  
..... DAI Lu, XUE Wen, MA Wenzhe, MA Zhaorui, LONG Minghua, CHENG Chunqun ( 119 )
- Exploration and Practice of Ideological Education in "Food Microbiological Detection Technology"  
..... ZHANG Hongjuan, DAI Lu, HE Lihu, ZHANG Xiaolin ( 123 )

## Agronomy and Biotechnology

- Breeding and Experiment of Nicosulfuron Resistant Millet Variety Jigu 43  
..... ZHANG Ting, WANG Genping, LI Lin, ZHAO Ling, SHI Zhigang, LUO Yanjie,  
LI Binghua, CHENG Ruhong ( 127 )
- Field Efficacy Tests of Six Pesticides Against *Spodoptera Frugiperda* in Guanzhong Area of Shaanxi Province  
..... LEI Qiong, LIN Xin, Ju Yarong ( 131 )

## Management of Agricultural Economy

- Influencing Factors and Mechanisms of Transformation & Upgrading of Agricultural Wholesale Market Based on Perspective from Case Study ..... YU Donglai, WEN Xiaowei, ZHU Ying, LIU Xuefan ( 135 )
- Comparison and Reference of Agricultural Product Circulation Channel Models in Typical Areas of China: Revelation to Circulation Channel Mode of Characteristic Agricultural Products in Shanxi Province  
..... GUO Yubing, YAN Ruifei, SHI Wenjun ( 143 )
- Promoting Role of Marine Ranching Development in Fishery Transformation and Role Upgrading of Traditional Fishermen ..... WU Yi, ZHANG Fan, LI Jun ( 149 )
- Present Situation and Development Suggestions of Agricultural Modernization in Shandong Province: Based on Quantity of Agricultural Labor Force ..... LIU Xinyi, LI Meifang ( 155 )