

**农业发展新视点**

- 植保无人机主要性能指标测评方法的分析与思考 ..... 徐小杰 陈盛德 周志艳 等(1)  
预处理视角下的核桃破壳加工技术研究现状及展望 ..... 张恩铭 郑 霞 田学艳 等(11)

**理论研究与探讨**

- 基于动态特性的甘蔗收获机刀架仿真和模态分析 ..... 李尚平 王梦萍 莫翰宁 等(17)  
不同土质下耕刀工作的离散元受力仿真分析 ..... 刘超颖 张 旭 李晨阳 等(23)  
甘蔗破垄机拨叶圆盘作业过程的动力学仿真 ..... 杨 望 张传利 杨 坚 等(30)  
马铃薯覆膜播种膜沟扎孔刀的运动分析与试验 ..... 张志强 陈 伟 吴英思 等(34)  
多棱立辊式玉米收获机割台 FMECA 分析 ..... 何 珂 姜 萌 刘洋成 等(38)  
基于 UG 对卧式杠杆木薯拔起装置的有限元分析 ..... 卢煜海 叶自旺 成 铭 等(43)

**设计制造**

- 多旋翼植保无人机变量喷洒系统设计 ..... 刘泽锋 唐 宇 骆少明 等(47)  
沟齿式香蕉假茎粉碎还田机设计与试验 ..... 王自强 李 粤 张喜瑞 等(55)  
果园水肥一体化自动控制系统设计和实现 ..... 王利源 梁 悅 杨 欣 等(60)  
基于高效低损目标的马铃薯收获机改进设计 ..... 孙传祝 魏忠彩 苏国梁 等(65)  
基于 PLC 的青贮料装袋机控制系统设计与研究 ..... 赵云汉 庞 博 周立洋 等(70)  
小型竖直螺旋式精量条施机的设计 ..... 李晓贤 赵 进 任震宇 等(75)  
自行式桑树切割机的设计与仿真制造 ..... 李海平 王 瑞 叶自旺 等(80)  
悬挂式葡萄埋藤机的设计与试验 ..... 郭 辉 孙滨洪 毕志波 等(86)  
花生联合收获机清选系统试验台的设计 ..... 刘春亚 王升升 师清翔 等(91)  
牵引式方草捆拾堆垛机的设计与研究 ..... 王乐宁 侯加林 李今成 等(96)  
基于 PLC 的红花花丝采摘控制系统设计 ..... 崔财豪 曹卫彬 马 锐 等(101)  
大型辊筒类西葫芦收获机捡拾装置的改进设计 ..... 王 芳 杨 铮 田 超(106)  
无盲区三七精密播种机漏播检测装置设计与试验 ..... 张 冰 袁忠文 谭 睿 等(111)  
玉米收获机摘辊转速自动控制系统应用研究 ..... 程月平(116)  
新型风送式喷雾机风筒设计与研究 ..... 宋俊伟 吴 姝 魏新华(121)  
蔬菜机械化生产对秧苗栽植质量的影响研究 ..... 高 芳 李洪昌(125)  
采摘机器人智能避障决策系统—基于 ZigBee 和单片机 ..... 聂章龙 张 静(130)  
蔬菜嫁接机秧苗夹持机构的设计与试验 ..... 张峰峰 王家胜 李业锋 等(135)

土壤修复粉剂均洒混合装备的设计与试验研究 ..... 傅延祺 孙 鹏 肖 勇 等(139)

## 试验研究

酿酒葡萄枝条切割性能试验分析 ..... 朱新月 王丽红 黄 勇 等(143)

环境湿度场与不同包装种子含水率的研究—基于 COMSOL ..... 段洁利 吕恩利 邱 汉 等(150)

搅龙式秸秆切碎装置揉切机理分析及参数优化 ..... 薛云恒 李景彬 温宝琴 等(157)

带勾式马铃薯排种装置的工作参数优化试验设计 ..... 黄 勇 赵晓雪 戚江涛 等(162)

成熟期大蒜茎秆力学特性的试验研究 ..... 辛 杰 侯加林 李玉华 等(168)

振动作用下冰草种子丸化包衣运动与试验研究 ..... 仇 义 陈 智 侯占峰 等(174)

自激振动深松对土壤物理特性的影响 ..... 屈 通 李 霞 汤明军 等(179)

萝卜物理及压缩特性的试验研究 ..... 王方艳 高 升(184)

小型甘蔗收获机刀架振动试验与优化 ..... 黄琼春 李 冰 李尚平 等(189)

2ZB-2 型吊杯式蔬菜移栽机的适用性研究 ..... 郭建业(193)

蓝莓机械损伤试验设计与试验研究 ..... 吕 洋 王黎明(199)

烟秆切割器切割参数的试验分析与研究 ..... 汤自强 康 康 何 玉 等 (203)

自动玉米收获机调高装置 PID 参数控制试验 ..... 张卫星 温贻芳(207)

红花分枝力学特性测试及运动分析 ..... 孙胃岭 曹卫彬 杨 萌 等(212)

## 新技术应用

基于 AMESim 的拖拉机自动耕深控制系统仿真研究 ..... 白学峰 常江雪 鲁植雄 等(217)

基于 CAN 总线和 PWM 控制方式的起垄施肥系统研究 ..... 车守全 卢剑锋 张富贵 等(222)

基于 UG 的智能采摘机器人动画仿真设计 ..... 侯庆斌(228)

跑步机速度跟踪算法在联合收割机运动控制中的应用 ..... 冯建富(232)

现代播种机调度系统设计—基于 GIS 旅游资源开发与规划 ..... 时静亚(236)

智能播种机嵌入式英语语音识别控制系统设计与研究 ..... 刘 蕾(240)

采摘机械手结构和控制系统优化—基于神经网络武术套路训练 ..... 巴 旭(245)

基于武术飞脚动作学习的类人采摘机器人控制系统 ..... 任天麟(249)

基于自动给料机的变频速度调节控制研究 ..... 陆文灏 刘绪军(254)

英语语言理解在棉花打顶机上的应用研究 ..... 向婷婷(259)

基于 CAM/CAE 的采摘机器人运动轨迹控制研究 ..... 郑东梅 王庆喜(264)

# Journal of Agricultural Mechanization Research

Vol.40 No.12 2018

## Contents

### New View of Agricultural Development

Analysis and Thinking of Evaluation Methods About the Main Performance Indexes of Plant Protection UAV .....	Xu Xiaojie et al.(1)
Research Status and Prospect of Walnut Shell breaking Processing Technology From the Perspective of Pretreatment .....	Zhang Enming et al.(11)

### Theory Study and Discussion

Simulation and Modal Analysis of Sugarcane Harvester Tool Post Based on the Dynamic Characteristics .....	Li Shangping et al.(17)
The Simulation Analysis of Bear Conditions for Tillage Blade in Different Kind of Soil .....	Liu Chaoying et al.(23)
Dynamic Simulation of the Disc Operation Process of Sugarcane Ridge Buster .....	Yang Wang et al.(30)
Motion Analysis and Experiment of Membrane Ditch 's Prick hole 's Knife on the Potato Seed Film Sowing .....	Zhang Zhiqiang et al.(34)
The FMECA Analysis to the Polygonal Vertical Roller Corn Harvester Head .....	He Ke et al.(38)
Based on the UG for Finite Element Analysis of Horizontal Leveraged Cassava Pull up Device .....	Lu Yuhai et al.(43)

### Design and Manufacture

Design of a Variable Spraying System Based on Multi -rotor Unmanned Aerial Vehicle .....	Liu Zefeng et al.(47)
Design and Experiment on Banana Stalks Disintegrator with Double Shafts .....	Wang Ziqiang et al. (55)
Design and Realization of Automatic Control System for Water and Fertilizer Integration in Orchard .....	Wang Liyuan et al.(60)
Improved Design of Potato Harvester Based on High Efficiency and Low Loss Target .....	Sun ChuanzhuLei et al.(65)
The Research and Design of Silage Bagging Machine Control System Based on PLC .....	Zhao Yunhan et al.(70)
Design of Small Vertical Screw Precision Banding Fertilizer Applicator .....	Li Xiaoxian et al.(75)
Design and Simulation of Self-propelled Mulberry Cutting Machine .....	Li Haiping et al.(80)
Design and Experiment of the Suspended Grape Vine Burying Machine .....	Guo Hui et al.(86)
Design of Peanut Combine Harvester Cleaning System Test Bench .....	Liu Chunya et al.(91)
Design and Research of Pull -type Rectangular Pickup Bales and Straw Bales Buncher .....	Wang Lening et al.(96)
Design of Control System for Safflower Filaments Picking Based on PLC .....	Cui Caihao et al.(101)
Improved Design on Picking Device of Large -scale Roller Seed Squash Harvester .....	Wang Fang et al.(106)
Design and Test of Notoginseng Precision Seeding Leakage Testing Detection Device for Non - blind Zone .....	Zhang Bing et al.(111)
Application Research on the Picking Roller Speed Automatic Control System of the Corn Harvester .....	Cheng Yueping et al.(116)
Structural Modification and Experiment on Air Duct of Air -assisted Sprayer .....	Song Junweiet al.(121)
Research on the Influence of Vegetable Mechanization Production on the Planting Quality of Seedlings .....	Gao Fang et al.(125)
Decision System for Intelligent Obstacle Avoidance of Picking Robot —Based on ZigBee and MCU .....	Nie Zhanglong et al.(130)

Design and Test for Clamping Mechanism Vegetable Grafting Robot ..... Zhang Fengfeng et al.(135)

Design and Experimental Study of the Soil Repair Powder Sprinkling Evenly and Mixing Equipment ..... Fu Yanqi et al.(139)

## Experiment and Research

Experimental Analysis on Cutting Performance of Wine Grape Branches ..... Zhu Xinyue et al.(143)

A Research on Seed Moisture Content and Storage Environment Humidity Field —Base on the COMSOL ..... Duan Jieli et al.(150)

The Rubbing Cutting Mechanism Analysis And Parameter Optimization of The Dragon -type Straw Cutting Device .....

Xue Yunheng et al.(157)

Parameter Optimization Experimental Design of Spoon – type Potato Seeding Device ..... Huang Yong et al.(162)

Experimental Research on Mechanical Properties of GarlicIn Mature Period ..... Xin Jie et al.(168)

Study on Pelleting Coating Movement and Experiment of Wheat –grass Seeds under Vibration ..... Qiu Yi et al.(174)

Effects of the Excited–vibration Subsoiler on Soil Properties ..... Qu Tong et al.(179)

Study on Physical Feature and Compression Characteristic of Radish ..... Wang Fangyan et al.(184)

Vibration Test and Optimization of Tool Carrier of Small Sugarcane Harvester ..... Huang Qiongchun et al.(189)

Study on the Applicability of Dibble –type Vegetable Transplanting Machine ..... Guo Jianye et al.(193)

Design and Experimental Study of Blue Berry Mechanical Damage Test ..... Lv Yang et al.(199)

Study and Experimental Analysis of Cutting Parameter for Tobacco Stem Cutting ..... Tang Ziqiang et al.(203)

The PID Parameters Control Test on the Height Adjustment Device of the Automatic Corn Harvester ..... Zhang Weixing et al.(207)

Kinematics Analysis of Safflower Based on Mechanical Properties ..... Sun Weiling et al.(212)

## Application of New Technology

Simulation of Tractor Tilling Depth Automatic Control System Based on AEMsim ..... Bai Xuefeng et al.(217)

Study on Ridge Forming and Fertilizer Applicator Base on CAN Bus and PWM Control Methods ..... Che Shouquan et al.(222)

Animation Simulation Design of Intelligent Picking Robot Based on UG ..... Hou Qingbin et al.(228)

Application of Speed Tracking Algorithm of Treadmill in Motion Control of Combine Harvester ..... Feng Jianfu et al.(232)

Design for Scheduling System of Modern Seeding Machine —Based on the Development and Planning of GIS Tourism Resources .....

..... Shi Jingya et al.(236)

Design and Research of Embedded English Speech Recognition Control System for Intelligent Seeding Machine ..... Liu Lei(240)

Optimization of Structure and Control System of Picking Manipulator —Based on Neural Network Wushu Training Routine ..... Ba Xu(245)

Control System of Humanoid Picking Robot Based on Wushu Flying Foot Action Learning ..... Ren Tianlin (249)

Adjustment Control Research on the Frequency Conversion Speed Based on the Automatic Feeding Machine ..... Lu Wenhao et al.(254)

Research on the Application of English Language Understanding in Cotton ..... Xiang Tingting(259)

Research on the Trajectory Control of the Picking Robot Based on CAM /CAE ..... Zheng Dongmei et al.(264)

Basic Parameters of the Journal : CN 23-1233/S \* 1979 \* m \* A4 \* 268 \* zh \* P \* ¥20.00 \* 1500 \* 52 \* 2018-12