

湖南农业大学学报  
(自然科学版)  
Journal of Hunan  
Agricultural University  
(Natural Sciences)

第 48 卷第 5 期  
(总第 272 期)  
2022 年 10 月

第十届编辑委员会

学术顾问: 官春云 印遇龙

方智远

主 任: 邹学校

副 主 任: 刘仲华 段美娟

陈光辉

委 员 (按姓氏拼音排序):

柏连阳 曹福祥 陈光辉

陈信波 邓子牛 段美娟

方 俊 方 远 甘德欣

贺建华 贺 喜 侯德兴

纪雄辉 李有志 林亲录

刘 霞 刘忠松 刘仲华

卢向阳 罗 琳 单 杨

沈文辉 苏爱华 孙志良

谭支良 唐文帮 王 辉

王国梁 王克林 吴明亮

吴卫国 萧浪涛 肖调义

谢方平 熊兴耀 徐明岗

杨国顺 易自力 郑晓峰

朱幸辉 邹冬生 邹学校

主 编 苏爱华

副 主 编 罗慧敏

毛友纯

执行编辑 邹慧玲

电脑编辑 刘佳宁

## 目 次

### 作物学

油稻免耕种植模式的土壤理化特性和酶活性.....

.....赵杨, 戴力, 李超, 高杜娟, 匡炜, 梁玉刚, 陈友德, 方宝华(507)

基于主成分和聚类分析筛选氮高效小麦品种.....

.....张子豪, 李想成, 吴昊天, 付鹏浩, 高春保, 张运波, 邹娟(513)

稻茬烤烟减氮配施腐植酸碳肥的效应.....

.....黄琼慧, 肖汉乾, 肖艳松, 江智敏, 徐均华, 胡庆辉, 向清慧, 邓小华(520)

### 生物科学与技术

水稻幼苗响应氰化物胁迫的基因表达谱差异分析.....

.....张伏中, 蔡青, 宋江燕, 胡龙兴, 吴根义(528)

高温胁迫下不同耐热性水稻品种的差异表达基因分析.....

.....周佳, 彭艳, 陈信波(536)

都匀毛尖本地种茶树响应假眼小绿叶蝉侵害的代谢组学研究.....

.....王芬, 木仁, 李国栋, 喻佩, 李静, 崔宝禄, 吕立堂(543)

### 园艺·园林

新型肥料施用对马铃薯生长和产量及品质的影响.....

.....杨雪, 高倩, 蔡林志, 董文, 叶亦心, 秦玉芝, 周华兰, 熊兴耀, 胡新喜(550)

卷丹百合远缘杂交及杂种后代的鉴定.....

.....舒珂, 李建红, 陈璐, 傅海燕, 蔡维, 刘李晨, 李玉帆(556)

### 农业资源利用

喀斯特山区土壤颗粒的分布特征及其对可蚀性的影响.....

.....丰秋兰, 周运超(563)

基于BP神经网络的柑橘农药残留预测.....

.....周佳俊, 龚道新, 蒋紫烟, 梁佳豪, 赵佳, 苏龙, 廖婵娟(572)

### 畜牧·兽医·水产

牛和山羊基因组共同加速进化区域与角形成的潜在关系.....

.....李梓锋, 殷利奇, 刘德武(578)

奥利司他干预对高脂饮食大鼠肠道微生物的影响.....

.....汪洁仪, 郭佳婧, 钱玉娇, 李高阳, 付复华, 单杨(585)

湘江浮游植物的生态特征及其与环境因子的相关性.....

.....徐大建, 张建国, 王佩, 秦臻, 熊钢, 王晓清(594)

### 农业工程

基于 PVDF 双压电薄膜的油菜播种监测系统的设计与试验.....

.....孙国峻, 张金然, 徐勇, 余洪峰, 何瑞银(601)

成都平原直播稻田杂草群落构成及植保无人机防控效果.....

.....张轹政, 贡常委, 张水容, 阮彦伟, 马钰, 叶娜, 刘雪梅, 朱新成, 王学贵(608)

基于三维动态生长模型的水稻根系模拟.....

.....杨乐, 彭军, 龙兰, 施俊林, 王龙飞, 赖静文(613)

不同品种早籼稻制备的鲜湿米粉的品质差异.....

.....郭云霞, 杨喆, 徐志明, 王悦, 陈光辉(619)

超声波辅助提取鲜红辣椒中辣椒素工艺优化.....

.....李立恒, 刘明新, 胡超, 兰时乐(626)

## CONTENTS

## Crop Science

- Soil physical and chemical properties and enzyme activities of rape and rice planting patterns under no-tillage.....  
.....ZHAO Yang, DAI Li, LI Chao, GAO Dujuan, KUANG Wei, LIANG Yugang, CHEN Youde, FANG Baohua (507)
- Screening of wheat cultivars with high nitrogen efficiency using principal component analysis and cluster analysis.....  
.....ZHANG Zihao, LI Xiangcheng, WU Haotian, FU Penghao, GAO Chunbao, ZHANG Yunbo, ZOU Juan (513)
- Effects of nitrogen reduction combined with humic acid carbon fertilizer application on flue-cured tobacco in rice-tobacco rotation.....  
HUANG Qionghui, XIAO Hanqian, XIAO Yansong, JIANG Zhimin, XU Junhua, HU Qinghui, XIANG Qinghui, DENG Xiaohua (520)

## Bioscience and Biotechnology

- Characterization of gene expression profiles of rice seedlings in response to cyanide stress.....  
.....ZHANG Fuzhong, CAI Qing, SONG Jiangyan, HU Longxing, WU Genyi (528)
- Analysis of differentially expressed genes in rice varieties with different heat tolerance under high temperature stress.....  
.....ZHOU Jia, PENG Yan, CHEN Xinbo (536)
- Metabolomics study on the response of Duyun Maojian native tea plant to the infestation of *Empoasca vitis* Gothe.....  
.....WANG Fen, MU Ren, LI Guodong, YU Pei, LI Jing, CUI Baolu, LYU Litang (543)

## Bioscience and Biotechnology

- Effects of new fertilizers and their combined application on the growth, yield and tuber quality of spring potato.....  
.....YANG Xue, GAO Qian, CAI Linzhi, DONG Wen, YE Yixin, QIN Yuzhi, ZHOU Hualan, XIONG Xingyao, HU Xinxi (550)
- Distant hybridization of *Lilium lancifolium* Thunb. and identification of its hybrid progeny.....  
.....SHU Ke, LI Jianhong, CHEN Lu, FU Haiyan, CAI Wei, LIU Lichen, LI Yufan (556)

## Agricultural Resource Exploitation

- Soil particle size distribution and effects on erodibility in karst district.....  
.....FENG Qiulan, ZHOU Yunchao (563)
- Prediction of pesticide residues in citrus using BP neural network.....  
.....ZHOU Jiajun, GONG Daoxin, JIANG Ziyang, LIANG Jiahao, ZHAO Jia, SU Long, LIAO Chanjuan (572)

## Animal • Veterinary • Aquatic

- The potential relationship between co-accelerated evolution regions in the genomes of *Bos taurus* and *Capra hircus* and horn formation.....  
.....LI Zifeng, YIN Liduo, LIU Dewu (578)
- Effect of orlistat on gut microbiota of rats fed with high-fat diet.....  
.....WANG Jieyi, GUO Jiajing, QIAN Yujiao, LI Gaoyang, FU Fuhua, SHAN Yang (585)
- The phytoplankton ecological characteristics and its relationship with environmental factors in Xiangjiang River.....  
.....XU Dajian, ZHANG Jianguo, WANG Pei, QIN Qin, XIONG Gang, WANG Xiaoqing (594)

## Agricultural Engineering

- Design and experiment of rapeseed sowing monitoring system based on PVDF bi-piezoelectric film.....  
.....SUN Guojun, ZHANG Jinran, XU Yong, YU Hongfeng, HE Ruiyin (601)
- Investigation on the composition of weed community in direct-seeded rice fields in Chengdu plain and research on plant protection unmanned aerial vehicle (UAV) control.....  
.....ZHANG Yunzheng, GONG Changwei, ZHANG Shuirong, RUAN Yanwei, MA Yu, YE Na, LIU Xuemei, ZHU Xincheng, WANG Xuegui (608)
- Rice root system simulation research based on three dimensional dynamic growth model.....  
.....YANG Le, PENG Jun, LONG Lan, SHI Junlin, WANG Longfei1, LAI Jingwen (613)
- Different quality characterization of fresh wet rice noodles made of different early season indica rice.....  
.....GUO Yunxia, YANG Zhe, XU Zhiming, WANG Yue, CHEN Guanghui (619)
- Optimization of the ultrasonic assisted extraction procedure of capsaicin from fresh red pepper.....  
.....LI Liheng, LIU Mingxin, HU Chao, LAN Shile (626)