



中文核心期刊  
CSCD来源期刊

ISSN 1000-2421  
CODEN HNDXEK

# 华中农业大学学报

JOURNAL OF HUAZHONG AGRICULTURAL UNIVERSITY

Vol.38 No.3

2019.3

中国·武汉  
WUHAN CHINA

华中农业大学学报

第三十八卷

第三期

二〇一九年五月

主 编:张献龙  
副主编:姚江林 鲁满新  
杨锦莲(常务)  
\* \* \*  
本期统稿编辑:陆文昌

## 目 次

### 作物遗传改良与栽培

栽培方式对水稻生育进程、主要病害严重度及产量的影响

…………… 张佑宏 王治虎 张 舒 张瑞洋 杨小林(1)

超声波处理对果蔗产量品质及生理特性的影响

…… 李鸿博 严卓晟 邓权清 颜静婷 吴 佳 钟坚文 沈万宽(7)

### 园艺·林学

*PhGRP* 基因 RNAi 干涉载体转化矮牵牛的初步研究

…………… 田绍泽 王 雨 岳远征 杨赵楠 胡惠蓉(13)

生物炭对玛瑙红樱桃苗期生理生化特征的影响

…… 王健宁 文晓鹏 洪 怡 姜昱雯 李正春 刘金桂 乔 光(19)

### 植物保护

棉隆土壤消毒对高山甘蓝根肿病的防效及土壤真菌群落的影响

…… 胡洪涛 朱志刚 焦忠久 闵 勇 曹春霞 颜冬冬 曹坳程(25)

柑橘潜叶蛾与柑橘溃疡病的关系研究…………… 易继平 向 进 周华众(32)

黄野螟精氨酸激酶基因的鉴定与表达分析…………… 王春燕 吕子豪 林 同(39)

### 资源与环境

硼对酸性环境中砷砷幼苗不同部位矿质元素含量及根  $H^+$  相关酶活力的影响

…………… 杜晨晴 吴秀文 闫 磊 刘亚林 姜存仓(47)

基于随机森林算法的原始土壤图更新研究

…………… 周紫燕 黄 魏 许 伟 傅佩红 望陈运(53)

氮掺杂碳点的光稳定性研究 ..... 任国兰 金振麟 周 优 谭洪鹏 梁建功(60)

生物降解地膜对棉花温度、郁闭度、产量及纤维品质的影响

..... 冯 欢 张风华 何文清 刘 琪 吕 军 刘晓伟 张 军(65)

产角蛋白酶毕赤酵母工程菌的构建及酶学性质 ..... 许佳惠 尹雅洁 李欣悦 柳 凯 梁运祥 赵述森 胡远亮(71)

华癸中慢生根瘤菌焦磷酸硫酸素结合蛋白基因 *tpp* 的功能研究

..... 吴和涛 谢 婧 罗 莎 何冬兰 李晓华 程国军(77)

**动物科学·动物医学**

应用基于重组慢病毒的 CRISPR/Cas9 技术构建基因突变的鸡 DF1 细胞

..... 靳泽华 谢梦利 易辰阳 黄 英 付 磊 王晓萍 张安定(83)

**食品与农业工程**

益生菌芒果饮料加工和发酵过程中理化性质变化规律 ..... 刘秋豆 胡 凯 陈亚淑 彭 达 谢笔钧 孙智达(89)

高效液相色谱-紫外法检测酱油中的 3-氯-1,2-丙二醇 ..... 吴 倩 江 洪 马济美 曾 贞(97)

双边齐切式柑橘修剪机设计 ..... 常钧翔 张衍林 李善军 张 雯 马攀宇(104)

不同种类秸秆添加对自蔓延高温合成纳米氧化锡的影响 ..... 刘 念 刘 静 张 强 牛文娟 牛智有 董万静(112)

**文献综述**

虾应对感染的先天免疫反应研究进展 ..... 张英豪 顾泽茂 兰江风(119)

# JOURNAL OF HUAZHONG AGRICULTURAL UNIVERSITY

(Natural Science Edition)

Vol.38 No.3 May, 2019

## CONTENTS

### Crop genetic improvement and cultivation

Effects of cultivation modes on growth process, severity of main diseases and yield of rice

..... ZHANG Youhong WANG Zhihu ZHANG Shu ZHANG Ruiyang YANG Xiaolin(1)

Effects of ultrasonic treatment on yield, quality and physiological characteristics of chewing cane

..... LI Hongbo YAN Zhuosheng DENG Quanqing YAN Jingting

WU Jia ZHONG Jianwen SHEN Wankuan(7)

### Horticulture • Forestry

Transformation of petunia by *PhGRP* gene RNA interference vector

..... TIAN Shaoze WANG Yu YUE Yuanzheng YANG Zhaonan HU Huirong(13)

Effects of biochar on physiological and biochemical characteristics of *Prunus pseudocerasus* ‘Manahong’ seedling

... WANG Jianning WEN Xiaopeng HONG Yi JIANG Yuwen LI Zhengchun LIU Jingui QIAO Guang(19)

### Plant protection

Effects of soil disinfection by dazomet on control efficacy of cabbage clubroot disease and soil fungal communities in high mountain area .....

HU Hongtao ZHU Zhigang JIAO Zhongjiu MIN Yong

CAO Chunxia YAN Dongdong CAO Aocheng(25)

Relationship between *Phyllocnistis citrella* and citrus canker disease .....

YI Jiping XIANG Jin ZHOU Huazhong(32)

Identification and expression analysis of arginine kinase gene in *Heortia vitessoides*

..... WANG Chunyan LYU Zihao LIN Tong(39)

### Resources and environment

Effects of boron on contents of elements and activities of H<sup>+</sup> related enzymes at different parts of trifoliolate seedlings in low

pH environment .....

DU Chenqing WU Xiuwen YAN Lei LIU Yalin JIANG Cuncang(47)

Updating traditional soil maps based on random forest algorithm

..... ZHOU Ziyao HUANG Wei XU Wei FU Peihong WANG Chenyun(53)

Photostability of nitrogen doped carbon dots

..... REN Guolan JIN Zhenlin ZHOU You TAN Hongpeng LIANG Jiangong(60)

Effects of biodegradable mulch on cotton temperature, canopy density, yield and fiber quality

..... FENG Huan ZHANG Fenghua HE Wenqing LIU Qi LYU Jun LIU Xiaowei ZHANG Jun(65)

Construction and characterization of recombinant *Pichia pastoris* strain with keratinase production

..... XU Jiahui YIN Yajie LI Xinyue LIU Kai LIANG Yunxiang ZHAO Shumiao HU Yuanliang(71)

Function of thiamine pyrophosphate-binding protein gene *tpp* in *Mesorhizobium huakuii*

..... WU Hetao XIE Jing LUO Sha HE Donglan LI Xiaohua CHENG Guojun(77)

**Animal science • Veterinary medicine**

Construction of chicken DF1 cells with gene mutation by recombinant lentivirus-based CRISPR/Cas9 technology

..... JIN Zehua XIE Mengli YI Chenyang HUANG Ying FU Lei WANG Xiaoping ZHANG Anding(83)

**Food science and agricultural engineering**

Changes in physicochemical properties of probiotic mango beverage during processing and fermentation

..... LIU Qiudou HU Kai CHEN Yashu PENG Da XIE Bijun SUN Zhida(89)

Quantitatively determining hazardous 3-chloro-1,2-propanediol in soy sauce with high performance liquid chromatography-ultraviolet method .....

WU Qian JIANG Hong MA Jimei ZENG Zhen(97)

Design of citrus trimmer with bilateral and neat trim

..... CHANG Junxiang ZHANG Yanlin LI Shanjun ZHANG Wen MA Panyu(104)

Effects of the addition of different kinds of crop straws on nano-tin oxide product prepared by SHS method

..... LIU Nian LIU Jing ZHANG Qiang NIU Wenjuan NIU Zhiyou DONG Wanqing(112)

**Literature review**

Recent advances in study of immune response of shrimp to pathogen infection;a review

..... ZHANG Yinghao GU Zemao LAN Jiangfeng(119)