



北大中文核心期刊
中国科学引文数据库(CSCD)来源期刊
中国精品科技期刊
中国科技核心期刊
RCCSE 中国核心学术期刊
中国农林核心期刊

ISSN 1000-4440
CN 32-1213/S

江苏农业学报

Jiangsu Journal of Agricultural Sciences

第38卷 第4期

Vol. 38 No.4

2022年8月

江苏省农业科学院主办



江苏农业学报

第38卷 第4期 2022年8月31日

目 次

遗传育种·生理生化

粒叶比对优质粳稻稻米品质的影响

- 姚宇 邢志鹏 陶钰 黄志成 王坤庭 霍中洋 胡雅杰 郭保卫 魏海燕 高辉 张洪程 (865)
微藻处理后的沼液对水稻种子萌发与幼苗生长的影响 张双双 施正晟 张琴 叶生梅 李艳宾 (875)
罗红霉素对小麦硝态氮和铵态氮吸收动力学的影响 龚镇洪 余彬彬 黄盼盼 汪晓丽 钱晓晴 (882)
柳枝稷 *BiP* 基因的鉴定、表达分析和抗逆境功能 宋刚 方志刚 王玉龙 蔡庆生 (889)
党参根际土壤浸提液对其种子萌发和幼苗生长的影响 林超 邱黛玉 陈垣 沈鹏瑞 胡芳弟 (900)

植物保护

- 防治水稻恶苗病拮抗细菌的筛选、鉴定和评价 李凤顺 乔俊卿 张荣胜 刘邮洲 刘永锋 (907)

耕作栽培·资源环境

- 氮肥不同基追比对直播稻氮素吸收、转运及利用的影响 周乾顺 吴启侠 朱建强 乔月 彭瑞雪 范楚江 (915)
肥密互作对旱地冬小麦商麦 1619 旗叶光合特性、干物质积累和产量的影响

..... 吴秀宁 张军 王凤娟 王新军 高宝云 赵麟 敬樊 (924)

铁肥对马铃薯生理特性、产量及品质的影响

..... 安珍 张茹艳 周春涛 张卫娜 石铭福 康益晨 张俊莲 秦舒浩 (931)

丛枝菌根真菌对甘薯生物量、根系形态及钾素吸收的影响

..... 周晓月 袁洁 石琨 汪吉东 朱国鹏 周其良 丁爱芳 (939)

不同轮作模式下旱地番茄土壤理化性质及细菌群落组成特征

..... 李万星 李小霞 李丹 靳鲲鹏 韩文清 刘永忠 黄学芳 苏秀敏 王俊 曹晋军 (949)

巢湖流域典型稻麦轮作区大气氮磷沉降及对巢湖影响的分析

..... 田帅 单旭东 程启鹏 徐刚 邹红建 华胜 高时凤 (958)

农业信息工程

- 基于 Sentinel-2 时序谐波特征的县域农作物分类 孙庆松 张晓楠 陈利东 王坤 宋宏利 (967)

基于无人机高光谱影像的玉米叶绿素含量估测

..... 郭松 常庆瑞 郑智康 蒋丹垚 高一帆 宋子怡 姜时雨 (976)

基于地形梯度的阜平县景观格局演变与热环境效应分析

..... 党怡雯 刘景刚 张家琛 陈亚恒 (985)

基于分布滞后非线性模型的蟹塘水质受投喂量影响的关系分析

..... 金晶 毛星 戴红君 刘杨 任妮 (994)

畜牧兽医·水产养殖

- 饲喂高精料日粮的奶牛瘤胃液对瘤胃上皮细胞炎症因子表达量的影响 严 康 马晓宇 杨天宇 姜茂成 詹 康 赵国琦(1003)
- 牛蒡根皮多酚、多糖粗提物对海兰褐壳蛋鸡产蛋性能及血液生化指标的影响 马明磊 朱 强 王 波(1013)
- 鸭疫里氏杆菌 1 型流行株的生物学特性及免疫原性 张敬峰 董永毅 卢凤英 刘青涛 徐 彬 赵 莎 孙华伟 吴 坤 张小飞(1021)
- 青虾对河蟹养殖水体中浮游动物及水环境因子的影响 杨智景 冯亚明 顾海龙 钱 巍 王 显 杨大柳 张 浩(1026)

园 艺

- 冬季设施补光对苏州地区岩棉培番茄生长的影响 黄志午 俞亦章 徐志刚 朱为民 钱春花(1034)
- 克服萝卜自交不亲和性的化学试剂筛选 倪 萌 王 娟 王 爽 梅 燮 柳李旺 徐 良 王 燕(1042)
- 桃Ⅱ型 NADH 脱氢酶家族基因鉴定和表达分析 张春华 沈志军 马瑞娟 张圆圆 郭绍雷 蔡志翔 俞明亮(1049)
- 透湿性反光膜对柑橘果皮蜡质晶体结构和组成成分的影响 付沃兴 刘德春 匡柳青 蒙志鑫 刘 勇 胡 威 杨 莉(1062)
- 基于 HPLC-FLD 靶向分析古茶树游离氨基酸积累特征 方仕茂 张 拓 杨 婷 田小强 田洪军 刘忠英 潘 科(1070)
- 不同百合种质资源对灰霉病的抗性筛选 张铭芳 李 卉 韩东洋 杜运鹏 薛 静 高俊莲 张秀海(1078)
- 野菊舌状花形态变异的遗传分析 任江珊 顾雪琪 牛雅静 蒲 娅 付海蓝 黄 河 戴思兰(1085)

加工贮藏·质量安全

- 基于区块链技术的农产品深度溯源系统建设思考和设计方案 卞立平 孙爱东 孙晓明 刘贤金(1092)

农业经济·农业信息

- 新冠疫情下中国食用菌出口高增长的贸易环境组态 廖倩滢 张 琦(1099)
- 制度支持对苹果种植户有机肥施用行为的影响分析 张美玲 张复宏 徐宣国(1106)

综 述

- 小麦倒春寒研究现状及展望 刘 畅 王维领 赵 灿 李国辉 许 轲 霍中洋(1115)
- 胞外多糖促进胁迫条件下农作物生长的研究与展望 魏宏宇 李 怡 彭帅英 黄 林 张 宝 李昆太 程 新(1123)
- 凝集素在农业和食品领域中的应用研究进展 徐重新 谢雅晶 何 鑫 仲建锋 刘 媛 张 霄 刘贤金(1135)

研究简报

- 水稻组织中可培养内生细菌的分离鉴定及功能分析 黄博闻 王 亚 葛 静 孙 星 王冬兰 余向阳(1145)
- 谷子单籽粒醇溶蛋白提取方法的建立及其在杂交种纯度鉴定中的应用 崔燕娇 刘 丹 赵子龙 李素英 张 静 刘正理(1149)

JIANGSU JOURNAL OF AGRICULTURAL SCIENCES

Vol.38 No.4 August 31 2022

CONTENTS

CROP GENETICS AND BREEDING · PHYSIOLOGY AND BIOCHEMISTRY

- Effects of grain-leaf ratio on quality of high-quality *japonica* rice YAO Yu, XING Zhi-peng, TAO Yu, HUANG Zhi-cheng, WANG Kun-ting, HUO Zhong-yang, HU Ya-jie, GUO Bao-wei, WEI Hai-yan, GAO Hui, ZHANG Hong-cheng (865)
- Effects of microalgae-treated biogas slurry on seed germination and seedling growth of rice ZHANG Shuang-shuang, SHI Zheng-sheng, ZHANG Qin, YE Sheng-mei, LI Yan-bin (875)
- Effects of roxithromycin on the absorption kinetics of nitrate nitrogen and ammonium nitrogen in wheat GONG Zhen-hong, YU Bin-bin, HUANG Pan-pan, WANG Xiao-li, QIAN Xiao-qing (882)
- Identification, expression analysis and function in adverse environment of *BiP* in switchgrass SONG Gang, FANG Zhi-gang, WANG Yu-long, CAI Qing-sheng (889)
- Effects of aqueous extracts from rhizosphere soil of *Codonopsis pilosula* on seed germination and seedling growth LIN Chao, QIU Dai-yu, CHEN Yuan, SHEN Peng-rui, HU Fang-di (900)

PLANT PROTECTION

- Screening, identification and evaluation of antagonistic bacteria for the control of Rice Bakanae Disease LI Feng-shun, QIAO Jun-qing, ZHANG Rong-sheng, LIU You-zhou, LIU Yong-feng (907)

FARMING AND CULTIVATION · RESOURCE AND ENVIRONMENT

- Effects of different basal-topdressing ratios of nitrogen fertilizer on nitrogen absorption, transportation and utilization of direct-seeding rice ZHOU Qian-shun, WU Qi-xia, ZHU Jian-qiang, QIAO Yue, PENG Rui-xue, FAN Chu-jiang (915)
- Effects of fertilizer and density interaction on flag leaf photosynthetic characteristics, dry matter accumulation and yield of Shangmai 1619 WU Xiu-ning, ZHANG Jun, WANG Feng-juan, WANG Xin-jun, GAO Bao-yun, ZHAO Lin, JING Fan (924)
- Effects of iron fertilizer on physiological characteristics, yield and quality of potato AN Zhen, ZHANG Ru-yan, ZHOU Chun-tao, ZHANG Wei-na, SHI Ming-fu, KANG Yi-chen, ZHANG Jun-lian, QIN Shu-hao (931)
- Effects of arbuscular mycorrhizal fungi on biomass, root morphology and potassium uptake of sweet potato ZHOU Xiao-yue, YUAN Jie, SHI Kun, WANG Ji-dong, ZHU Guo-peng, ZHOU Qi-liang, DING Ai-fang (939)
- Soil physical and chemical properties and bacterial community composition in dryland tomato under different rotation patterns LI Wan-xing, LI Xiao-xia, LI Dan, JIN Kun-peng, HAN Wen-qing, LIU Yong-zhong, HUANG Xue-fang, SU Xiu-min, WANG Jiao, CAO Jin-jun (949)
- Analysis of atmospheric nitrogen and phosphorus deposition and its impact on Chao Lake in typical rice-wheat rotation area of Chao Lake basin TIAN Shuai, SHAN Xu-dong, CHENG Qi-peng, XU Gang, GAO Hong-jian, HUA Sheng, GAO Shi-feng (958)

AGRICULTURAL INFORMATION ENGINEERING

- Crop classification in counties based on Sentinel-2 temporal harmonic characteristics SUN Qing-song, ZHANG Xiao-nan, CHEN Li-dong, WANG Kun, SONG Hong-li (967)
- Estimation of maize chlorophyll content based on unmanned aerial vehicle (UAV) hyperspectral images GUO Song, CHANG Qing-rui, ZHENG Zhi-kang, JIANG Dan-yao, GAO Yi-fan, SONG Zi-yi, JIANG Shi-yu (976)
- Analysis of landscape pattern evolution and thermal environment effect in Fuping County based on topographic gradient DANG Yi-wen, LIU Jing-gang, ZHANG Jia-chen, CHEN Ya-heng (985)
- Analysis of the relationship between water quality of crab pond and feeding amount of feedstuff based on distributed lag non-linear model JIN Jing, MAO Xing, DAI Hong-jun, LIU Yang, REN Ni (994)

ANIMAL HUSBANDRY AND VETERINARY SCIENCES · AQUICULTURE

- Effects of rumen fluid from dairy cows fed high concentrate diet on expression of inflammatory factors in bovine rumen epithelial cells YAN Kang, MA Xiao-yu, YANG Tian-yu, JIANG Mao-cheng, ZHAN Kang, ZHAO Guo-qing(1003)
- Effects of polyphenols and polysaccharides from burdock root peel on egg production performance and blood biochemical indices of Hy-line brown laying hens MA Ming-lei, ZHU Qiang, WANG Bo(1013)
- Biological characteristics and immunogenicity of *Riemerella anatipestifer* serotype 1 epidemic strains ZHANG Jing-feng, DONG Yong-yi, LU Feng-ying, LIU Qing-tao, XU Bin, ZHAO Sha, SUN Hua-wei, WU Kun, ZHANG Xiao-fei(1021)
- Effects of prawn on zooplankton and water environmental factors in crab culture water YANG Zhi-jing, FENG Ya-ming, GU Hai-long, QIAN Wei, WANG Xian, YANG Da-liu, ZHANG Hao(1026)

HORTICULTURE

- Effects of winter facility light supplement on the growth of stone wool cultivated tomato in Suzhou area HUANG Zhi-wu, YU Yi-zhang, XU Zhi-gang, ZHU Wei-min, QIAN Chun-hua(1034)
- Screening of chemical reagents for overcoming the self-incompatibility of radish NI Meng, WANG Juan, WANG Shuang, MEI Yi, LIU Li-wang, XU Liang, WANG Yan(1042)
- Identification and expression analysis of the type II NADH dehydrogenase family genes in peach ZHANG Chun-hua, SHEN Zhi-jun, MA Rui-juan, ZHANG Yuan-yuan, GUO Shao-lei, CAI Zhi-xiang, YU Ming-liang(1049)
- Effects of vapor-permeable reflective film on cuticular wax structure and composition of citrus FU Wo-xing, LIU De-chun, KUANG Liu-qing, MENG Zhi-xin, LIU Yong, HU Wei, YANG Li(1062)
- Targeted analysis of free amino acid accumulation characteristics of ancient tea trees based on HPLC-FLD FANG Shi-mao, ZHANG Tuo, YANG Ting, TIAN Xiao-qiang, TIAN Hong-jun, LIU Zhong-ying, PAN Ke(1070)
- Resistance of different lily germplasm resources to *Botrytis cinerea* ZHANG Ming-fang, LI Hui, HAN Dong-yang, DU Yun-peng, XUE Jing, GAO Jun-lian, ZHANG Xiu-hai(1078)
- Genetic analysis of morphological variation of ray florets in *Chrysanthemum indicum* REN Jiang-shan, GU Xue-qi, NIU Ya-jing, PU Ya, FU Hai-lan, HUANG He, DAI Si-lan(1085)

PROCESSING AND STORAGE · QUALITY SAFETY

- Thought of agricultural product deep-traceability system construction and scheme design based on blockchain technology BIAN Li-ping, SUN Ai-dong, SUN Xiao-ming, LIU Xian-jin(1092)

AGRICULTURAL ECONOMY AND INFORMATION

- Trade environment configuration for the high growth of edible fungi export of China under the background of COVID-19 prevalence LIAO Qian-ying, ZHANG Jun(1099)
- Effect of institutional support on organic fertilizer application behavior of apple growers ZHANG Mei-ling, ZHANG Fu-hong, XU Xuan-guo(1106)

REVIEW

- Research progress and prospect of cold spell in later spring in wheat LIU Chang, WANG Wei-ling, ZHAO Can, LI Guo-hui, XU Ke, HUO Zhong-yang(1115)
- Promoting crop growth under stress conditions by exopolysaccharides: review and perspective WEI Hong-yu, LI Yi, PENG Shuai-ying, HUANG Lin, ZHANG Bao, LI Kun-tai, CHENG Xin(1123)
- Research progress of the application of lectin in agriculture and food XU Chong-xin, XIE Ya-jing, HE Xin, ZHONG Jian-feng, LIU Yuan, ZHANG Xiao, LIU Xian-jin(1135)

BRIEF REPORT

- Isolation, identification and functional analysis of culturable endophytic bacteria in rice tissue HUANG Bo-wen, WANG Ya, GE Jing, SUN Xing, WANG Dong-lan, YU Xiang-yang(1145)
- A method for prolamin extraction from single grain of foxtail millet and its application in purity identification of hybrids CUI Yan-jiao, LIU Dan, ZHAO Zi-long, LI Su-ying, ZHANG Jing, LIU Zheng-li(1149)