

ISSN 1001-4829

CN 51-1213/S

CODEN XNXUEF

西南农业学报

# 西南农业学报

SOUTHWEST CHINA JOURNAL OF AGRICULTURAL SCIENCES

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

• 二〇二三年 第三十六卷 第一期 •

# 2023

第36卷 第1期  
Vo1.36 No.1



《西南农业学报》编辑委员会  
2023年1月

## 目 次

## 作物遗传育种·种质资源

- 1 257份高粱种质资源农艺性状的遗传多样性 ..... 高旭, 冯周, 丁延庆, 徐建霞, 曹宁, 程斌, 汪灿, 张立异  
11 广西乐业野生春兰 iPBS 遗传多样性分析与指纹图谱构建 ..... 曾艳华, 何荆洲, 龙蔷宇, 范继征, 李秀玲, 卜朝阳  
20 不同亚种间水稻糙米镉含量及微量元素的差异分析 ..... 于江辉, 翁绿水, 宋嘉俊, 刘腾飞, 蒋显斌  
29 广西果树种质资源调查收集与评价 .....  
..... 朱建华, 黄羽, 陈传武, 龚弘娟, 唐辉, 周婧, 徐宁, 郝小玲, 郭丽梅, 罗培四, 李一伟, 黄小江

## 耕作栽培·生理生化

- 39 不同耕作实践对新增耕地土壤结构及养分含量的影响 .....  
..... 刘哲, 曹石榴, 王娜, 王欢元, 孙增慧, 罗玉虎, 卢楠, 李燕  
47 不同季节平茬对云南松生物量分配与异速生长的影响 ..... 王丹, 李熙颜, 颜廷雨, 陈诗, 许玉兰, 蔡年辉, 徐德兵  
53 曲霉、酵母菌和乳酸菌固态发酵对无花果多酚和黄酮类化合物抗氧化活性的影响 .....  
..... 廖颖, 尹礼国, 斯朝金, 帖余, 蒋杨丹, 赵甲元  
62 不同改良剂对盐碱地花生生长特性和产量的影响 ..... 徐婷, 柳延涛, 王海江

## 植物保护·土壤肥料

- 75 香蕉枯萎病对抗感品种营养生长期光合特性的影响 .....  
..... 王永芬, 徐胜涛, 杨宝明, 刘立娜, 李舒, 李永平, 俞艳春, 潘继红, 郑泗军  
84 巫山脆李褐腐病病原菌鉴定及 1-MCP 对其的防治效果 ..... 张倩倩, 何兴兴, 熊金梁, 彭梦云, 黄明, 刘仁鹏, 关文强  
91 湖南省多花黄精炭疽病病原鉴定及其药剂筛选 ..... 邱泽澜, 陈锦, 张卓, 钟杰, 朱俊子  
98 番茄环纹斑点病毒 N 和 NSm 基因的 VIGS 载体构建 ..... 崔玥, 赵立华, 陈思, 文俊元, 邱润霜, 张仲凯, 赵明富  
105 生物炭配施微生物菌剂对白菜根肿病防控效果研究 .....  
..... 解国玲, 张智浩, 吴流通, 刘佳伟, 徐权杰, 付克剑, 聂强, 张继来, 林春, 陈文华, 苏友波  
112 三七种植土壤中对羟基苯甲酸对尖孢镰刀菌的化感作用 ..... 赵静, 万琼莲, 焦蓉, 王占娣, 王连春  
118 磷酸钾影响酸化茶园土壤 pH 及其交换性阳离子路径研究 .....  
..... 刘海娟, 林慧凌, 李昊宇, 于淑琪, 姚懿洪, 冯沛胜, 邓璐, 王朝强, 向萍, 朱悦蕊, 林文雄, 高水练  
128 鸡粪堆肥中的细菌群落组成及多样性分析 ..... 何东贤, 莫红芳, 侯小露, 熊晓妍, 覃振斌, 孙琪, 陈孟姣, 刘平, 李军成

## 园艺·农业生态环境

- 137 亚洲百合及东方百合 AGPase 酶活性及表达量与淀粉含量的相关性 ..... 张 达,李莲莲,莫江玲,李 缘,张超超,吴学尉,王丽花
- 144 水肥供应水平及环境因子对番茄果实生长的影响 ..... 李许真,刘 丹,吕清海,董翔宇,陈书霞
- 152 转色期喷施尿素对酿酒葡萄生理品质及酵母可同化氮累积的影响 ..... 高 明,王 晶,马婷慧,王 锐
- 159 干旱绿洲区生态安全格局研究——以喀什地区为例 ..... 何浩天,姜云璐,曹月娥,贺忠发,赵 敏,许仲林

## 烟草科学

- 169 基于 BPNN 的烤烟褐变程度识别及其分类烟叶质量分析 ..... 孙光伟,郭青青,柳 均,冯 吉,孙敬国,张鹏龙,吴哲宽,李建平,陈振国
- 178 喷施赤霉素和硝酸钾对烤烟上部叶同步成熟和烤后质量的影响 ..... 杨 浩,吴润生,张永辉,郭仕平,夏 春,雷 晓,刘 雷,刘雅洁,曾淑华
- 187 氮磷钾减量配施钾长石土壤调理剂对烤烟产质量及养分利用率的影响 ..... 张晓伟,龙 杰,张 轼,张冀武,孙浩巍,雷 蕾,余小芬,邱学礼,成 龙,杨树明

## 畜牧·资源昆虫

- 194 藏羊 *BMPRII* 基因的序列特征和表达分析 ..... 李明明,贺 娜,吕彩玲,吴庆伟,靳生伟,邓玉婷,张军霞
- 203 铜铁互作效应对方格星虫稚虫生长、存活、体成分及相关酶活性的影响 ..... 曾梦清,董兰芳,许明珠,刘海娟,游出超,龙子扬,林立蔚,李世才,彭慧婧
- 211 豆天蛾江苏种群滞育期间营养物质及激素变化规律 ..... 郭明明,陆明星,赵雪君,李晓峰,陈 凤,樊继伟

---

## Contents

### **CROP GENETICS & BREEDING · GERMPLASM RESOURCE**

- 1 Genetic diversity of agronomic traits of 257 sorghum germplasm resources ..... GAO Xu, FENG Zhou, DING Yan-qing, XU Jian-xia, CAO Ning, CHENG Bin, WANG Can, ZHANG Li-yi
- 11 Genetic diversity analysis and fingerprinting construction of wild *Cymbidium goeringii* from Leye, Guangxi by iPBS ..... ZENG Yan-hua, HE Jing-zhou, LONG Qiang-yu, FAN Ji-zheng, LI Xiu-ling, BU Zhao-yang
- 20 Analysis of cadmium content and minor elements in brown rice among different subspecies ..... YU Jiang-hui, WENG Lyu-shui, SONG Jia-jun, LIU Teng-fei, JIANG Xian-bin
- 29 Investigation, collection and evaluation of fruit tree germplasm resources in Guangxi ..... ZHU Jian-hua, HUANG Yu, CHEN Chuan-wu, GONG Hong-juan, TANG Hui, ZHOU Jing, XU Ning, HAO Xiao-ling, GUO Li-mei, LUO Pei-si, LI Yi-wei, HUANG Xiao-jiang

### **TILLAGE & CULTIVATION · PHYSIOLOGY & BIOCHEMISTRY**

- 39 Effect of different tillage practices on soil structure and nutrient content in newly reclaimed cultivated land ..... LIU Zhe, CAO Shi-liu, WANG Na, WANG Huan-yuan, SUN Zeng-hui, LUO Yu-hu, LU Nan, LI Yan
- 47 Effects of flat stubble in different seasons on biomass allocation and allometric growth of *Pinus yunnanensis* ..... WANG Dan, LI Xi-yan, YAN Ting-yu, CHEN Shi, XU Yu-lan, CAI Nian-hui, XU De-bing
- 53 Effects of solid fermentation of *Aspergillus*, yeast and lactic acid bacteria on antioxidant activity of polyphenols and flavonoids in fig ..... LIAO Ying, YIN Li-guo, SI Chao-jin, TIE Yu, JIANG Yang-dan, ZHAO Jia-yuan
- 62 Effects of different modifiers on growth characteristics and yield of peanut in saline alkali soil ..... XU Ting, LIU Yan-tao, WANG Hai-jiang

### **PLANT PROTECTION · SOIL FERTILIZER**

- 75 Effects of Fusarium wilt on photosynthetic characteristics of different resistant banana cultivars at vegetative growth stage ..... WANG Yong-fen, XU Sheng-tao, YANG Bao-ming, LIU Li-na, LI Shu, LI Yong-ping, YU Yan-chun, PAN Ji-hong, ZHENG Si-jun
- 84 Pathogenic fungus identification of Wushan plum brown rot and bio-control effects of 1-MCP ..... ZHANG Qian-qian, HE Xing-xing, XIONG Jin-liang, PENG Meng-yun, HUANG Ming, LIU Ren-peng, GUAN Wen-qiang
- 91 Identification and fungicide screening of pathogen causing anthracnose on *Polygonatum cyrtonema* (Huangjing) in Hunan province of China ..... QIU Ze-lan, CHEN Jin, ZHANG Zhuo, ZHONG Jie, ZHU Jun-zi
- 98 Construction of VIGS vector of tomato zonate spotted tospovirus *N* and *NSm* gene ..... CUI Yue, ZHAO Li-hua, CHEN Si, WEN Jun-yuan, QIU Run-shuang, ZHANG Zhong-kai, ZHAO Ming-fu
- 105 Effect of biochar application combined with microbial agent on prevention and control of *Plasmodiophora brassicae* of Chinese cabbage ..... XIE Guo-ling, ZHANG Zhi-hao, WU Liu-tong, LIU Jia-wei, XU Quan-jie, FU Ke-jian, NIE Qiang, ZHANG Ji-lai, LIN Chun, CHEN Wen-hua, SU You-bo
- 112 Allelopathic effects of *P*-hydroxybenzoic acid on *Fusarium oxysporum* in planting soil of *Panax notoginseng* ..... ZHAO Jing, WAN Qiong-lian, JIAO Rong, WAN Zhan-di, WANG Lian-chun
- 118 Effects of potassium phosphate on acidified tea garden soil pH and its approach of exchangeable cations ..... LIU Hai-juan, LIN Hui-ling, LI Hao-yu, YU Shu-qi, YAO Yi-hong, FENG Pei-sheng, DENG Lu, WANG Zhao-qiang, XIANG Ping, ZHU Yue-rui, LIN Wen-xiong, GAO Shui-lian
- 128 Bacterial community composition and diversity analysis in chicken manure composting ..... HE Dong-xian, MO Hong-fang, HOU Xiao-lu, XIONG Xiao-yan, QIN Zhen-bin, SUN Qi, CHEN Meng-jiao, LIU Ping, LI Jun-cheng

## **HORTICULTURE · AGRICULTURAL ECO-ENVIRONMENT**

- 137 Correlation between starch content with AGPase activity, gene expression on asiatic and oriental hybrids lily ..... ZHANG Da, LI Lian-lian, MO Jiang-ling, LI Yuan, ZHANG Chao-chao, WU Xue-wei, WANG Li-hua
- 144 Effects of environmental factors on growth of tomato fruits under different water and fertilizer supply levels ..... LI Xu-zhen, LIU Dan, LYU Qing-hai, DONG Xiang-yu, CHEN Shu-xia
- 152 Impact of urea spraying during color change on physiological quality and yeast assimilable nitrogen accumulation in wine grapes ..... GAO Ming, WANG Jing, MA Ting-hui, WANG Rui
- 159 Ecological security pattern of arid oasis area: Taking Kashi prefecture as an example ..... HE Hao-tian, JIANG Yun-lu, CAO Yue-e, HE Zhong-fa, ZHAO Min, XU Zhong-lin

## **TOBACCO SCIENCE**

- 169 Identification of tobacco leaf browning degree based on BPNN and quality analysis of classified tobacco leaves ..... SUN Guang-wei, GUO Qing-qing, LIU Jun, FENG Ji, SUN Jing-guo, ZHANG Peng-long, WU Zhe-kuan, LI Jian-ping, CHEN Zhen-guo
- 178 Effects of spraying gibberellin and potassium nitrate on simultaneous maturation and quality of flue-cured tobacco upper leaves ..... YANG Hao, WU Run-sheng, ZHANG Yong-hui, GUO Shi-ping, XIA Chun, LEI Xiao, LIU Lei, LIU Ya-jie, ZENG Shu-hua
- 187 Effects of chemical fertilizer reduction and potassium feldspar soil conditioners on yield, quality and nutrient utilization efficiency of flue-cured tobacco ..... ZHANG Xiao-wei, LONG Jie, ZHANG Ke, ZHANG Ji-wu, SUN Hao-wei, LEI Lei, YU Xiao-fen, QIU Xue-li, CHENG Long, YANG Shu-ming

## **ANIMAL SCIENCE · RESOURCE INSECT**

- 194 Sequence characteristics and expression analysis of *BMPRII* gene in Tibetan sheep ..... LI Ming-ming, HE Na, LYU Cai-ling, WU Qing-wei, JIN Sheng-wei, DENG Yu-ting, ZHANG Jun-xia
- 203 Effects of Cu-Fe interaction on growth, survival, body composition and relative enzyme activity of *Sipunculus nudus* Linnaeus larvae ..... ZENG Meng-qing, DONG Lan-fang, XU Ming-zhu, LIU Hai-juan, YOU Chu-chao, LONG Zi-yang, LIN Li-wei, LI Shi-cai, PENG Hui-jing
- 211 Changes in nutrients and hormone during diapause period of *Clanis bilineata tsingtauica* Mell population in Jiangsu province ..... GUO Ming-ming, LU Ming-xing, ZHAO Xue-jun, LI Xiao-feng, CHEN Feng, FAN Ji-wei

# 《西南农业学报》编辑委员会

主任 (Director of the editorial board) : 牟锦毅

副主任 (Vice directors of the editorial board, 按姓氏笔画排序) :

邓国富 刘剑飞 赵德刚 黄平

主编 (Editor-in-chief) : 牟锦毅

副主编 (Associate editors-in-chief, 按姓氏笔画排序) :

王家银 冯卫 林正雨 (常务)

欧毅 覃泽林

编委 (Members of the editorial board, 按姓氏笔画排序) :

王云	王文峰	王勇德	王家银	巴桑旺堆	邓国富	冯卫	朱永清	任光俊	向青云
刘旭	刘永红	刘作华	刘剑飞	刘海平	江国良	汤永禄	孙健	牟锦毅	杜军
杜才富	李成云	杨武云	杨荣仲	何鹏	何永坤	何庆才	何新华	张勇	张鸿
张仲凯	张述宽	陈泽辉	陈晓汉	林正雨	欧毅	罗廷荣	金涛	郑家奎	参木友
赵泽英	赵德刚	胡凤益	贺德华	黄平	梁国鲁	谌爱东	隋启君	蒋开锋	覃泽林
番兴明	曾兴权	曾秀丽	曾卓华	雷波					

西南农业学报 (月刊)

Xinan Nongye Xuebao

2023年1月28日出版

2023年第36卷第1期

Southwest China Journal of

Agricultural Sciences (Monthly)

Vol.36 No.1 2023

Published on January 28, 2023

主 管: 四川省农业农村厅

主 办: 四川、云南、贵州、广西、西藏及  
重庆市(区、市)农科院

编辑出版: 《西南农业学报》编辑部

地 址: 成都市锦江区净居寺路20号附101号

邮 编: 610066

电 话: 028-84504192

邮 箱: Jxuebao@sina.com

投稿网址: www.xnnyxb.com

印 刷: 成都市新都华兴印务有限公司

国内发行: 四川省报刊发行局

国外发行: 中国国际图书贸易集团有限公司  
(北京399信箱,100044)

ISSN 1001-4829 CN 51-1213/S CODEN XNXUEF

Supervised by Sichuan Provincial Department of Agriculture and Rural Affairs

Sponsored by Sichuan, Yunnan, Guizhou, Guangxi, Tibet and Chongqing Academies of Agricultural Sciences

Edited and Published by Editorial Department of Southwest China Journal of Agricultural Sciences

Add: 20-101, Jingjusi Road, Jinjiang District, Chengdu, Sichuan

610066, China

Tel: 028-84504192

E-mail: Jxuebao@sina.com

Website: www.xnnyxb.com

Printed by Chengdu Xindu Huaxing Printing Co., Ltd.

Distributed by Sichuan Provincial Bureau of Newspapers and Periodicals

Foreign: China International Book Trading Corporation  
(P. O. Box 399, Beijing 100044, China)

国内邮发代号: 62-152

国外发行代号: M2912

国内订价: 25.00元