

ISSN 1001-4829

CN 51-1213/S  
CODEN XNXUEF

# 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 |

2023

第36卷 第8期  
Vo1.36 No.8

ISSN 1001-4829



万方数据

《西南农业学报》编辑委员会  
2023年8月

## 目 次

### 耕地保护与粮食安全

- 1573 广东省耕地资源承载力时空演变及其驱动机理研究 ..... 邹美靓,刘洛,王璐,彭一平,李建华,杨颖,王子锦  
1584 四川省粮食产业供给特征及能力提升策略 ..... 黄悦,张社梅  
1594 1980—2020年河南沿黄粮食主产区土地利用时序过程分异特征 ..... 杨崇科,马泉来,曹艳杰,周浩  
1603 主产区粮食增产影响因素及发展应对研究——基于南北主产区差异视角 ..... 许钰莎,赵颖文  
1612 基于县域视角的云南省粮食生产空间布局变迁分析 ..... 毛昭庆,袁媛,董云峰,李梁,张晓娇,董晓波  
1625 中国玉米供需的耦合时空演变特征分析与应对策略 ..... 王森培,赵颖文,许钰莎,胡旭,李晓

### 作物遗传育种·种质资源

- 1636 不同辣椒品种(系)苗期根际细菌群落结构分析 ..... 王灿,苏甜,张新梅,李子薇,许俊强,王绍祥,张应华  
1644 基于表现型值构建旱冬瓜核心种质研究 ..... 邹广权,王晓丽,李艳,曹现富,李华,付朴艳,唐君培,李妹,曹子林

### 耕作栽培·生理生化

- 1653 连作木薯组培苗根系分泌物的鉴定及其化感效应 ..... 韩笑,张静柔,贝丽萍,黄凯,黎亮武,阳太亿,韦茂贵  
1662 不同化学调控剂对甘蔗节间伸长及糖分积累的影响 ..... 罗含敏,周慧文,闫海锋,陈荣发,范业康,罗霆,周忠凤,吴建明,丘立杭  
1671 醇化过程中云南清香型烟叶的化学成分分析 ..... 王发勇,王玉真,刘泽,祁林,刘继辉,王金宏,华一崑,汪显国,杨晶津  
1677 芒果叶片水分含量估算光谱指数模型的建立 ..... 莫佳佳,黄玉清,靳佳,闫妍

### 植物保护·土壤肥料·土地科学

- 1686 新疆野核桃枝条组织结构与核桃腐烂病抗性的关系 ..... 温家康,张萍,王茹,邢长杰,唐茜茜,朱小虎  
1694 枳壳不同生育期根际土壤细菌群落变化研究 ..... 吴微微,韩雪,王继朋,孙年喜,李勇  
1702 施氮量对南疆棉田土壤氮素及棉花氮吸收利用的影响 ..... 殷昊,杨阳,张宸,罗宇,张应榕,王娟红,蒋平安,盛建东,陈波浪  
1711 大豆胞囊线虫胁迫下不同抗性红小豆根际土壤细菌群落多样性分析 ..... 郭子雯,陈婧,焦莉萍,李鹏飞,刘大伟  
1718 商品有机肥对黏性红壤团聚体分布、烤烟产质量及养分利用率的影响 ..... 张晓伟,刘加红,戴绍明,张轲,余小芬,邱学礼,邹炳礼,杨树明  
1725 腐熟菌剂与配施辅料对奶牛粪堆肥理化性质及菌群结构的影响 ..... 朱建伟,毕江涛,李文兵,贾渊超,毛瑞璠  
1737 基于土地利用变化的乡村聚落生态系统服务价值时空演变分析 ..... 李泽,吴博萌

## 农业生态环境

1748 碳排放和水污染约束条件下云南农业水资源利用效率研究 ..... 杨蕊,王龙,何永美,梁泉

1758 基于结构方程模型的科尔沁沙地东部人工固沙林生态稳定性评价 ..... 文明,岳永杰,郭景怡,钟淇涵,赵恺,崔莹

## 畜牧

1770 牛 *EGR2* 基因转录本 *XI* 的 CDS 区克隆及表达特性分析 ..... 贺丽霞,刘爽,汪书哲,冯雪,户春丽,马云

1779 牛 *CAMK4* 基因的编码区克隆、组织表达谱及其生物信息学分析.....

..... 包斌武,任倩倩,王晋鹏,李彦霞,冯芬,罗仍卓么,王兴平

1787 添加双歧杆菌对欧拉羊生长性能及粪便微生物多样性的影响 ..... 吴占月,吴森

1798 放牧与舍饲模式对滩羊肉品质、瘤胃环境及菌群结构的影响 .....

..... 郭帅,杨慧超,李瑞国,高巧仙,张亮亮,王占军,辛国省

1808 *I35* 位点表达 ORFV *FIL* 基因的重组山羊痘病毒的构建 ..... 余远迪,牟豪,张阳,郑华,李幸,付利芝

## 农业经济

1814 中国省际农业投入产出效率的动态演进及时空分异规律 ..... 邓路,袁圣博,白萍,李会芳

## Contents

### **FARMLAND PROTECTION & FOOD SECURITY**

- 1573 Spatial-temporal evolution and driving mechanism of cultivated land resources carrying capacity in Guangdong province ..... ZOU Mei-liang, LIU Luo, WANG Lu, PENG Yi-ping, LI Jian-hua, YANG Hao, WANG Zi-jin
- 1584 Supply characteristics of Sichuan province grain industry and strategies to enhance supply capacity ..... HUANG Yue, ZHANG She-mei
- 1594 Differentiation characteristics of land use temporal processes in main grain producing areas along the Yellow River in Henan province from 1980 to 2020 ..... YANG Chong-ke, MA Quan-lai, CAO Yan-jie, ZHOU Hao
- 1603 Influencing factors and development countermeasures of grain increase in major producing areas: From perspective of differences between the north and the south ..... XU Yu-sha, ZHAO Ying-wen
- 1612 Spatial distribution change of grain production in Yunnan province based on county perspective ..... MAO Zhao-qing, YUAN Yuan, DONG Yun-feng, LI Liang, ZHANG Xiao-jiao, DONG Xiao-bo
- 1625 Spatial-temporal evolution and coupling analysis of corn supply and demand and countermeasures in China ..... WANG Sen-pei, ZHAO Ying-wen, XU Yu-sha, HU Xu, LI Xiao

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

- 1636 Rhizosphere bacterial community structure in different pepper varieties (strains) at seedling stage ..... WANG Can, SU Tian, ZHANG Xin-mei, LI Zi-wei, XU Jun-qiang, WANG Shao-xiang, ZHANG Ying-hua
- 1644 Constructing core collection of *Alnus nepalensis* based on phenotype data ..... ZOU Guang-quan, WANG Xiao-li, LI Yan, CAO Xian-fu, LI Hua, FU Pu-yan, TANG Jun-pei, LI Mei, CAO Zi-lin

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

- 1653 Identification and allelopathic effect of root exudates of tissue-culture cassava under continuous cropping ..... HAN Xiao, ZHANG Jing-rou, BEI Li-ping, HUANG Kai, LI Liang-wu, YANG Tai-yi, WEI Mao-gui
- 1662 Effects of growth-promoting chemical regulators on internode elongation and sugar accumulation in sugarcane ..... LUO Han-min, ZHOU Hui-wen, YAN Hai-feng, CHEN Rong-fa, FAN Ye-geng, LUO Ting, ZHOU Zhong-feng, WU Jian-ming, QIU Li-hang
- 1671 Chemical composition analysis of clear flavor tobacco leaf during maturation in Yunnan province ..... WANG Fa-yong, WANG Yu-zhen, LIU Ze, QI Lin, LIU Ji-hui, WANG Jin-hong, HUA Yi-kun, WANG Xian-guo, YANG Jing-jin
- 1677 Establishment of hyperspectral index model for water content estimation of mango leaf ..... MO Jia-jia, HUANG Yu-qing, JIN Jia, YAN Yan

### **PLANT PROTECTION · SOIL FERTILIZER · LAND SCIENCE**

- 1686 Relationship between branch tissue structure of Xinjiang wild walnut and resistance to walnut canker disease ..... WEN Jia-kang, ZHANG Ping, WANG Ru, XING Chang-jie, TANG Xi-xi, ZHU Xiao-hu
- 1694 Variation of bacterial community structure in rhizosphere soil of *Fructus aurantii* at different growth stages ..... WU Wei-wei, HAN Xue, WANG Ji-peng, SUN Nian-xi, LI Yong
- 1702 Effects of nitrogen application rate on soil nitrogen and cotton nitrogen uptake and utilization in Southern Xinjiang ..... YIN Hao, YANG Yang, ZHANG Chen, LUO Yu, ZHANG Ying-rong, WANG Juan-hong, JIANG Ping-an, SHENG Jian-dong, CHEN Bo-lang
- 1711 Diversity analysis of bacterial communities in rhizosphere soil of different resistant adzuki beans under soybean cyst nematode stress ..... GUO Zi-wen, CHEN Jing, JIAO Li-ping, LI Peng-fei, LIU Da-wei

- 1718 Effects of commercial organic fertilizers on red soil aggregates distribution, yield, quality and nutrient utilization efficiency of flue-cured tobacco  
..... ZHANG Xiao-wei, LIU Jia-hong, DAI Shao-ming, ZHANG Ke, YU Xiao-fen, QIU Xue-li, ZOU Bing-li, YANG Shu-ming
- 1725 Effects of decay agents and auxiliary materials on physicochemical properties and microbiota structure of dairy cow manure compost ..... ZHU Jian-wei, BI Jiang-tao, LI Wen-bing, JIA Yuan-chao, MAO Rui-fan
- 1737 Spatial-temporal evolution of ecosystem service value in rural settlements based on land use change  
..... LI Ze, WU Bo-meng

## AGRICULTURAL ECO-ENVIRONMENT

- 1748 Utilization efficiency of agricultural water in Yunnan province under constraint conditions of carbon emission and water pollution  
..... YANG Rui, WANG Long, HE Yong-mei, LIANG Quan
- 1758 Ecological stability evaluation of artificial sand fixation forest in eastern Horqin Sandy Land based on structural equation model  
..... WEN Ming, YUE Yong-jie, GUO Jing-yi, ZHONG Qi-han, ZHAO Kai, CUI Ying

## ANIMAL SCIENCE

- 1770 Cloning and expression characteristics analysis of CDS region of bovine *EGR2* gene transcript *XI*  
..... HE Li-xia, LIU Shuang, WANG Shu-zhe, FENG Xue, HU Chun-li, MA Yun
- 1779 Coding region cloning, tissue expression profile and bioinformatics analysis of bovine *CAMK4* gene  
..... BAO Bin-wu, REN Qian-qian, WANG Jin-peng, LI Yan-xia, FENG Fen, LUORENG Zhuo-ma, WANG Xing-ping
- 1787 Effects of bifidobacterium supplementation on growth performance and fecal microbial diversity of Oula sheep  
..... WU Zhan-yue, WU Sen
- 1798 Effects of grazing and housing feeding patterns on meat quality, rumen environment and microbiota structure of Tan sheep  
..... GUO Shuai, YANG Hui-chao, LI Rui-guo, GAO Qiao-xian, ZHANG Liang-liang, WANG Zhan-jun, XIN Guo-sheng
- 1808 Construction of recombinant goatpox virus expressing of ORFV *FIL* by deleting the *I35* gene  
..... YU Yuan-di, MU Hao, ZHANG Yang, ZHENG Hua, LI Xing, FU Li-zhi

## AGRICULTURAL ECONOMY

- 1814 Temporal and spatial differentiation law and path selection of inter provincial agricultural input-output efficiency in China  
..... DENG Lu, YUAN Sheng-bo, BAI Ping, LI Hui-fang

# 《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8月28日出版

2023年第36卷第8期

Southwest China Journal of

Agricultural Sciences (Monthly)

Vol.36 No.8 2023

Published on August 28, 2023

主管: 四川省农业农村厅

主办: 四川省农业科学院、云南省农业科学院、  
贵州省农业科学院、广西壮族自治区农业科学院、  
西藏自治区农牧科学院、重庆市农业科学院

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: 35.00元