

中华人民共和国教育部 主管
西南大学 主办

NATURAL SCIENCE EDITION
JOURNAL OF SOUTHWEST UNIVERSITY
自然科学版

西南大學學報



中国科学引文数据库 (CSCD) 来源期刊 中文核心期刊
中国精品科技期刊 中国高校百佳科技期刊
川渝一流科技期刊 重庆市高品质科技期刊
重庆市出版专项资金资助期刊

9 Vol. 45
September 2023

目 次

· 荞麦品质育种与高效栽培专题 ·

- 苦荞种质资源芦丁含量与 SSR 标记关联分析 吴怡超, 李晓瑜, 何星星, 岳林清, 崔静斌, 丁梦琦, 张建, 易泽林, 方小梅 (002)
- 不同种植模式对重庆荞麦产量和发育的影响 张瑞丰, 张智勇, 陶建波, 王艺钢, 雷蕾, 阮仁武, 易泽林 (012)
- 硅肥和纳米土壤材料配施对苦荞倒伏的影响 陶建波, 伍浩天, 王艺钢, 张瑞丰, 雷蕾, 方小梅, 易泽林 (025)
- 基于无人机多光谱的荞麦产量估测研究 徐鑫, 郝瑶, 唐恬, 方小梅, 易泽林 (036)

· 农业与生命科学 ·

- 基于 RUSLE 的鄱阳湖流域土壤侵蚀时空特征及影响因素分析 谭永滨, 谢剑亮, 冉江华, 王毓乾, 艾金泉, 唐瑶, 王瑛 (046)
- 基于多目标重金属元素低积累大豆品种筛选 柴冠群, 王丽, 刘桂华, 蒋亚, 秦松, 范成五, 田小松 (057)
- 结球甘蓝黑腐病抗性评价及鉴定方法比较研究 刘霄芸, 杨志强, 朱运, 彭奥, 任雪松, 司军, 宋洪元, 李勤菲 (067)
- 毕节地区 6 个绵羊品种 *FecB* 基因微卫星座位多态性研究 宋德荣, 吴瑛, 林如涛, 单春兰, 马金萍, 孙忠鑫, 熊艳玲, 刘勇庆, 胡飞飞 (076)

· 经济研究 ·

- 长江经济带区域协调发展格局及影响因素组态研究 刘晓雨, 杨庆媛, 刘燕, 张猛, 周璐璐, 陈鸿基 (085)
- 乡村振兴与共同富裕耦合协调发展: 分布动态、空间差异及收敛性研究 周利平, 左缘缘 (098)
- 旅游业对国民经济的内在传导机制研究——以广东旅游经济发展效应为例 李朝军 (114)

· 地球与环境科学 ·

- 陆面资料对复杂地形气温和降水模拟的影响——以济南市为例 李恬, 李怀刚, 何建军, 郑丽娜, 何鹏程 (124)
- 沱江内江段支流底泥重金属污染及生态风险 胡建美, 游宇, 宋忱馨, 蔡然, 王贵强, 王哲, 李宏 (132)

· 工程与信息技术 ·

- 铝合金仿生非光滑 MAO-HDTM 复合膜的构建及减黏脱附研究 曾舜柯, 翟彦博, 彭和, 魏子伟, 张毅, 胡小骞 (142)
- 黄连根茎物理力学特性试验性研究 李敏, 姚亮华, 陈迅, 谷明先, 赵世龙, 曾百功, 谢守勇 (153)
- 重庆市轨交客流与土地利用混合度耦合协调关系研究 牟风云, 黄淇, 王俊秀, 何勇, 张用川 (162)
- 基于临床验方的六金颗粒制备及质量标准研究 罗毅, 秦金森, 张荣飞, 刘子夜, 曹桂云, 姚元成, 孟兆青, 容蓉 (171)

JOURNAL OF SOUTHWEST UNIVERSITY

(NATURAL SCIENCE EDITION)

Vol. 45 No. 9

Total No. 345

Sep. 20, 2023

CONTENTS

Association Analysis of Rutin Content with SSR Markers in Tartary Buckwheat

Germplasm Resources WU Yichao, LI Xiaoyu, HE Xingxing,
YUE Linqing, CUI Jingbin, DING Mengqi, ZHANG Jian, YI Zelin, FANG Xiaomei (002)

Effect of Different Planting Patterns on Yield and Plant Growth of

Buckwheat in Chongqing ZHANG Ruifeng, ZHANG Zhiyong,
TAO Jianbo, WANG Yigang, LEI Lei, RUAN Renwu, YI Zelin (012)

Effect of Silica Fertilizer and Nano Soil Moisture Material Application on

Tartary Buckwheat Lodging TAO Jianbo, WU Haotian,
WANG Yigang, ZHANG Ruifeng, LEI Lei, FANG Xiaomei, YI Zelin (025)

Research on Buckwheat Yield Estimation Based on UAV Multi-Spectral Spectrum

..... XU Xin, HAO Yao, TANG Tian, FANG Xiaomei, YI Zelin (036)

Analysis of Spatio-Temporal Change and Influencing Factors of Soil Erosion in

Poyang Lake Basin Based on RUSLE TAN Yongbin, XIE Jianliang,
RAN Jianghua, WANG Yuqian, AI Jinquan, TANG Yao, WANG Ying (046)

Screening of Soybean Varieties with Low Accumulation of Heavy Metals Based on

Multi-Object Elements CHAI Guanqun, WANG Li,
LIU Guihua, JIANG Ya, QIN Song, FAN Chengwu, TIAN Xiaosong (057)

Evaluation Black Rot Resistance and Comparison Identification

Methods in Cabbage LIU Xiaoyun, YANG Zhiqiang,
ZHU Yun, PENG Ao, REN Xuesong, SI Jun, SONG Hongyuan, LI Qinfei (067)

Study on Microsatellite Polymorphism of *FecB* Gene of Six Sheep

Breeds in Bijie SONG Derong, WU Ying, LIN Rutao, SHAN Chunlan,
MA Jinping, SUN Zhongxin, XIONG Yanling, LIU Yongqing, HU Feifei (076)

Study on Regional Coordinated Development Pattern and Influencing Factors of

Configuration of the Yangtze River Economic Belt LIU Xiaoyu,

YANG Qingyuan, LIU Yan, ZHANG Meng, ZHOU Lulu, CHEN Hongji (085)

Coupling and Coordinated Development of Rural Revitalization and Common Prosperity:

A Study on Distribution Dynamics, Spatial Differences and Convergence

..... ZHOU Liping, ZUO Yuanyuan (098)

Research on the Internal Transmission Mechanism of Tourism to National Economy

—Taking the Development Effect of Guangdong Tourism

Economy as an Example LI Chaojun (114)

Impact of Different Land Surface Data on Temperature and Precipitation Simulation over

Complex Terrain —Take City of Ji'nan as an Example LI Tian,

LI Huaigang, HE Jianjun, ZHENG Lina, HE Pengcheng (124)

Distribution Characters and Ecological Risk Assessment of Heavy Metals in Sediment of

Typical Tributaries of Tuojiang River (Neijiang Reach) HU Jianmei, YOU Yu,

SONG Chenxin, CAI Ran, WANG Guiqiang, WANG Zhe, LI Hong (132)

Construction and Viscosity Desorption Research of Biomimetic Non-Smooth MAO-HDTM

Film of Aluminum Alloy ZENG Shunke, ZHAI Yanbo,

PENG He, WEI Ziwei, ZHANG Yi, HU Xiaoqian (142)

Experimental Study on Physical and Mechanical Properties of Rhizomes of

Coptis Chinensis LI Min, YAO Lianghua,

CHEN Xun, GU Mingxian, ZHAO Shilong, ZENG Baigong, XIE Shouyong (153)

Research on the Coupling and Coordination Relationship between Passenger Flow of

Rail Transit Stations and Mixing Degree of Station Area Land Use-Taking

Chongqing as an Example MU Fengyun,

HUANG Qi, WANG Junxiu, HE Yong, ZHANG Yongchuan (162)

Study on Preparation Technology and Quality Standard of Liujin Granules Based on

Clinical Experience LUO Yi, QIN Jinmiao, ZHANG Rongfei,

LIU Ziye, CAO Guiyun, YAO Yuancheng, MENG Zhaoqing, RONG Rong (171)

西南大学学报 (自然科学版)

XINANDAXUE XUEBAO(ZIRANKEXUEBAN)

(月刊) 1957年创刊

第45卷第9期(总第345期) 2023年9月出版

主管单位: 中华人民共和国教育部

主办单位: 西南大学

主 编: 王进军

副 主 编: 周常勇, 欧 宾

执行编辑: 包 颖; 英文编辑: 赵晓春

出版单位: 西南大学学报(自然科学版)编辑部

邮编地址: 400715 重庆市北碚区天生路2号

电 话: (023)68254576 68252540

网 址: <http://xbbjb.swu.edu.cn>

投稿网址: <http://xbgjxt.swu.edu.cn>

印刷单位: 重庆市国丰印务有限责任公司

发行方式: 公开发行

发行单位: 中国邮政集团有限公司重庆市分公司(国内)

中国国际图书贸易集团有限公司(国外)

订 购: 全国各地邮政公司

JOURNAL OF SOUTHWEST UNIVERSITY

Natural Science Edition (Issued Monthly) Since 1957

Vol.45 No.9(Sum No.345) September 2023

Competent Authorities: the Ministry of Education of
the People's Republic of China

Sponsor: Southwest University

Editor-in-chief: WANG Jinjun

Deputy Editor: ZHOU Changyong, OU Bin

Executive Editor: Bao Ying; English Editor: ZHAO Xiaochun

Edited and Published: Journal of Southwest University

(Natural Science Edition) Editorial Department

Postcode and Address: No.2, Tiansheng Road, Beibei Chongqing, 400715

Tel: (023)68254576 68252540

Web: <http://xbbjb.swu.edu.cn>

<http://xbgjxt.swu.edu.cn>

Printed: Chongqing Guofeng Printing Co., Ltd.

Mode of Distribution: Public Offerings

Distributor: China Post Group Chongqing Branch (National)

China International Book Trading Corporation (International)

Order: Each Post Office in China



ISSN 1673-9868



09>

9 771673 986236

国内邮发代号: 78-166

ISSN 1673-9868

国外发行代号: BM4987

CN 50-1189/N

国内定价: 20.00 元