

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 |

2022

第35卷 第4期  
Vo1.35 No.4

根际微生物专辑



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

《西南农业学报》编辑委员会  
2022年4月

## 目 次

### 根际微生物

- 729 粉垄耕作木薯根际与非根际土壤的细菌群落结构多样性差异 ..... 覃锋燕, 杨慰贤, 彭晓辉, 黎亮武, 阳太亿, 周佳, 韦茂贵, 申章佑
- 740 有机肥施用量对玉米产量、土壤养分及生物活性的影响 ..... 司海丽, 纪立东, 刘菊莲, 柳晓桐, 郑淑欣
- 748 农田微塑料对水稻秸秆分解及微生物活性的影响 ..... 秦宇辉, 李芬, 肖佳敏, 林永慧, 何兴兵
- 757 内生菌与根际细菌对棉花的促生与诱导抗病作用 ..... 佐长庚, 王静怡, 牛新湘, 刘萍, 管力慧, 党文芳, 杨红梅, 楚敏, 王宁, 林青, 王有武, 娄恺, 史应武
- 764 不同梯度氮磷钾施用量对云南植烟土壤细菌群落结构与多样性的影响 ..... 王志远, 阮彦楠, 王伟, 陈检锋, 赵文军, 陈华, 付利波
- 772 基于高通量测序分析辣椒/玉米套作对辣椒根际土壤细菌多样性的影响 ..... 许艺, 李红, 巩雪峰, 陈鑫, 宋占锋
- 780 生物有机肥调控的碱性植烟土壤微生物群落多样性特征 ..... 潘永瑜, 包玲凤, 杨佩文, 沈广材, 张庆, 尹兴盛, 施竹凤, 裴卫华, 刘月静, 杨光伟, 杨明英
- 790 烟草黑胫病生防菌筛选及对根际土壤微生物群落的影响 ..... 杨应美, 卢灿华, 罗朝旺, 苏家恩, 吴德喜, 夏振远
- 797 不同生防菌剂组合及施用方式对马铃薯疮痂病的防治效果及促生作用 ..... 王鹏程, 金光辉, 张春雨, 李鑫
- 804 基于高通量测序的魔芋根际土壤真菌多样性分析 ..... 王佰涛, 杨文玲, 雷高, 李珊珊, 刘德海
- 812 北苍术根腐病植株根际土壤真菌群落多样性分析 ..... 高鑫媛, 赵红玲, 白茹玥, 李哲, 魏金月, 赵蓝青青, 赵春颖
- 822 烟草黑胫病植株根际土壤真菌群落多样性及结构分析 ..... 方宇, 白涛, 刘冬梅, 韩小女, 刘舜, 王瑞宝, 郭永升, 陈小龙, 王柄权, 程凌寒, 黄飞燕, 余磊, 蔡永占, 刘佳妮
- 831 镍胁迫下根际促生菌对紫花地丁生长和镍含量的影响 ..... 杨明洁, 张晓曼, 赵蔓
- 840 接种五种根系真菌对油松幼苗促生效应的研究 ..... 徐玲洁, 郑妍妍, 冯花蕾, 周勇
- 848 间作桃树对石榴枯萎病土壤真菌多样性的改善研究 ..... 周银丽, 韦福翠, 张德刚, 杨伟, 胡先奇
- 855 马铃薯早疫病拮抗细菌 WK-1 的筛选鉴定及其生物学特性分析 ..... 王怡凡, 刘巍, 朱其立, 孙敏, 李延锋, 朱建强
- 864 不同植物菌根真菌对石竹科花卉生理特征的影响 ..... 胡乃文, 王平, 陈科宇, 庞雪, 纪宝明
- 871 烟草青枯病病株根际土壤可培养细菌多样性特征分析 ..... 申云鑫, 沈广材, 包玲凤, 潘永瑜, 张庆, 周旭东, 尹兴盛, 张荣琴, 陈齐斌, 何永宏, 杨佩文
- 879 菌草“绿洲一号”根际土壤中优势菌株的筛选与菌落 PCR 鉴定 ..... 肖之奇, 林占熲
- 889 樱桃果园生草对土壤微生态的影响 ..... 赵柏霞, 闫建芳, 潘凤荣

- 896 罗田板栗外生菌根真菌多样性研究 ..... 徐碧林,王 政,罗周瑜,武 卉,郑贺元,郑永良
- 906 健康与患根腐病草莓根际、非根际及根内细菌群落多样性 ..... 戴瑞卿,赖宝春,曾天宝,吴振强,王家瑞
- 915 槟榔间作香露兜对土壤细菌群落结构和多样性的影响 ..... 钟壹鸣,张 昂,王志勇,秦晓威,廖 丽,吉训志,鱼 欢
- 924 短期内有机肥增施对高原土壤养分和细菌群落的影响 ..... 田夏琼,关统伟,王淑英,汪兰云,张迎春,李 峻
- 932 猕猴桃苗不同生长时期根际细菌群落结构分析 ..... 任春光,苏文文,饶念贤,龙云川,王加国,李苇洁
- 941 槟榔间作香露兜模式下土壤微生物区系分析 ..... 张 昂,钟壹鸣,鱼 欢,吉训志,宗 迎,贺书珍,秦晓威
- 950 施磷和 AM 真菌互作对棉花生长和磷素吸收的影响 ..... 侯天钰,张应榕,蔡方源,马 悅,李 伟,赵玉鹏,陈波浪
- 957 红棕杜鹃根系真菌群落组成与多样性分析 ..... 彭黎明,蒋显锋
- 964 不同母质发育橡胶林土壤微生物特征研究 ..... 赵春梅,王文斌,Didier Lesueur,张永发,薛欣欣,罗雪华,李晓波
- 972 烟蒜轮作对易感病烟田土壤真菌群落结构的影响 ..... 陈玉蓝,林正全,拓阳阳,丁亚茹,李红丽,王 岩

## Contents

### RHIZOSPHERE MICROBE

- 729 Difference in the diversity of bacterial community structure in rhizosphere and non-rhizosphere soil of cassava in Fenlong tillage  
QIN Feng-yan, YANG Wei-xian, PENG Xiao-hui, LI Liang-wu, YANG Tai-yi, ZHOU Jia, WEI Mao-gui, SHEN Zhang-you
- 740 Effects of organic fertilizer application rate on maize yield, soil nutrients and biological activity  
..... SI Hai-li, JI Li-dong, LIU Ju-lian, LIU Xiao-tong, ZHENG Shu-xin
- 748 Effects of farmland microplastic on rice straw decomposition and microbial activity  
..... QIN Yu-hui, LI Fen, XIAO Jia-min, LIN Yong-hui, HE Xing-bing
- 757 Effects of endophytes and rhizosphere bacteria on cotton growth promotion and disease resistance induction  
..... ZUO Chang-geng, WANG Jing-yi, NIU Xin-xiang, LIU Ping, GUAN Li-hui, DANG Wen-fang,  
YANG Hong-mei, CHU Min, WANG Ning, LIN Qing, WANG You-wu, LOU Kai, SHI Ying-wu
- 764 Effects of different gradient recommended application amounts of nitrogen, phosphorus and potassium on bacterial community  
structure and diversity in tobacco-growing soil of Yunnan province  
..... WANG Zhi-yuan, RUAN Yan-nan, WANG Wei, CHEN Jian-feng, ZHAO Wen-jun, CHEN Hua, FU Li-bo
- 772 Effects of pepper/maize intercropping on soil bacterial diversity in pepper rhizosphere analyzed by high-throughput  
sequencing technology ..... XU Yi, LI Hong, GONG Xue-feng, CHEN Xin, SONG Zhan-feng
- 780 Diversity characteristics of microbial communities in alkaline tobacco-growing soils regulated by bio-organic fertilizers  
PU Yong-yu, BAO Ling-feng, YANG Pei-wen, SHEN Guang-cai, ZHANG Qing, YIN Xing-sheng, SHI Zhu-feng,  
PEI Wei-hua, LIU Yue-jing, YANG Guang-wei, YANG Ming-ying
- 790 Screening of antagonistic bacteria against tobacco black shank and effect on microbial communities in tobacco rhizosphere soil  
..... YANG Ying-mei, LU Can-hua, LUO Chao-wang, SU Jia-en, WU De-xi, XIA Zhen-yuan
- 797 Biological control and growth promoting effect of potato common scab with different biocontrol agents and application method  
..... WANG Peng-cheng, JIN Guang-hui, ZHANG Chun-yu, LI Xin
- 804 Analysis of fungal diversity in rhizosphere soil of konjac based on high-throughput sequencing  
..... WANG Bai-tao, YANG Wen-ling, LEI Gao, LI Shan-shan, LIU De-hai
- 812 Diversity analysis of soil fungal communities in the inter-rhizosphere of *Atractylodes chinensis* (DC.) Koidz. root rot plants  
..... GAO Xin-yuan, ZHAO Hong-ling, BAI Ru-yue, LI Zhe, WEI Jin-yue, ZHAO Lan-qingqing, ZHAO Chun-ying
- 822 Diversity and structure of the fungal community in rhizosphere soil of tobacco plants with black shank disease  
..... FANG Yu, BAI Tao, LIU Dong-mei, HANG Xiao-nv, LIU Shun, WANG Rui-bao, GUO Yong-sheng,  
CHEN Xiao-long, WANG Bing-quan, CHENG Ling-han, HUANG Fei-yan, YU Lei, CAI Yong-zhan, LIU Jia-ni
- 831 Effects of plant growth-promoting rhizobacteria on growth and cadmium content of *Viola philippica* under cadmium stress  
..... YANG Ming-jie, ZHANG Xiao-man, ZHAO Man
- 840 Effects of inoculation with five root fungi on growth of *Pinus tabulaeformis* seedlings  
..... XU Ling-jie, ZHENG Yan-yan, FENG Hua-lei, ZHOU Yong
- 848 Effect of intercropping peach trees on the fungi diversity in pomegranate wilt disease soil  
..... ZHOU Yin-li, WEI Fu-cui, ZHANG De-gang, YANG Wei, HU Xian-qi
- 855 Screening and identification of potato early blight antagonistic bacteria WK-1 and analysis of its biological characteristics  
..... WANG Yi-fan, LIU Wei, ZHU Qi-li, SUN Min, LI Yan-feng, ZHU Jian-qiang
- 864 Effects of different plant mycorrhizal fungi on physiological characteristics of Caryophyllaceae flowers  
..... HU Nai-wen, WANG Ping, CHEN Ke-yu, PANG Xue, JI Bao-ming

- 871 Diversity of culturable bacteria in rhizosphere soil of tobacco with bacterial wilt disease  
..... SHEN Yun-xin, SHEN Guang-cai, BAO Ling-feng, PU Yong-yu, ZHANG Qing, ZHOU Xu-dong, YIN Xing-sheng,  
ZHANG Rong-qin, CHEN Qi-bin, HE Yong-hong, YANG Pei-wen
- 879 Screening and Colony PCR identification of dominant microflora in rhizosphere soil of Juncao ‘Oasis No. 1’  
..... XIAO Zhi-qi, LIN Zhan-xi
- 889 Effects of different grasses cultivation in sweet cherry orchard on soil micro-ecology  
..... ZHAO Bai-xia, YAN Jian-fang, PAN Feng-rong
- 896 Community structure of ectomycorrhizae fungi associated with *Castanea mollissima* in major producing area of Chinese chestnut  
(Luotian)  
..... XU Bi-lin, WANG Zheng, LUO Zhou-yu, WU Hui, ZHENG He-yuan, ZHENG Yong-liang
- 906 Bacterial community diversity in rhizosphere, non-rhizosphere and root tissue of healthy and root rot strawberry plants  
..... DAI Rui-qing, LAI Bao-chun, ZENG Tian-bao, WU Zhen-qiang, WANG Jia-rui
- 915 Effects of *Areca catechu* L. intercropping *Pandanus amaryllifolius* Roxb. on soil bacterial flora and diversity  
..... ZHONG Yi-ming, ZHANG Ang, WANG Zhi-yong, QIN Xiao-wei, LIAO Li, JI Xun-zhi, YU Huan
- 924 Effects of short-term application of organic fertilizer on soil nutrients and bacterial community in plateau  
..... TIAN Xia-qiong, GUAN Tong-wei, WANG Shu-ying, WANG Lan-yun, ZHANG Ying-chun, LI Jun
- 932 Analysis on rhizosphere bacterial community structure of Kiwifruit seedlings at different growth stages  
..... REN Chun-guang, SU Wen-wen, RAO Nian-xian, LONG Yun-chuan, WANG Jia-guo, LI Wei-jie
- 941 Effect of *Areca catechu* L. intercropping with *Pandanus amaryllifolius* Roxb. on soil microflora  
..... ZHANG Ang, ZHONG Yi-ming, YU Huan, JI Xun-zhi, ZONG Ying, HE Shu-zhen, QIN Xiao-wei
- 950 Effects of phosphorus application and AM fungi interaction on cotton growth and phosphorus absorption  
..... HOU Tian-yu, ZHANG Ying-rong, CAI Fang-yuan, MA Yue, LI Wei, ZHAO Yu-peng, CHEN Bo-lang
- 957 Analysis of fungal community structure and diversity in the roots of *Rhododendron rubiginosum*  
..... PENG Li-ming, JIANG Xian-feng
- 964 Characteristics of soil microorganisms in rubber plantation with different parent materials  
..... ZHAO Chun-mei, WANG Wen-bin, Didier Lesueur, ZHANG Yong-fa, XUE Xin-xin, LUO Xue-hua, LI Xiao-bo
- 972 Effects of tobacco garlic crop rotation on fungal community structure of susceptible tobacco soil  
..... CHEN Yu-lan, LIN Zheng-quan, TUO Yang-yang, DING Ya-ru, LI Hong-li, WANG Yan

# 《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

2022年4月28日出版

2022年第35卷第4期

Southwest China Journal of

Agricultural Sciences (Monthly)

Vol.35 No.4 2022

Published on April 28, 2022

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