

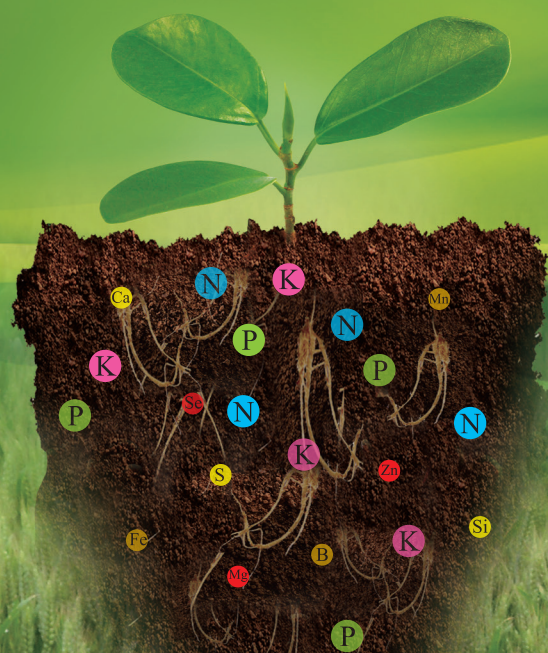
中国科技核心期刊
全国中文核心期刊
中国农业核心期刊

ISSN 1673-6257
CN 11-5498/S

中国土壤与肥料

SOIL AND FERTILIZER SCIENCES IN CHINA

2023年 第4期



二〇二三年 第四期

ISSN 1673-6257



9 771673 625234

04

主管：中华人民共和国农业农村部

主办：中国农业科学院农业资源与农业区划研究所

中国植物营养与肥料学会

中国土壤与肥料

ZHONGGUO TURANG YU FEILIAO

月刊(1964 年创刊)

2023 年第 4 期(总第 312 期)

2023 年 4 月 25 日出版

主 编 易可可

执行主编 卢昌艾

编 委(以姓名笔画为序)

王 旭 王秋兵 石孝均

白由路 刘宝存 孙建光

李 俊 李晓林 杨俊诚

吴立忠 张甘霖 张旭东

林新坚 周建斌 郑海春

赵秉强 逢焕成 徐明岗

黄子蔚 黄鸿翔 曾思坚

谢良商 鲁剑巍 魏 丹

责任编辑 单秀枝

英文编辑 武淑霞

主办单位 中国农业科学院农业资源与农业
区划研究所

中国植物营养与肥料学会

编辑出版 《中国土壤与肥料》编辑部

地 址 北京中关村南大街 12 号

邮政编码 100081

网 址 <http://chinatrfl.alljournal.net.cn>

电子信箱 trfl@caas.cn

电 话 (010)82108656

传 真 (010)82106225

印 刷 北京科信印刷有限公司

发 行 北京市报刊发行局

订 阅 全国各地邮局

邮发代号 2-559

订 价 40.00 元

中国标准连续出版物号 ISSN 1673-6257
CN 11-5498/S

广告经营许可证 京海市监广登字 20200009 号

目 次

· 研究报告 ·

- 玛纳斯河流域绿洲农区残余盐渍化土壤质量评价…………… 陈伟业,杨小虎,杨海昌,张风华(1)
- 山东省长期连作杨树人工林的土壤理化特性与综合肥力评价…………… 贾国建,杜振宇,马丙尧,井大炜,刘方春,刘幸红,李世会,董祎琳,马海林(8)
- 生物炭与有机肥施用对红壤理化性质及氮素径流损失的影响…………… 杨 宇,李成蓉,彭 银,曾 猛,达布希拉图(16)
- 长期秸秆还田对潮土土壤团聚体碳氮和作物产量的影响…………… 刘学彤,曹彩云,郑春莲,党红凯,马俊永,李科江(25)
- 黄河宁夏段泥沙和灌淤土团聚体速效氮磷分布特征…………… 赵 营,刘晓彤,冒辛平,罗健航,柯 英,张学军(34)
- 冻融对农田黑土可溶性氮库、氮转化过程及酶活性的影响 …… 刘 艳,隋世江,包红静,邢月华,隗英华(40)
- 沼液农用对土壤氮素形态影响的整合分析…………… 宋德刚,闵欣月,杜连凤,李顺江,李 伟,曲明娟,刘 静(47)
- 山药田土壤微生物群落分布特征及间作豆科植物的改良效果…………… 杨雪贞,罗同阳,赵雪萍,章淑艳,许华森,孙志梅(54)
- 酸碱度对沼液土壤理化性质及粪大肠杆菌消长的影响…………… 乔成桓,杨宇航,王冬奇,杨守军(61)
- 县域稻麦轮作系统碳足迹分析——以江苏兴化为例…………… 任筱童,柴以潇,张 莹,谢凯柳,王 敏,郭俊杰,郭世伟(67)
- 九叶青花椒不同生育期矿质养分累积规律及分配特征研究…………… 孔发明,魏 勇,徐文静,王 帅,赵敬坤,张建伟,彭 清,王 洋,李志琦,蔡国学,罗 博,石孝均,王 洁(76)
- 吉林省西部玉米氮、磷、钾肥施用效果及养分吸收利用特征…………… 孙 玲,孙志旭,尤 迪,于双成,朱健菲,刘振刚,王年一(85)
- 氮磷钾配施对滴灌甜菜经济产量的影响…………… 许鹏杰,周红亮,穆智光,张丽娟,黄睿敏,蒋玉康,赵永乐,曾 志,曹禹乾,路思瑶,胡华兵,樊 华(92)
- 稻麦轮作减量施肥技术研究…………… 熊又升,熊汉锋,郭衍龙,王海生,刘 威,严与向,谢媛园,周剑雄,杨立军(99)
- 种植密度和氮施用时期对不同大豆品种农艺性状和产量的影响…………… 周新雨,王天舒,任利东,王 丽,于淑婷,王 晶,宋爱英,尧水红(105)
- 有机无机配施及亏缺灌溉对关中地区冬小麦生长及氮素利用效

率影响·····	欧阳啸丰,宿顺顺,冯浩,吴淑芳,胡亚瑾,陈霁菲(114)
不同形态氮肥对玉米干物质、氮素积累及土壤氮素的影响·····	付帅,王艳群,刘晓明,付鑫,门明新,叶建勋,温敏,彭正萍(122)
缓控释氮肥对寒地水稻产量、氮肥利用率及氮在黑土中分布的影响·····	郑雨,姬景红,刘双全,赵月,马星竹,李杰(130)
稳定性液体氮肥在保护性耕作黑土中施用效果·····	王高旭,田耕,周佳丰,张晓岩,冯国忠,高强,张忠庆(137)
黄腐酸钾对甜瓜新品系“14-64”养分吸收、分配和产量的影响·····	段祥坤,王建玉,王志鹏(146)
三种镁肥在酸性土壤柑橘园中的施用效果·····	王昱桁,康福蓉,熊华烨,赵环宇,罗雅尹,易时来,杨云洪,石孝均,张跃强(155)
绿洲盐化潮土施锌对玉米生长和锌形态转化的影响·····	马前瑞,霍琳,杨思存,蔡立群,王成宝,温美娟(163)
土壤镉污染条件下叶面硒肥对生菜镉积累的影响·····	段雪娇,马倩倩,武均,滕柄钦,毕冬梅,马文军,蔡立群(170)
羽毛生物降解氨基酸肥对小白菜生长及品质的影响·····	高丽敏,郭东森,崔联明,魏启舜,周影,王琳,郭成宝(178)
不同采收期对菊苣根系营养成分和芽球产量的影响·····	冯秀娟,任冰如,牛冠婷,黄晓杰,朱超伟,孟秀花,丁晓琴,盖亚男,刘艳,陈剑(184)
土壤强还原处理对连作白菜根肿病的防治效果研究·····	张智浩,解国玲,吴流通,徐权杰,张永慧,张继来,林春,邓毅书,张乃明,苏友波(190)
不同处理方式食用菌菌渣微生物多样性鉴定及其环境因子关联分析·····	孟祥海,王佰成,张星哲,王延锋,李玉梅,任萍,王伟,李洪亮,刘畅(200)
牛粪及其蚓粪磷素生物化学特性分析·····	张勇勇,杨丽娟,赵凤艳(210)

· 专题综述 ·

我国畜禽粪肥还田对农田土壤抗性基因积累的影响综述·····	邹韵,张园,陈明龙,何文程,王义佳(220)
国内外有机肥料相关标准比对研究·····	李景,李国鹏,汪滨(230)

· 分析测试 ·

流动分析仪测定土壤有效磷含量的方法·····	李朝英,郑路,李华(238)
------------------------	----------------

· 信息 ·

中国农业科学院微信版“养分专家”上线·····	(封二)
《中国土壤与肥料》征稿征订·····	(封三)
《中国土壤与肥料》期刊概览·····	(封底)

· 广告 ·

江苏淮安大华生物科技有限公司·····	(封三)
---------------------	------

SOIL AND FERTILIZER SCIENCES IN CHINA

Monthly (Started in 1964)

No. 4, 2023 (Tot. No. 312)

Published on Apr. 25, 2023

Editor in Chief YI Ke-ke

Executive Editor in Chief LU Chang-ai

Members of Editorial Board

WANG Xu WANG Qiu-bing SHI Xiao-jun

BAI You-lu LIU Bao-cun SUN Jian-guang

LI Jun LI Xiao-lin YANG Jun-cheng

WU Li-zhong ZHANG Gan-lin ZHANG

Xu-dong LIN Xin-jian ZHOU Jian-bin

ZHENG Hai-chun ZHAO Bing-qiang

PANG Huan-cheng XU Ming-gang

HUANG Zi-wei HUANG Hong-xiang

ZENG Si-jian XIE Liang-shang

LU Jian-wei WEI Dan

Sponsored by

Institute of Agricultural Resources and Re-
gional Planning, CAAS

Chinese Society of Plant Nutrition and Fertil-
izer Sciences

Published by Editorial Department of Soil and
Fertilizer Sciences in China

Address No. 12 South Street, Zhongguancun,
Beijing

Postcode 100081

URL <http://chinatrfll.alljournal.net.cn>

E-mail trfl@caas.cn

Tel (010) 82108656

Fax (010) 82106225

Oversea Distributor

China International Book Trading Corporation

CONTENTS

Soil quality assessment of residual salinization in oasis agricultural area
of Manasi river basin CHEN Wei-ye, YANG Xiao-hu, YANG Hai-chang, ZHANG Feng-hua (1)

Soil physico-chemical characteristics and comprehensive fertility of
long-term continuous cropping poplar plantations in Shandong province
..... JIA Guo-jian, DU Zhen-yu, MA Bing-yao, JING Da-
wei, LIU Fang-chun, LIU Xing-hong, LI Shi-hui, DONG Yi-lin, MA Hai-lin (8)

Effects of biochar and organic fertilizer application on physical and
chemical properties of red soil and nitrogen losses by runoff
..... YANG Yu, LI Cheng-rong, PENG Yin, ZENG Meng, Dabuxilatu (16)

Effects of long-term straw return on carbon and nitrogen contents of
aggregates and crop yield in fluvo-aquic soil LIU Xue-tong, CAO
Cai-yun, ZHENG Chun-lian, DANG Hong-kai, MA Jun-yong, LI Ke-jian (25)

Distribution characteristics of available nitrogen and phosphorus in the
aggregates of sediment and the irrigation silting soils in Ningxia section
of the Yellow River ZHAO Ying,
LIU Xiao-tong, MAO Xin-ping, LUO Jian-hang, KE Ying, ZHANG Xue-jun (34)

Effects of freeze-thaw on dissolved nitrogen pool, nitrogen transformation
processes and enzyme activity in farmland black soil
LIU Yan, SUI Shi-jian, BAO Hong-jing, XING Yue-hua, JUAN Ying-hua (40)

Effects of biogas slurry application on the contents and forms of soil
nitrogen using a Meta-analysis SONG De-gang, MIN
Xin-yue, DU Lian-feng, LI Shun-jiang, LI Wei, QU Ming-juan, LIU Jing (47)

Distribution characteristics of soil microbial community in yam field and
improvement effect of intercropping legumes YANG Xue-zhen, LUO
Tong-yang, ZHAO Xue-ping, ZHANG Shu-yan, XU Hua-sen, SUN Zhi-mei (54)

Effects of soil pH on soil physico-chemical properties and population
dynamics of fecal *Escherichia coli* in soil combined with biogas slurry...
QIAO Cheng-huan, YANG Yu-hang, WANG Dong-qi, YANG Shou-jun (61)

Carbon footprint analysis of rice-wheat rotation system at county level:
A case study of Xinghua, Jiangsu province ... REN Xiao-tong, CHAI Yi-
xiao, ZHANG Ying, XIE Kai-liu, WANG Min, GUO Jun-jie, GUO Shi-wei (67)

Study on mineral nutrient accumulation and distribution characteristics
of *Zanthoxylum armatum* var. *novemfolius* at different growth stages ...
..... KONG Fa-ming, WEI Yong,

XU Wen-jing, WANG Shuai, ZHAO Jing-kun, ZHANG Jian-wei, PENG
Qing, WANG Yang, LI Zhi-qi, CAI Guo-xue, LUO Bo, SHI Xiao-jun, WANG Jie (76)

Effects of nitrogen, phosphorus and potassium fertilizer application and
characteristics of nutrient absorption and utilization of maize in western
of Jilin province SUN Ling, SUN Zhi-xu,
YOU Di, YU Shuang-cheng, ZHU Jian-fei, LIU Zhen-gang, WANG Nian-yi (85)

Effects of combined application of nitrogen, phosphorus and potassium on economic yield of sugarbeet under drip irrigation	···
·····	XU Peng-jie, ZHOU Hong-liang, MU Zhi-guang, ZHANG Li-juan, HUANG Rui-ming, JIANG Yu-kang, ZHAO Yong-le, ZENG Zhi, CAO Yu-qian, LU Si-yao, HU Hua-bing, FAN Hua (92)
Study on reduction fertilization technology of rice-wheat cropping system	·····
·····	XIONG You-sheng, XIONG Han-feng, GUO Yan-long, WANG Hai-sheng, LIU Wei, YAN Yu-xiang, XIE Yuan-yuan, ZHOU Jian-xiong, YANG Li-jun (99)
Effects of planting density and nitrogen application period on agronomic traits and yield of different soybean cultivars	·····
·····	ZHOU Xin-yu, WANG Tian-shu, REN Li-dong, WANG Li, YU Shu-ting, WANG Jing, SONG Ai-ying, YAO Shui-hong (105)
Effects of organic and inorganic fertilization and deficit irrigation on winter wheat growth and nitrogen utilization efficiency in Guanzhong region	·····
·····	OUYANG Xiao-feng, SU Shun-shun, FENG Hao, WU Shu-fang, HU Ya-jin, CHEN Ji-fei (114)
Dry matter, nitrogen accumulation of maize and soil nitrogen in response to different forms of nitrogen fertilizers	·····
·····	FU Shuai, WANG Yan-qun, LIU Xiao-ming, FU Xin, MEN Ming-xin, YE Jian-xun, WEN Min, PENG Zheng-ping (122)
Effects of slow and controlled release nitrogen fertilizer on rice yield, nitrogen use efficiency and nitrogen distribution in black soil in cold region	·····
·····	ZHENG Yu, JI Jing-hong, LIU Shuang-quan, ZHAO Yue, MA Xing-zhu, LI Jie (130)
Application effect of stable liquid nitrogen fertilizer in black soil with conservation tillage	·····
·····	WANG Gao-xu, TIAN Geng, ZHOU Jia-feng, ZHANG Xiao-yan, FENG Guo-zhong, GAO Qiang, ZHANG Zhong-qing (137)
Effects of potassium fulvic acid application on nutrition absorption, distribution and yield of melon line “14-64”	·····
·····	DUAN Xiang-kun, WANG Jian-yu, WANG Zhi-peng (146)
Effects of three magnesium fertilizers application on citrus orchard in acid soil	·····
·····	WANG Yu-heng, KANG Fu-rong, XIONG Hua-ye, ZHAO Huan-yu, LUO Ya-yin, YI Shi-lai, YANG Yun-hong, SHI Xiao-jun, ZHANG Yue-qiang (155)
Effects of zinc application on maize growth and zinc speciation transformation in saline fluvo-aquic soil of Hexi oasis area	·····
·····	MA Qian-rui, HUO Lin, YANG Si-cun, CAI Li-qun, WANG Cheng-bao, WEN Mei-juan (163)
Effects of foliar selenium fertilizer on cadmium accumulation in lettuce under cadmium pollution condition	·····
·····	DUAN Xue-jiao, MA Qian-qian, WU Jun, TENG Bing-qin, BI Dong-mei, MA Wen-jun, CAI Li-qun (170)
Effects of biodegradable amino acid fertilizer from feather on the growth and quality of pakchoi	·····
·····	GAO Li-min, GUO Dong-sen, CUI Lian-ming, WEI Qi-shun, ZHOU Ying, WANG Lin, GUO Cheng-bao (178)
Effects of different harvest dates on root nutrients and bud yield of <i>Cichorium intybus</i> L.	·····
·····	FENG Xiu-juan, REN Bing-ru, NIU Guan-ting, HUANG Xiao-jie, ZHU Chao-wei, MENG Xiu-hua, DING Xiao-qin, GAI Ya-nan, LIU Yan, CHEN Jian (184)
Study on the control effect of reductive soil disinfection on clubroot disease of continuous cropping Chinese cabbage	·····
·····	ZHANG Zhi-hao, XIE Guo-ling, WU Liu-tong, XU Quan-jie, ZHANG Yong-hui, ZHANG Ji-lai, LIN Chun, DENG Yi-shu, ZHANG Nai-ming, SU You-bo (190)
Identification of microbial diversity and correlation analysis of environmental factors of edible fungi residue with different treatment methods	·····
·····	MENG Xiang-hai, WANG Bai-cheng, ZHANG Xing-zhe, WANG Yan-feng, LI Yu-mei, REN Ping, WANG Wei, LI Hong-liang, LIU Chang (200)
Analysis of phosphorus biochemical characteristics of cow manure compost and vermicompost	·····
·····	ZHANG Yong-yong, YANG Li-juan, ZHAO Feng-yan (210)
Review on the effect of livestock and poultry manure returning to farmland on antibiotic resistance genes of farmland soil in China	·····
·····	ZOU Yun, ZHANG Yuan, CHEN Ming-long, HE Wen-cheng, WANG Yi-jia (220)
Comparative study on relevant standards of organic fertilizer in China and foreign countries	·····
·····	LI Jing, LI Guo-peng, WANG Bin (230)
Method for determination of effective phosphorus content in soil by flow analyzer	·····
·····	LI Zhao-ying, ZHENG Lu, LI Hua (238)