

中国土壤与肥料

ZHONGGUO TURANG YU FEILIAO

月刊(1964年创刊)

2022年第12期(总第308期)

2022年12月25日出版

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 30.00 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 ·

- 生物炭对砂壤土团聚体及其碳、氮分布的影响 杨卫君, 惠超, 邓天池, 陈雨欣, 宋世龙, 马阿娟 (1)
土壤有机质含量对红壤性稻田残留氮在团聚体内分布的影响 王静, 唐刚, 刘磊, 付文涛, 刘桃菊, 曾勇军, 陈金, 黄山 (10)
秸秆还田配施氮肥对河套平原砂壤土的物理特性和春玉米氮效率的影响 田磊, 屈佳伟, 于晓芳, 高聚林, 胡树平, 白雨, 李文博 (17)
不同有机肥料同一施氮水平对设施土壤的改良效应 吴荣, 杜颖, 刘善江, 孙昊, 薛文涛, 白杨, 陈倩 (27)
施肥对割草场土壤养分和化学计量学的影响 白玉婷, 卫智军, 夏江宝, 代景忠, 杨红军, 吕世杰, 张楚, 吕光萍, 闫瑞瑞 (36)
减氮施加生物炭对盐碱胁迫下甜菜根际土壤酶活性、根活力及产量的影响 卢强, 武沛然, 李健, 张瀚文, 王树峰, 赵佳楠, 王红光, 张贺, 王玉波, 李彩凤 (46)
有机肥与控释尿素配施对坡耕地土壤氮素淋溶及玉米产量的影响 于文勇, 葛祥菡, 孙娅婷, 王宝柱, 耿怡爽, 周春雨, 杨修一, 耿计彪 (53)
减量施氮对鲜食玉米产量、氮素利用及土壤硝态氮含量的影响 姜春霞, 刘化涛, 张伟, 杨柯, 张冬梅, 翟广谦, 王娟玲, 刘恩科 (61)
不同氮用量对新疆棉田土壤微生物的影响 李春梅, 王芳, 董合林, 马云珍, 徐文修, 张娜, 李鹏程, 万素梅, 徐清华 (68)
基质拌菌育苗对土壤微生物特性和番茄生长发育的影响 应利平, 刘玲, 张明科 (74)
象山“红美人”柑橘营养诊断研究 丰智松, 李增源, 刘静, 徐贺, 陈磊, 张卫峰, 顾莹 (82)
重庆垫江柑橘园土壤和叶片养分状况分析 陈泉, 何锦辉, 任杰群, 杨义, 张明海, 郑章云, 谭立新, 李天银, 白应文, 丁明亮 (92)
不同生态蔗区气候土壤差异对甘蔗生产的影响 刀静梅, 毛钧, 李如丹, 杨绍林, 邓军, 樊仙, 张跃彬 (102)
不同氮磷水平下小麦 - 蚕豆间作对产量稳定性的影响 李春宇, 覃潇敏, 肖靖秀, 汤利, 郑毅 (114)
不同氮钾肥用量对百香果生长、品质及产量的影响 李丹萍, 尺待泽, 李晶, 周先艳, 李进学, 付小猛, 董建梅, 杜玉霞 (123)

氮肥用量和运筹方式对再生稻产量品质和氮肥利用率的影响	余延丰,张富林,刘冬碧,吴茂前,张志毅,夏颖,范先鹏,王玲,肖依波,肖国平(133)
冬油菜季氮肥减量对后茬夏玉米氮素供应与产量的影响	杨勤,赵前,田效琴,李卓,刘永红,李伟(141)
磷添加对高氮条件下入侵植物节节麦竞争能力的影响	王宁,袁美丽,陈浩(146)
钾肥配施对滇重楼生长、菌根生态特征和皂苷含量的影响	李卓蔚,黎海灵,许凌峰,周游,赵晶晶,郭冬琴,周浓(154)
硅对猪屎豆、高丹草生长与养分释放规律的影响	郭紫惠,张炳辰,姚凯,王佳靓,张琼月,卞云婷,闫洋,常春荣(164)
尿素配施生物刺激素在棉花苗期叶面应用效果研究	刘帅,董合林,李鹏程,孙森,郑苍松(171)
毛叶苕子替代化学氮肥对幼龄柑橘氮素营养的贡献	延荷,方林发,邓茂林,刘正兰,石孝均,张宇亭(176)
黄河三角洲盐碱地毛叶苕子不同还田方式下腐解及养分释放特征	石一鸣,于春晓,李可心,张海波,王光美(183)
还田时期对绿肥用油菜腐解与养分释放规律的影响	苏港,王怡针,吴锡冬,李子芳,臧凤艳,王金龙,葛均筑(192)
碳氮比对叶菜废弃物好氧堆肥效果的影响	尹娇,包立,陈芙蓉,韩宇,张乃明,王静,夏凤武,董春雨,邓毅书(200)
解磷菌株 YR-P31 的分离、鉴定、生物学特性及其促生作用	王松,张小凡(206)

· 调查研究 ·

农业农村部负责的肥料产品登记管理现状分析	李华(213)
----------------------	---------

· 分析测试 ·

聚- γ -谷氨酸在农业中的应用及展望	张爽,丁芳,裴久勃,孙福军,张蕾,石元亮(218)
芽孢杆菌属 <i>Bacillus</i> 分类学研究进展	徐靖,牛邦彦,张亚南,魏海雷,张晓霞,高森(225)

· 专题综述 ·

能量色散 X 射线荧光光谱法快速检测含海藻酸水溶肥中 5 种重金属	高婧怡,赵修平,王宗义,严国富,刘明博,廖学亮,汤洁,杨爱珍(238)
-----------------------------------	-------------------------------------

· 广告信息 ·

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)
江苏淮安大华生物科技有限公司	(封三)
《中国土壤与肥料》期刊概览	(封底)

《中国土壤与肥料》2022 年总目次	(I)
--------------------	-----

SOIL AND FERTILIZER SCIENCES IN CHINA

Monthly (Started in 1964)

No. 12, 2022 (Tot. No. 308)

Published on Dec. 25, 2022

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 Regional Planning, CAAS
Chinese Society of Plant Nutrition and Fertilizer Sciences

Published by Editorial Department of Soil and Fertilizer Sciences in China

Address No. 12 South Street, Zhongguancun, Beijing

Postcode 100081

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

E-mail trfl@caas.cn

Tel (010)82108656

Fax (010)82106225

Oversea Distributor

China International Book Trading Corporation

CONTENTS

- Effects of biochar on aggregate and distribution of carbon and nitrogen in sandy loam YANG Wei-jun, HUI Chao, DENG Tian-chi, CHEN Yu-xin, SONG Shi-long, MA A-juan (1)
Effects of soil organic matter content on the distribution of residual nitrogen in aggregates in a red paddy soil... WANG Jing, TANG Gang, LIU Lei, FU Wen-tao, LIU Tao-ju, ZENG Yong-jun, CHEN Jin, HUANG Shan (10)
Effects of straw returning combined with nitrogen fertilizer on physical properties of sandy loam and nitrogen efficiency of spring maize in Hetao plain TIAN Lei, QU Jia-wei, YU Xiao-fang, GAO Ju-lin, HU Shu-ping, BAI Yu, LI Wen-bo (17)
Effects of different organic fertilizers at the same nitrogen application level on soil improvement in protected vegetable fields WU Rong, DU Ying, LIU Shan-jiang, SUN Hao, XUE Wen-tao, BAI Yang, CHEN Qian (27)
Effects of fertilizer application on the soil nutrient and stoichiometry in *Leymus chinensis* mowing meadow BAI Yu-ting, WEI Zhi-jun, XIA Jiang-bao, DAI Jing-zhong, YANG Hong-jun, LÜ Shi-jie, ZHANG Chu, LÜ Guang-ping, YAN Rui-rui (36)
The effect of nitrogen reduction and biochar application on soil enzyme activity, root vigor and yield of sugar beet rhizosphere under saline-alkali stress LU Qiang, WU Pei-ran, LI Jian, ZHANG Han-wen, WANG Shu-feng, ZHAO Jia-nan, WANG Hong-guang, ZHANG He, WANG Yu-bo, LI Cai-feng (46)
Effects of combined application of organic fertilizer and controlled-release urea on soil nitrogen leaching and maize yield in slope farmland YU Wen-yong, GE Xiang-han, SUN Ya-ting, WANG Bao-zhu, GENG Yi-shuang, ZHOU Chun-yu, YANG Xiu-yi, GENG Ji-biao (53)
Effect of reduced nitrogen application on yield, nitrogen utilization of fresh waxy maize and soil nitrate nitrogen content in Shanxi dryland ... JIANG Chun-xia, LIU Hua-tao, ZHANG Wei, YANG Ke, ZHANG Dong-mei, ZHAI Guang-qian, WANG Juan-ling, LIU En-ke (61)
Effects of different nitrogen application rates on soil microorganisms in Xinjiang cotton field LI Chun-me, WANG Fang, DONG He-lin, MA Yun-zhen, XU Wen-xiu, ZHANG Na, LI Peng-cheng, WAN Su-mei, XU Qing-hua (68)
Effects of microbial agents mixed with seedlings substrate on soil microbial characteristics and tomato growth and development YING Li-ping, LIU Ling, ZHANG Ming-ke (74)

Research on nutrient diagnosis of “Hongmeiren” citrus in Xiangshan	FENG Zhi-song, LI Zeng-yuan, LIU Jing, XU He, CHEN Lei, ZHANG Wei-feng, GU Ying (82)
Research for nutrient status of citrus orchard soils and leaves in Dianjiang county, Chongqing city ...	CHEN Quan, HE Jin-hui, REN Jie-qun, YANG Yi, ZHANG Ming-hai, ZHENG Zhang-yun, TAN Li-xin, LI Tian-yin, BAI Ying-wen, DING Ming-liang (92)
Effects of key climate and soil factors on sugarcane production in different ecological regions in China	DAO Jing-mei, MAO Jun, LI Ru-dan, YANG Shao-lin, DENG Jun, FAN Xian, ZHANG Yue-bin (102)
Effects of different nitrogen or phosphorus levels on yield stability of wheat and faba bean intercropping	LI Chun-yu, QIN Xiao-min, XIAO Jing-xiu, TANG Li, ZHENG Yi (114)
Effects of different nitrogen and potassium dosage on growth, quality and yield of passion fruit	LI Dan-ping, CUN Dai-ze, LI Jing, ZHOU Xian-yan, LI Jin-xue, FU Xiao-meng, DONG Jian-mei, DU Yu-xia (123)
Effect of nitrogen fertilizer application rate and strategy on yield, quality and nitrogen utilization of ratoon rice.....	YU Yan-feng, ZHANG Fu-lin, LIU Dong-bi, WU Mao-qian, ZHANG Zhi-yi, XIA Ying, FAN Xian-peng, WANG Ling, XIAO Yi-bo, XIAO Guo-ping (133)
Effect of reduced nitrogen applied to winter rape on the nitrogen supply and grain yield of the following summer maize	YANG Qin, ZHAO Qian, TIAN Xiao-qin, LI Zhuo, LIU Yong-hong, LI Wei (141)
Effect of phosphorus addition on the competitive ability of <i>Aegilops tauschii</i> under high nitrogen conditions	WANG Ning, YUAN Mei-li, CHEN Hao (146)
Effects of different potassium fertilizer combinations on the growth, mycorrhizal ecological characteristic and saponin content of <i>Paris polyphylla</i> var. <i>ynnanensis</i>	LI Zhuo-wei, LI Hai-ling, XU Ling-feng, ZHOU You, ZHAO Jing-jing, GUO Dong-qin, ZHOU Nong (154)
Effects of silicon on growth and nutrient release of <i>Crotalaria pallida</i> and <i>Sorghum sudanense</i>	GUO Zi-hui, ZHANG Bing-chen, YAO Kai, WANG Jia-liang, ZHANG Qiong-yue, BIAN Yun-ting, YAN Yang, CHANG Chun-rong (164)
Application effect of foliar urea and biostimulants on cotton at seedling stage	LIU Shuai, DONG He-lin, LI Peng-cheng, SUN Miao, ZHENG Cang-song (171)
The nitrogen contribution of hairy vetch to citrus seedling by substituting chemical fertilizer	YAN He, FANG Lin-fa, DENG Mao-lin, LIU Zheng-lan, SHI Xiao-jun, ZHANG Yu-ting (176)
Characteristics of decomposition and nutrient release of <i>Vicia villosa</i> under different returning methods in saline alkali land of the Yellow River Delta	SHI Yi-ming, YU Chun-xiao, LI Ke-xin, ZHANG Hai-bo, WANG Guang-mei (183)
Effects of decomposition and nutrient release of green manure rapeseed by stages of returning to the field	SU Gang, WANG Yi-zhen, WU Xi-dong, LI Zi-fang, ZANG Feng-yan, WANG Jin-long, GE Jun-zhu (192)
Effect of carbon to nitrogen ratio on aerobic composting of leaf vegetable waste	YIN Jiao, BAO Li, CHEN Fu-rong, HAN Yu, ZHANG Nai-ming, WANG Jing, XIA Feng-wu, DONG Chun-yu, DENG Yi-shu (200)
Isolation, identification, biological characteristic of phosphate-solubilizing bacterial strain YR-P31 and its growth promoting effect	WANG Song, ZHANG Xiao-fan (206)
Analysis on status of registration and management of fertilizer products in charge by the Ministry of Agriculture and Rural Affairs	LI Hua (213)
Application and prospect of poly- γ -glutamic acid in agriculture	ZHANG Shuang, DING Fang, PEI Jiu-bo, SUN Fu-jun, ZHANG Lei, SHI Yuan-liang (218)
Advances in taxonomy of genus <i>Bacillus</i> ...	XU Jing, NIU Bang-yan, ZHANG Ya-nan, WEI Hai-lei, ZHANG Xiao-xia, GAO Miao (225)
Rapid determination of five heavy metals in the water-soluble fertilizer containing alginic acid by energy dispersive X-ray fluorescence spectrometry	GAO Jing-yi, ZHAO Xiu-ping, WANG Zong-yi, YAN Guo-fu, LIU Ming-bo, LIAO Xue-liang, TANG Jie, YANG Ai-zhen (238)