

# 沈阳农业大学学报

2017年8月 第48卷 第4期 (总第189期)

## 目次

### ■研究报告

稻壳炭对不同土壤磷淋溶的影响

..... 曹 婷, 孟 军, 兰 宇, 赫天一, 刘遵奇, 黄玉威, 程效义, 陈温福 (385)

连续施用生物炭对土壤理化性质及氮肥利用率的影响

..... 韩晓日, 葛银凤, 李 娜, 彭 靖, 樊 耀, 高天一 (392)

生物炭对土壤微生物量及其群落结构的影响

..... 盖霞普, 翟丽梅, 王洪媛, 刘宏斌, 任天志, 雷秋良, 武淑霞 (399)

秸秆生物炭对土壤功能微生物生长及吸附的影响

..... 安启坤, 唐文竹 (411)

生物炭对连作设施土壤酶活性及黄瓜根系性状的影响

..... 程效义, 兰 宇, 任晓峰, 苗 微, 杨 旭, 江琳琳, 刘赛男, 陈温福 (418)

生物炭与化肥配施对土壤主要物理特性的影响

..... 金 梁, 魏 丹, 李玉梅, 王 伟, 常本超, 郭文义 (424)

生物炭与秸秆还田对水稻土碳氮转化及相关酶活性的影响

..... 李 娜, 范树茂, 陈梦凡, 于 庆, 罗培宇, 杨劲峰, 兰 宇, 韩晓日 (431)

陈化处理对稻壳生物炭理化性质的影响

..... 苗 微, 孟 军, 兰 宇, 韩晓日, 陈温福 (439)

### ■研究简报

生物炭对红壤中不同铝形态及小白菜生长的影响

..... 林庆毅, 应介官, 张梦阳, 彭抒昂, 姜存仓 (445)

生物炭对小鼠的毒性作用研究

..... 韩 杰, 孟 军, 杜宛璘, 李雯萱 (451)

热解温度对稻壳生物炭特性的影响

..... 林贵英, 陈 伟, 刘文质, 董安民, 邵敬爱, 张世红, 杨海平, 陈汉平 (456)

## 酸化生物炭改良苏打盐碱土的效应

..... 鲁新蕊,陈国双,李秀军 (462)

## 添加生物炭土壤中总 DNA 最佳提取方法的筛选

..... 孟庆阳,唐文竹 (467)

## 玉米秸秆炭和木屑炭催化裂解焦油的试验研究

..... 孟凡彬,孟 军 (472)

## 超临界乙醇系统提质木焦油的温度影响

..... 吴丹焱,崔 翔,邹 俊,陈应泉,王贤华,杨海平,陈汉平 (477)

## ■综 述

### 生物炭在土壤中矿化的研究进展

..... 张玉兰,曹明明,王俊宇,于清军 (482)

### 生物质合成气甲烷化催化剂研究进展

..... 符世龙,陈应泉,杨海平 (488)

### 生物质热解“炭、气、油”联产联供产品应用的分析

..... 熊 建,何 涛,张 涵,杨 涛,杜丽娟 (497)

### 生物质热解产物在线监测技术研究进展及发展方向

..... 周程程,赵立欣,孟海波,姚宗路,丛宏斌,简建明 (505)

辽宁省生物炭工程技术研究中心 ..... (封二、封三)

---

期刊基本参数: CN21-1134/S\*1956\*b\*A4\*128\*zh\*P\*¥10.00\*800\*19\*2017-08

本期责任编辑: 马迎杰 英文责任编辑: 汪景宽 封面设计: 杨一峰

# JOURNAL OF SHENYANG AGRICULTURAL UNIVERSITY

August in 2017 Vol. 48 No. 4 (Sum 189)

## CONTENTS

### ■ RESEARCH REPORT

- Effects of Rice Hull Biochar on Phosphorus Leaching from Different Types of Soil  
..... *CAO Ting, MENG Jun, LAN Yu, HE Tian-yi,  
LIU Zun-qi, HUANG Yu-wei, CHENG Xiao-yi, CHEN Wen-fu* (385)
- Effects of Continuous Application of Biochar on Soil Physic-Chemical Properties  
and Nitrogen Use Efficiency ..... *HAN Xiao-ri, GE Yin-feng,  
LI Na, PENG Jing, FAN Yao, GAO Tian-yi* (392)
- Impacts of Biochar on Soil Microbial Biomass and Community Structure  
..... *GAI Xia-pu, ZHAI Li-mei, WANG Hong-yuan,  
LIU Hong-bin, REN Tian-zhi, LEI Qiu-liang, WU Shu-xia* (399)
- The Influences of Straw Biochar on Growth and Absorption of Soil Functional  
Microorganisms ..... *AN Qi-kun, TANG Wen-zhu* (411)
- Effects of Biochar on Enzymatic Activities and Root Characteristics of Cucumber  
in Continuous Cropping soil of Greenhouse ..... *CHENG Xiao-yi, LAN Yu,  
REN Xiao-feng, MIAO Wei, YANG Xu, JIANG Lin-lin, LIU Sai-nan, CHEN Wen-fu* (418)
- Effect of Biochar Combined with Chemical Fertilizers on Soil Major Physical Properties  
..... *JIN Liang, WEI Dan, LI Yu-mei, WANG Wei, CHANG Ben-chao, GUO Wen-yi* (424)
- Effects of Biochar and Straw Returning on Paddy Soil Carbon and Nitrogen Transformation  
and Soil Enzyme Activities ..... *LI Na, FAN Shu-mao,  
CHEN Meng-fan, YU Qing, LUO Pei-yu, YANG Jin-feng, LAN Yu, HAN Xiao-ri* (431)
- Effect of Aging Process on Physical and Chemical Properties of Rice Husk Biochar  
..... *MIAO Wei, MENG Jun, LAN Yu, HAN Xiao-ri, CHEN Wen-fu* (439)

### ■ SHORT RESEARCH REPORT

- Effect of Biochar Application on Remission of Red Soil Aluminum Different Forms and  
the Growth of Pakchoi ..... *LIN Qing-yi, YING Jie-guan,  
ZHANG Meng-yang, PENG Shu-ang, JIANG Cun-cang* (445)

|                                                                                                        |                                                                                                                         |       |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------|
| Study on Sub-acute Toxicity Test in Mice of Rice Straw Biochar<br>.....                                | <i>HAN Jie, MENG Jun, DU Wan-lin, LI Wen-xuan</i>                                                                       | (451) |
| Influence of Pyrolysis Temperature on Physicochemical Properties of Biochar from<br>Rice Husk .....    | <i>LIN Gui-ying, CHEN Wei, LIU Wen-zhi,<br/>DONG An-min, SHAO Jing-ai, ZHANG Shi-hong, YANG Hai-ping, CHEN Han-ping</i> | (456) |
| Experimental Effects of Acidified Biochar on Saline-sodic<br>.....                                     | <i>LU Xin-rui, CHEN Guo-shuang, LI Xiu-jun</i>                                                                          | (462) |
| Selection of Different DNA Extraction Methods for Soil Treated with Biochar<br>.....                   | <i>MENG Qing-yang, TANG Wen-zhu</i>                                                                                     | (467) |
| Experimental Study on Catalytic Cracking of Tar with Corn Stalk Charcoal and<br>Sawdust Charcoal ..... | <i>MENG Fan-bin, MENG Jun</i>                                                                                           | (472) |
| Temperature Effects on Supercritical Ethanol Upgrading Wood Tar<br>.....                               | <i>WU Dan-yan, CUI Xiang, ZOU Jun,<br/>CHEN Ying-quan, WANG Xian-hua, YANG Hai-ping, CHEN Han-ping</i>                  | (477) |

## ■ REVIEW

|                                                                                                                         |                                                                                                   |       |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------|
| Research on Mineralization Characteristics of Biochar in Soil<br>.....                                                  | <i>ZHANG Yu-lan, CAO Ming-ming, WANG Jun-yu, YU Qing-jun</i>                                      | (482) |
| Research Advances in Methanation Catalysts for Bio-Syngas<br>.....                                                      | <i>FU Shi-long, CHEN Ying-quan, YANG Hai-ping</i>                                                 | (488) |
| Analysis on Application of the Biomass Charcoal, Biomass Gas and Biomass Tar<br>Co-Production of Biomass Prolysis ..... | <i>XIONG Jian, HE Tao,<br/>ZHANG Han, YANG Tao, DU Li-juan</i>                                    | (497) |
| Research Progress and Development Trend of Online Monitoring Technology of<br>Biomass Pyrolysis Products .....          | <i>ZHOU Cheng-cheng, ZHAO Li-xin,<br/>MENG Hai-bo, YAO Zong-lu, CONG Hong-bin, JIAN Jian-ming</i> | (505) |