

江苏农业科学

第 45 卷 第 11 期 2017 年 6 月 5 日

目 次

● 专论与综述

- 油菜花色研究进展及育种应用前景 黄华磊, 李文博, 李艳花, 等(1)
植物表型监测技术研究进展及发展对策 高 宇, 高军萍, 李 寒, 等(5)
纳米技术在作物病害防治中的应用研究进展 林 英, 司春灿, 黄莉萍, 等(11)

● 生物技术

- STAT3 蛋白真核表达载体的构建及其泛素化功能研究 李夏莹, 张秀杰, 宋贵文(16)
龙爪槐 SRAP - PCR 反应体系的建立与优化 倪雅楠, 刘 博(19)
甘蓝硫昔生物合成相关基因 *FMO_{GS-OXS}* 的预测与分析 刘 蕾, 宋 佳, 王 辉(22)
水稻 *Ds* 标记的曲穗突变体的分子鉴定 焦翠翠, 郭妍妍, 吴均章, 等(26)
基于 EST 序列的茶代谢网络的构建 张正东, 申 铁, 周文卫, 等(29)
小豆 SSR - PCR 反应体系优化及引物筛选 赵雅楠, 王 颖, 张东杰, 等(33)
不同品种彩色马蹄莲不定芽增殖及再生体系的优化 罗珍珍, 由翠荣, 张 慧, 等(38)
茶树等木本植物炭疽菌种群遗传分化研究 刘 威, 尹 鹏, 王子浩, 等(42)
沙田柚 GDSL 酯酶/脂肪酶基因的鉴定及序列分析 刘玉洁, 郭丹妮, 张 渝, 等(45)

● 遗传育种与耕作栽培

- 广西桂林水稻种植生命周期评价 周祖鹏, 唐玉华, 林永发(49)
旱、水稻根系生长对水氮响应的研究 张亚洁, 华晶晶, 黄银琪, 等(55)
陕西省水稻 *Wx* 基因种质资源遗传多样性分析 张 羽, 李小刚, 王保军, 等(59)
基于 ORYZA2000 模型的浙江省单季稻生物量及产量结构的模拟与分析
..... 王治海, 金志凤, 李仁忠, 等(63)

- 复合微生物菌肥对水稻苗床土壤养分及 pH 值的影响 张立峰, 丁 伟(67)
不同播期下高粱产量、气候因子及芒蝇发生率之间的关系 高 杰, 李青风, 彭 秋(70)

● 植物保护

- 施硅对稻田稗草光合及生理特性的影响 杨颜熙, 耿珍珍, 郭 伟, 等(73)
对茶树炭疽病病菌具拮抗作用根际促生细菌的分离、筛选及鉴定 王国君, 陈利军, 熊建伟, 等(76)
红富士苹果果实炭疽病病菌的分离与鉴定 陈 汝, 王金政, 薛晓敏, 等(79)
委内瑞拉链霉菌 Snea253 杀线虫活性化合物的分离纯化与结构鉴定 谭 卓, 朱 峰, 朱晓峰, 等(81)

● 园艺与林学

- 土壤特征对黄花蒿酚类物质的影响 邱胜娟, 罗世琼, 杨占南, 等(85)
不同栽培方式下铁皮石斛有效成分和光合特性的变化 陈 芳, 谷晓平, 梁 平, 等(90)

蓝果忍冬生物学特性及 6 个品种经济性状比较 古丽江·许库尔汗, 张东亚, 孙雅丽, 等(93)

激素处理对北美香柏扦插繁殖及相关氧化酶活性的影响 姚锐, 王义强, 谭益民, 等(97)

基于电阻抗图谱法测定桃树抗寒性 钱稷, 张海旺, 邸葆, 等(102)

3 种茶花叶片可溶性糖与可溶性蛋白含量的年变化 王辉, 孙耀清, 杨乐, 等(105)

不同养分供应量对玫瑰香葡萄矿质元素含量的影响 孙美, 马丹阳, 姬利洁, 等(107)

● 畜牧兽医与水产蚕桑

饲粮粗蛋白水平对高海拔地区断奶藏仔猪生产性能和血液生化指标的影响

..... 谭占坤, 宋天增, 商鹏, 等(111)

“慢呼宁”口服液对鸡安全性的试验研究 王贵波, 郭妮妮, 谢家声, 等(114)

饲粮中添加维生素 C 对高温条件下蛋鸡产蛋性能、蛋品质及血液生化指标的影响

..... 安婷婷, 张菁菁, 杨建生, 等(117)

锦鲤胚胎发育过程中几种代谢酶活性及丙二醛含量的变化 史东杰, 梁拥军, 饶青, 等(120)

利用 PCR-DGGE 技术研究稻草与黑麦草混合青贮过程中菌群的动态变化

..... 刘蓓一, 丁成龙, 乔伟艳, 等(123)

中药消除致病性大肠杆菌耐药性的研究 韦嫔, 谭艾娟, 吕世明, 等(127)

● 贮藏加工与检测分析

不同冻结方式对高白鲑肌原纤维蛋白理化特性和功能特性的影响 高泽磊, 张建(129)

丁硫克百威、克百威在白菜中的降解 宋禹, 王强, 张昌朋, 等(135)

苯甲酸钠对菊花切花保鲜效果及抗氧化系统的影响 任亚萍, 周勃, 米银法, 等(139)

超声波辅助提取藜麦多糖及其抑菌性与抗氧化性 徐澜, 郭晨晨, 赵慧(143)

魔芋葡甘聚糖复合涂膜对蓝莓保鲜效果的影响 张颖(146)

● 农业工程与信息技术

自激振动深松机的设计与试验 汤明军, 王维新, 李霞, 等(150)

基于甜菜冠层高光谱红边参数的 SPAD 值诊断 杨荣超, 田海清, 李斐, 等(153)

履带式收获机水田作业大半径转向阻力研究 韩彦勇, 朱永刚(157)

基于计算机视觉和神经网络的鸡蛋新鲜度检测 邢志中, 张海东, 王孟, 等(160)

基于反射式光电感应的精量播种机漏播监测系统研究 刘翔宇, 丛锦玲, 坎杂, 等(164)

基于 GNNM 的加工番茄产量预测研究 文欢, 陈华(167)

利用智能手机图像无损快速估测荒漠灌木地上生物量——以梭梭为例

..... 王洋洋, 孙伟, 贾永倩, 等(171)

基于邻域算法的农业害虫图像分割 姚巧鸽, 夏银红(174)

应用于大型果园害虫检测的无线传感器网络算法 李鹏, 范泽华, 何良荣, 等(178)

基于 SaaS 农业投入品监管平台的研究与实现 吴小香, 徐冬寅, 毛林, 等(183)

新型秸秆洗涤装置的设计与洗涤试验研究 孙国友, 方书起, 马力, 等(187)

● 资源与环境

生物质炭对汞污染土壤吸附钝化的影响 赵伟, 丁弈君, 孙泰朋, 等(192)

施用氮肥对还田水稻秸秆腐解的影响 王麒, 宋秋来, 冯延江, 等(197)

干旱风沙区采煤扰动耕地土壤改良方法研究 王藏姣, 牟守国, 赵华(201)

| | |
|--|--------------------|
| 土地生态利用竞争力评价——以北京市大兴区为例 | 刘巧芹,于艳茹,尚国琲(207) |
| 硅藻土基多孔陶粒与 Fenton 法联用吸附降解对苯醌研究 | 朱灵峰,耿 悅,何怡雪,等(211) |
| 焚烧秸秆对不同类型土壤理化性质、微生物及脲酶活性的影响 | 张建峰,苗天瑶,吉 丽,等(215) |
| 灌溉水质对土壤碱解氮分布特征的影响 | 李朝阳,杨玉辉,王兴鹏(218) |
| 基于 PSR 模型和突变理论的土地利用总体规划生态风险评价——以广州市为例 | 李 丹,韩书成,易森鹏,等(222) |
| 桂林地区不同土地利用方式下土壤热导率空间变化 | 陶涣壮,甘 磊,马 蕊,等(226) |
| 草海湿地不同植被区沉积物中孔隙水 CH ₄ 浓度分布与 CH ₄ 、CO ₂ 排放通量研究 | 陈忠婷,夏品华,卫晓松,等(230) |
| 赤峰市敖汉旗 4 种类型土壤机械组成及分形维数的垂直分布特征 | 高玉寒,姚云峰,李 龙,等(236) |
| PSR 框架下土地生态系统健康诊断 | 高洁芝,夏梦蕾,孟 展,等(240) |
| 秸秆发酵剂生产工艺稳定性研究 | 张庆华,赵新海,钟丽娟,等(244) |
| 生物炭对沙化土壤理化性质及作物幼苗的影响 | 王桂君,许振文,路倩倩(246) |
| 荔枝壳对六价铬的吸附特性 | 陈盛余,赵丹丹,史兵方,等(249) |
| ●农业经济与管理 | |
| 城镇化背景下农民专业合作社成员异质性及其传导路径 | 曾明星,李桂平(252) |
| 基于两部收费制的生鲜农产品三级供应链协调 | 曹武军,邢晓飞,陈志斐(259) |
| 土地转出行为对农户收入差距的影响——基于山东省潍坊市调研数据 | 夏 晨,张超群,王立群,等(264) |
| 消费者对农产品质量安全信息关注度及购买行为——基于黑龙江省 386 位消费者的实证分析 | 张松涛,李双双(269) |
| 农户购种渠道选择行为的影响因素分析——基于江苏和辽宁水稻种植农户的实证 | 靖 飞,赵青清(273) |
| 农地规模化的价值、风险及其防控 | 黄廷廷,韩静超(278) |
| 生鲜农产品冷链物流配送问题及其路径优化 | 孙明明,张辰彦,林国龙,等(282) |
| 玉米供给影响因素与供给反应 | 杨赛明(286) |
| 中国农业发展困境与农业支持政策改革转型——基于欧盟共同农业支持政策改革的启示 | 周应恒,彭 云,周 德(289) |
| 我国台湾地区创意农业的发展模式分析及经验借鉴 | 单福彬,李 馨(294) |
| 转换成本对农业契约与农民福利的影响研究:数理模型与理论解释 | 董晓波,常向阳(297) |
| 设施农业发展的科技需求及对策研究——基于北京地区的调研 | 李 瑾,冯 献,韩瑞娟,等(301) |
| 极端天气、粮食产量波动与农业天气风险管理 | 曾小艳,郭兴旭(306) |
| 农地经营权流转交易市场分析 | 钟国辉(310) |
| 城镇居民对耕地保护补偿的支付意愿及其影响因素——基于广东省的调查研究 | 臧俊梅,莫雪菲,叶圣涛(314) |
| 破解“农超对接”发展困局的模式探索 | 徐广妹,张海芳,张学文(319) |
| 农民专业合作社贷款可获性与贷款满足度影响因素——基于哈尔滨市的调研 | 王一博,辛立秋(324) |
| 空间利益视角下苏南农村空间重组协调策略 | 丁金华,戈 戈(327) |

JIANGSU AGRICULTURAL SCIENCES

Vol. 45 No. 11 June 5 2017

CONTENTS

Monograph and Review

- Research progress and breeding prospects of flower color of rapeseed *Huang Hualei, et al(1)*
Research progress and development countermeasure of plant phenotypic monitoring technology *Gao Yun, et al(5)*
Research progress on application of nanotechnology in crop disease control *Lin Ying, et al(11)*

Bio-technology

- Study on construction of eukaryotic expression vector of STAT3 protein and its ubiquitination function *Li Xiaying, et al(16)*
Optimization and establishment of SRAP – PCR reaction system for *Sophora japonica* f. *pendula* Hort. *Ni Ya'nan, et al(19)*
Prediction and analysis of glucosinolate biosynthesis related genes *FMO_{GS-OXs}* in cabbage (*Brassica oleracea* L.) *Liu Lei, et al(22)*

- Molecular identification of curved – panicle and Ds – tagged rice mutant *Jiao Cuicui, et al(26)*
Construction of tea metabolic network based on EST sequences *Zhang Zhengdong, et al(29)*
Optimization of SSR – PCR reaction system and primer screening of *Vigna angularis* *Zhao Ya'nan, et al(33)*
Optimization for adventitious buds proliferation and plantlet regeneration system of different *Zantedeschia hybrida* cultivars *Luo Zhenzhen, et al(38)*
Genetic differentiation of *Colletotrichum* of tea and other woody plants *Liu Wei, et al(42)*
Identification and sequence analysis of GDSL esterase/lipase gene in *Citrus grandis* var. Shatianyu *Liu Yujie, et al(45)*

Genetics and Breeding · Tillage and Cultivation

- Evaluation of life cycle assessment of rice cultivation in Guilin, Guangxi *Zhou Zupeng, et al(49)*
Study on response of root growth of upland rice and paddy rice to water and nitrogen *Zhang Yajie, et al(55)*
Genetic diversity analysis of rice *Wx* gene germplasm resources in Shaanxi Province *Zhang Yu, et al(59)*
Simulation and analysis for biomass and yield component of single – cropping rice in Zhejiang Province based on ORYZA2000 model *Wang Zhihai, et al(63)*
Effects of compound microbial fertilizer on soil nutrient and pH value of rice seedbed *Zhang Lifeng, et al(67)*
Relationship among sorghum yield, climate factors and incidence of *Atherigona soccata* Rondani under different sowing dates *Gao Jie, et al(70)*

Plant Protection

- Effects of silicon on photosynthetic and physiological characteristics of *Echinochloa crusglli* *Yang Yanxi, et al(73)*
Isolation, screening and identification of PGPR with antagonistic effects on tea tree anthrax germs *Wang Guojun, et al(76)*
Isolation and identification of *Colletotrichum gloeosporioides* of Red Fuji apple *Chen Ru, et al(79)*
Isolation, purification and structure identification of nematicidal metabolite from *Streptomyces venezuela* Snea253 *Tan Zhuo, et al(81)*

Horticulture and Forestry

- Effects of soil characteristics on phenolic compounds of *Artemisia annua* L. *Di Shengjuan, et al(85)*
Changes of effective components and photosynthetic characteristics of *Dendrobium candidum* under different cultivation methods *Chen Fang, et al(90)*
Biological characteristics of *Lonicera japonica* and comparison of economic traits of six cultivars *Gulijiang Xukuerhan, et al(93)*

| | |
|---|-----------------------------|
| Effects of hormone treatment on cutting propagation and related oxidase activity of <i>Thuja occidentalis</i> | <i>Yao Rui, et al(97)</i> |
| Study on cold resistance of peach tree based on electrical impedance spectroscopy | <i>Qian Ji, et al(102)</i> |
| Annual variation of soluble sugar and soluble protein content in three kinds of camellia leaves | <i>Wang Hui, et al(105)</i> |
| Effects of different nutrient supply on mineral elements contents of Muscat Hamburg | <i>Sun Mei, et al(107)</i> |

Husbandry and Veterinary · Aquaculture and Sericulture

| | |
|---|--------------------------------|
| Effects of dietary crude protein levels on performance and blood biochemical parameters of weanling piglets in high altitude area | <i>Tan Zhankun, et al(111)</i> |
| Study on safety test of Manhuning oral liquid in chickens | <i>Wang Guibo, et al(114)</i> |
| Effects of vitamin C supplementation on laying performance, egg quality and blood biochemical indices of layers under high temperature conditions | <i>An Tingting, et al(117)</i> |
| Changes of several metabolizing enzyme activities and malondialdehyde contents during embryonic development of fancy carp | <i>Shi Dongjie, et al(120)</i> |
| Dynamic changes of microorganism during ryegrass and rice straw mixed silage using PCR – DGGE | <i>Liu Beiyi, et al(123)</i> |
| Study on elimination of drug resistance of pathogenic <i>Escherichia coli</i> by traditional Chinese medicine | <i>Wei Pin, et al(127)</i> |

Storage and Processing · Detection

| | |
|---|-------------------------------|
| Effects of different freezing methods on physicochemical property and functional characteristics of <i>Coregonus peled</i> myofibrillar protein | <i>Gao Zelei, et al(129)</i> |
| Degradation of carbosulfan, carbofuran and main metabolites in Chinese cabbage | <i>Song Yu, et al(135)</i> |
| Effects of sodium benzoate on fresh – keeping effect and antioxidant system of cut chrysanthemum flowers | <i>Ren Yaping, et al(139)</i> |
| Ultrasonic – assisted extraction of quinoa polysaccharide and its bacteriostasis and antioxidant activity | <i>Xu Lan, et al(143)</i> |
| Effect of konjac glucomannan composite coating on preservation of blueberry | <i>Zhang Ying(146)</i> |

Agricultural Engineering and Information Technology

| | |
|--|----------------------------------|
| Design and experiment of self – excited vibration subsoiler | <i>Tang Mingjun, et al(150)</i> |
| SPAD value diagnosis based on red edge parameters of sugarbeet canopy hyperspectral | <i>Yang Rongchao, et al(153)</i> |
| Study on large diameter turning resistance of tracked harvester in paddy field | <i>Han Yanyong, et al(157)</i> |
| Detection of egg freshness based on computer vision detection and neural network | <i>Xing Zhizhong, et al(160)</i> |
| Study on monitoring system of miss – seeding for precision seeder based on reflective photoelectric sensing | <i>Liu Xiangyu, et al(164)</i> |
| Study on prediction of processing tomato yield based on GNNM | <i>Wen Huan, et al(167)</i> |
| Rapidly estimating aboveground biomass of desert shrubs using smartphone image—Taking <i>Haloxylon ammodendron</i> as an example | <i>Wang Yangyang, et al(171)</i> |
| Image segmentation of agricultural pest based on neighborhood relationship algorithm | <i>Yao Qiaoge, et al(174)</i> |
| Detection of pests in large orchard by wireless sensor network algorithm | <i>Li Peng, et al(178)</i> |
| Research and implementation of supervision platform of agricultural inputs based on SaaS | <i>Wu Xiaoxiang, et al(183)</i> |
| Study on design and washing test of new type straw washing device | <i>Sun Guoyou, et al(187)</i> |

Resources and Environment

| | |
|--|----------------------------------|
| Effects of biomass carbon on adsorption and passivation of mercury contaminated soil | <i>Zhao Wei, et al(192)</i> |
| Effect of nitrogen fertilizer application on decomposition of rice straw | <i>Wang Qi, et al(197)</i> |
| Study on soil improvement methods of coal mining perturbed farmland in dry sandy area | <i>Wang Cangjiao, et al(201)</i> |
| Evaluation of land ecological use competitiveness—Taking Daxing District of Beijing City as an example | <i>Liu Qiaojin, et al(207)</i> |
| Study on adsorption and degradation of benzoquinone by diatomite – based porous ceramics and fenton method | <i>Zhu Lingfeng, et al(211)</i> |

| | |
|--|----------------------------|
| Effects of incineration straw on physical and chemical properties, microorganisms and urease activities of different types of soils | Zhang Jianfeng, et al(215) |
| Effects of irrigation water quality on distribution characteristics of soil alkali – hydrolysable nitrogen | Li Zhao yang, et al(218) |
| Ecological risk assessment of general land use planning based on PSR model and mutation theory—Taking Guangzhou City as an example | Li Dan, et al(222) |
| Spatial variation of soil thermal conductivity under different land uses in Guilin Area | Tao Huanzhuang, et al(226) |
| Distribution of CH ₄ concentration and CH ₄ and CO ₂ emissions in sediments of different vegetation areas in Caohai Wetland | Chen Zhongting, et al(230) |
| Vertical distribution characteristics of mechanical composition and fractal dimension of four types of soil in Aohan Banner, Chifeng City | Gao Yuhan, et al(236) |
| Soil ecosystem health diagnosis under PSR framework | Gao Jiezhi, et al(240) |
| Study on stability of straw fermentation agent production process | Zhang Qinghua, et al(244) |
| Effects of bio – carbon on desertified soil physical and chemical properties and crop seedling | Wang Guijun, et al(246) |
| Adsorption properties of Cr(VI) by lychee shell | Chen Shengyu, et al(249) |

Agricultural Economy and Management

| | |
|---|---------------------------|
| Heterogeneity and conduction path of farmers' professional cooperatives under the urbanization background | Zeng Mingxing, et al(252) |
| Three – level supply chain coordination of fresh agricultural products based on two – part tariff | Cao Wujun, et al(259) |
| Effect of land transfer on farmers' income gap—Based on investigation data from Weifang City of Shandong Province | Xia Chen, et al(264) |
| Consumers' concern of agricultural product quality and safety information and their purchasing behavior—An empirical analysis of 386 consumers in Heilongjiang Province | Zhang Songtao, et al(269) |
| Analysis of factors influencing farmers' purchase channel selection behavior—Based on empirical analysis of rice farmers in Jiangsu and Liaoning Province | Jing Fei, et al(273) |
| Value, risk and its control of large – scale farmland | Huang Yanting, et al(278) |
| Problems and routing optimization of cold chain logistics distribution of fresh agricultural products | Sun Mingming, et al(282) |
| Study on supply influence factors and supply response of maize | Yang Saiming(286) |
| China's agricultural development dilemma and agricultural support policy reform transition—Based on European Unions common agricultural support policy reform | Zhou Yingheng, et al(289) |
| Analysis of development mode of creative agriculture in Taiwan and its experience for reference | Shan Fubin, et al(294) |
| Study on effects of switching cost on agricultural contracts and farmers' benefits: mathematical model and theoretical explanation | Dong Xiaobo, et al(297) |
| Study on technological demand and countermeasure for facility agriculture development—Based on investigation of Beijing area | Li Jin, et al(301) |
| Climate change, food production fluctuations and agricultural weather risk management | Zeng Xiaoyan, et al(306) |
| Analysis of circulation market of farmland management right | Zhong Guohui(310) |
| Investigation on citizens' willingness to pay for farmland preservation compensation and its influencing factors —Based on investigation of Guangdong Province | Zang Junmei, et al(314) |
| Exploration on mode of solving "Agricultural Super – Docking" development dilemmas | Xu Guangshu, et al(319) |
| Analysis of farmers' professional cooperatives loan availability and factors influencing loan satisfaction—Based on investigation of Harbin City | Wang Yibo, et al(324) |
| Coordination strategy of rural spatial reorganization in southern Jiangsu under perspective of space interests | Ding Jinhua, et al(327) |