

江苏农业科学

第 45 卷 第 15 期 2017 年 8 月 5 日

目 次

●专论与综述

- 基因组学技术及其在水产动物研究中的应用综述 张思源, 欧江涛, 王资生, 等(1)
- 生物质燃料供应链物流成本的文献比较研究 苏世伟, 陈 妍, 聂 影(7)
- 土壤重金属污染评价方法研究进展 宋恒飞, 吴克宁, 刘需珈(11)
- 葡萄品种分子鉴定研究进展及展望 李贝贝, 刘崇怀, 姜建福, 等(15)
- 五粮液产地自然环境研究进展 曾碧涛, 魏明英, 闫景丽, 等(21)

●生物技术

- 马铃薯 *EcoR* I / *Mse* I 内切酶组合 AFLP 反应体系的优化与引物筛选 李建武, 李灏德, 文国宏, 等(25)
- 谷子蔗糖合成酶基因家族鉴定及生物信息学分析 王凌云, 郭 明, 赵 艳, 等(30)
- 绿竹 ISSR - PCR 反应体系的建立与优化 徐 雯, 瞿印权, 陈剑成, 等(34)
- 夏蜡梅体外植株再生体系的建立 曹艳春, 赵振利(39)
- 不同哺乳动物 *GDF9* 密码子偏性及聚类分析 杨佳栋, 刘月琴, 张英杰(41)
- Ghrelin* 基因在藏猪胃底组织中的 mRNA 表达 任子利, 高卓然, 李瑜鑫, 等(46)
- 改良热硼酸法提取青香蕉果肉总 RNA 的条件优化 杨 昭, 何春兰, 李芬芳, 等(49)

●遗传育种与耕作栽培

- 杂交水稻种子萌芽与稻穗萌芽的内源激素变化 周述波, 贺立红, 贺立静, 等(54)
- 不同浸种剂对杂交水稻种子萌发及幼苗生长的影响 邓接楼, 陈潇潇, 张高阳, 等(57)
- 小麦种子活力测定方法的比较 郑雅璐, 薛小雁, 仇永康, 等(61)
- 小麦/苜蓿间套种植对土壤养分的影响 何亚男, 丁 亨, 周正霄, 等(64)
- 温度和光照度对春小麦幼苗生长及生化组成的影响 王传凯, 郭 森, 杨青华(69)
- 沿海滩涂盐碱地甘薯高产高效生产技术规程 贾赵东, 马佩勇, 边小峰, 等(74)
- 小麦淀粉糊化特性的配合力分析 刘春雷, 杨 雪, 王 丁, 等(77)

●植物保护

- 大气环流指数对海南省稻飞虱发生的影响 白 蕤, 李 宁, 吴 立, 等(80)
- 延安烟区烟粉虱空间分布和垂直分布规律 徐世才, 陈邦凯, 魏婷婷, 等(85)
- 拮抗菌生物有机肥对植烟土壤和烟草青枯病的影响 吴晓宗, 曾 强, 李红丽, 等(88)
- 土壤芽孢杆菌 NDD - 1 及其拮抗菌短小芽孢杆菌 NDY - 10 的分离、鉴定和抑菌特性
..... 李静泉, 高 坤, 许继飞, 等(91)
- 烟草黑胫病拮抗细菌的筛选及其发酵条件优化 尹福强, 刘 铭, 蔡艺梅(96)
- 烟属野生种资源黑胫病抗性研究 王仁刚, 杨志晓, 林世锋, 等(99)

●园艺与林学

河南省郑州市公园绿地常见植物固碳释氧能力分析 郭 晖(103)

景天科多肉植物在昆明地区引种试验 王丽花,瞿素萍,杨秀梅,等(106)

北京市园林灌木植物蒸腾耗水特性比较 赵云阁,李少宁,鲁绍伟,等(110)

大花三色堇和角堇对低温胁迫的生理响应及其抗寒性 齐阳阳,杜晓华,王梦叶,等(115)

不同遮光度对猴樟容器苗生长及生理特性的影响 于志民,刘 娟,李 悦,等(119)

不同产地喜树种子生物学特性差异 谢慧敏,汪贵斌,夏 禹,等(122)

几种因素对悬浮培养白色紫锥菊不定根生物量和有效物质积累的影响
..... 王洪秋,李 贺,吴春华,等(125)

ABA、PP₃₃₃和 GA 对美国红叶樱花苗木生长的影响..... 余 萍,马 杰,余治家,等(128)

蚓粪作为覆土材料提高双孢蘑菇产量的效果 王 琳,毛久庚,赵荷娟,等(131)

可降解包膜尿素缓释肥的氮素释放规律及对小白菜生长的影响 陶美彤,李悦铭,李 旭,等(133)

●畜牧兽医与水产蚕桑

不同培养条件对奶牛体外受精效果的影响 林 峰,宋 欢,黄承俊,等(137)

不同乐器演奏的轻音乐对泌乳牛免疫性能的影响 查满千,朱 坤,刘佳佳,等(139)

郑州地区犬真菌性皮肤病发病情况调查与病原分离鉴定 李阳枫,常丽烨(143)

激素浓度对羔羊和成年母羊卵母细胞体外成熟培养的影响 秦康乐,郭海燕,李拥军,等(147)

复合益生菌制剂对乳鸽生长性能、脏器指数和血清生化指标的影响 陈晓帅,杨海明,孟 俊,等(150)

●贮藏加工与检测分析

超声辅助双水相提取艾纳香总黄酮的工艺优化及抗氧化活性的研究 吴德智,田昌义,郑 强,等(153)

莲藕淀粉的特性研究 路志芳,袁 超,郝贵增,等(157)

大孔树脂分离纯化沙枣总黄酮的工艺 兰 蓉,刘 卉,李 淳(160)

三唑酮和苯醚甲环唑在草莓及土壤中残留消解动态 周 松,张玉涛,张秋云,等(164)

壳聚糖-茶树油复合保鲜液对香蕉的保鲜效果 朱 莉,李远颂,尹学琼(167)

●农业工程与信息技术

生物系统中的非线性随机效应 艾尼瓦尔·肉孜,阿布来提·麦麦提,赛地瓦尔地·买买提(170)

无公害农产品质量安全全程风险管理和追溯系统 赵继春,王国杰,王 敏(175)

残地膜力学性能试验与分析 谢建华,张凤贤,杨业龙,等(178)

2 种屋顶全开窗型温室温度预测模型比较 张 良,管泽锋,洪亚杰,等(182)

基于 GIS 的云南省马铃薯种植气候适宜性区划 王 栋,李文峰,齐伟恒(185)

模糊控制在温室大棚控释 CO₂ 气肥系统中的应用 姜 珊,谭 峰,侯召龙,等(190)

基于宇宙算法的农业害虫图像检测 田 源,孙 凌(195)

基于改进蚁群算法的智慧农业无线传感器网络路由优化研究 刘彤彤,王 磊(199)

基于混沌多宇宙算法的苹果表面缺陷检测研究 李红娟,杨颖辉(202)

基于 Android 的农业温室环境远程监测系统 梁莉娟(206)

电控共轨柴油机燃用液化天然气-柴油双燃料循环变动的特点 宋建桐,张春化,李 婕(209)

搅拌工艺参数对糙米混合特性影响的数值模拟 刘 扬,曹昕昕,兰海鹏,等(214)

| | |
|---|--------------------|
| 远程无线高精度温室大棚环境监控系统设计 | 唐英姿,蒋 峰(217) |
| 基于国产 PLC 的光伏供电温室控制系统设计与实现 | 范哲超,陆 明(223) |
| ●资源与环境 | |
| 喀斯特贫困山区土地利用结构优化——以贵州省贵阳市为例 | 魏 媛,李儒童(228) |
| 河北平原冬小麦/夏玉米高产田土壤肥力质量最小数据集构建及其评价 | 冯万忠,马振朝,张丽娟,等(233) |
| 青藏高原高寒草地土壤铁的空间异质性 | 高丽楠,张 宏(239) |
| 土地利用变化对土壤养分及土壤质量的影响——以广西移民迁入区为例 | 仝金辉,胡业翠,李 英(243) |
| 2 种浮萍干粉对 Cd ²⁺ 的吸附性能 | 李 阳,成家杨,钟 钰,等(248) |
| 鄂东南花岗岩区不同崩岗侵蚀程度的农田土壤质量评价 | 夏 栋,蔡崇法,龙 莉,等(254) |
| 人工湿地对城市降雨径流污染物的削减效应 | 张智涌,双学珍,刘 栋(259) |
| 河南省淮河流域底泥重金属形态分布特征及其潜在风险评价 | 王雪平,王淑红(264) |
| 接种发酵剂对城市污泥强制通风堆肥的效果评价 | 常慧萍,夏铁骑,王 丁,等(271) |
| 卷材营养对护坡植物生长特性的影响 | 曾雪梅,李绍才,孙海龙(275) |
| ZnO - ZnAl 水滑石 (ZZA) 吸附水中磷酸盐性能研究 | 唐朝春,叶 鑫,陈惠民,等(279) |
| 4 环 HMW - PAHs 降解菌的筛选、鉴定及降解特性 | 张雪娜,贾海滨,张丽秀,等(282) |
| ●农业经济与管理 | |
| 农村土地确权认知调查与分析——基于江西省 365 位村民的调查数据 | 邹晓娟,陈芳芳,黄建伟,等(286) |
| 新常态下江苏省农业科技创新资源配置与产业结构协调发展研究 | 沈树明,符 磊,李占国(290) |
| 农地产权视域下的家庭农场培育研究 | 赵金国,岳书铭(294) |
| 土地对农民不同类型收入的影响——基于长江干流 10 省(市)的面板数据 | 王 静,杜为公,李晓涛,等(298) |
| 我国淡水养殖业生产布局的时空特征及变化趋势 | 吕 超,汪 翔,孙国锋(301) |
| 供给侧改革下农村宅基地流转法律问题研究 | 薛玉飞,王 婧,苏 欣(306) |
| “互联网+”背景下传统农业的发展路径 | 支 磊(310) |
| 西南民族地区旅游扶贫的农户参与和效应感知研究——以重庆武陵山片区为例 | 冯伟林,周 丹,向从武(314) |
| 基于人工蜂群算法的鲜活农产品冷链物流配送路径优化 | 蔡浩原,潘 郁(318) |
| 不同类型农户农地经营权抵押融资需求分析——基于辽宁省 880 户农户的调查 | 于丽红,兰庆高,关名媛(322) |
| O2O 模式下农资电商线下服务点选择演化博弈分析 | 霍 红,崔天天,徐玲玲(325) |
| 苏州地区家庭农场粮食作物生产效率分析 | 殷志扬,韩喜秋,顾金峰,等(329) |
| 我国农村居民猪肉需求弹性测算及其周期性比较——基于扩展型线性支出系统 | 何 帅,曾华盛,何伯正(335) |
| 农业科技创新与集成示范基地建设现状与对策建议 | 饶智宏,孟 洪,殷宪超,等(339) |
| 城镇近郊区空心村综合整治评价——基于 11 个村 691 份问卷 | 田双清,陈宇阳,陈 磊,等(342) |

JIANGSU AGRICULTURAL SCIENCES

Vol. 45 No. 15 August 5 2017

CONTENTS

Monograph and Review

| | |
|---|------------------------|
| Genomics technology and its application in aquatic animal research;a review | Zhang Siyuan,et al(1) |
| Comparative study on logistics costs of biomass fuel supply chain | Su Shiwei,et al(7) |
| Research progress on assessment methods of heavy metal pollution in soil | Song Hengfei,et al(11) |
| Research progress and prospect of molecular identification of grape varieties | Li Beibei,et al(15) |
| Research progress of natural environment of Wuliangye producing area | Zeng Bitao,et al (21) |

Bio-technology

| | |
|--|------------------------|
| Optimization and primer screening of AFLP reaction system for potato <i>EcoRI/MseI</i> enzymatic combinations | Li Jianwu,et al(25) |
| Family identification and bioinformatics analysis of millet sucrose synthase gene | Wang Lingyun,et al(30) |
| Establishment and optimization of ISSR – PCR reaction system of <i>Dendrocalamopsis oldhami</i> (Munro) Keng f. | Xu Wen,et al(34) |
| Establishment of extracorporeal plant regeneration system of <i>Calycanthus chinensis</i> | Cao Yanchun,et al(39) |
| Codon bias and cluster analysis of <i>GDF9</i> in different mammals | Yang Jiadong,et al(41) |
| mRNA Expression of <i>Ghrelin</i> gene in organizations of Tibetan pig stomach bottom | Ren Zili,et al(46) |
| Optimization of extraction conditions of total RNA from green banana pulp by modified hot boric acid method | Yang Zhao,et al(49) |

Genetics and Breeding · Tillage and Cultivation

| | |
|--|-------------------------|
| Changes of endogenous hormones during seed germination and spike sprout of hybrid rice | Zhou Shubo,et al(54) |
| Effects of different seed soaking agent on seed germination and seedling growth of hybrid rice | Deng Jielou,et al(57) |
| Comparative study on determination methods of wheat seed vigor | Zheng Yalu,et al(61) |
| Influences of wheat/alfalfa interplanting on soil nutrients | He Yanan,et al(64) |
| Effects of temperature and light intensity on seedling growth and biochemical composition of <i>spring wheat</i> | Wang Chuankai,et al(69) |
| Technical specification for high – yielding and efficient production of sweet potato in coastal saline – alkali land | Jia Zhaodong,et al(74) |
| Combining ability analysis of wheat starch pasting properties | Liu Chunlei,et al(77) |

Plant Protection

| | |
|--|------------------------|
| Effect of atmospheric circulation index on occurrence of rice planthoppers in Hainan Province | Bai Rui,et al(80) |
| Spatial distribution and vertical distribution of <i>Bemisia tabaci</i> in Yan'an tobacco – growing area | Xu Shicai,et al(85) |
| Effects of bio – organic fertilizer on planting soil and tobacco bacterial wilt | Wu Xiaozong,et al(88) |
| Isolation, identification and antibacterial properties of <i>Bacillus edaphicus</i> NDD – 1 and its antagonistic bacteria <i>Bacillus pumilus</i> NDY – 10 | Li Jingquan,et al(91) |
| Screening of antagonistic bacteria against tobacco black shank disease and optimization of its fermentation conditions | Yin Fuqiang,et al(96) |
| Study on resistance of wild tobacco species to tobacco black shank disease | Wang Rengang,et al(99) |

Horticulture and Forestry

| | |
|--|---------------|
| Analysis of carbon fixation and oxygen release capacity of common plants in park green space of Zhengzhou City, Henan Province | Guo Hui (103) |
|--|---------------|

| | |
|---|--------------------------|
| Introduction test of Crassulaceae succulent plants in Kunming, Yunnan Province | Wang Lihua,et al(106) |
| Comparison of transpiration characteristics of garden shrub plants in Beijing City | Zhao Yunge,et al(110) |
| Physiological response and cold resistance of <i>Viola × wittrockiana</i> and <i>Viola cornuta</i> to low temperature stress | Qi Yangyang,et al(115) |
| Effects of different shading on growth and physiological characteristics of container – grown seedlings of <i>Cinnamomum bodinieri</i> | Yu Zhimin,et al(119) |
| Difference of seed biological characteristics of different <i>Camptotheca</i> species in different habitats | Xie Huimin,et al(122) |
| Effects of several factors on biomass and effective compound accumulation of adventitious roots of <i>Echinacea pallida</i> with suspension culture | Wang Hongqiu,et al(125) |
| Effects of ABA,PP333 and GA on growth of red cherry blossom | She Ping,et al(128) |
| Effects of earthworm excrement as clay cover material on yield of <i>Agaricus bisporus</i> | Wang Lin,et al(131) |
| Nitrogen release of degradable coated urea slow – release fertilizer and its effect on growth of Chinese cabbage | Tao Meitong,et al(133) |

Husbandry and Veterinary · Aquaculture and Sericulture

| | |
|--|----------------------------|
| Effects of different culture conditions on <i>in vitro</i> fertilization of dairy cows | Lin Feng,et al(137) |
| Influences of light music played by different instruments on immune performance of lactating dairy cows | Zha Manqian,et al(139) |
| Pathogenesis investigation and pathogen identification of canine fungal skin disease in Zhengzhou area | Li Yangfeng,et al(143) |
| Effects of hormone concentrations on <i>in vitro</i> maturation of oocytes of lambs and adult sheep | Qin Kangle,et al(147) |
| Effects of complex – probiotic – preparation on growth properties,viscera index and serum biochemical indices of squab | Chen Xiaoshuai,et al(150) |

Storage and Processing · Detection

| | |
|---|------------------------|
| Study on ultrasonic – assisted aqueous two – phase extraction of total flavonoids from <i>Blumea balsamifera</i> and its antioxidant activity | Wu Dezhi,et al(153) |
| Study on properties of lotus root starch | Lu Zhifang,et al(157) |
| Separation and purification technology of total flavonoids from <i>Elaeagnus angustifolia</i> by macroporous resin | Lan Rong,et al(160) |
| Digestion dynamics of triazolone and difenoconazole in strawberry and soil | Zhou Song,et al(164) |
| Fresh preservation of bananas with chitosan – tea tree oil composite solution | Zhu Li,et al(167) |

Agricultural Engineering and Information Technology

| | |
|--|---------------------------|
| Nonlinear stochastic effects in biological system | Anvar Rozi,et al(170) |
| Entire risk management and traceability system of quality and safety of pollution – free agricultural products | Zhao Jichun,et al(175) |
| Experiment and analysis on mechanical property of residual plastic film | Xie Jianhua,et al(178) |
| Comparison of temperature prediction models of two kinds of roof window full open type greenhouse | Zhang Liang,et al(182) |
| Climatic suitability regionalization of potato planting in Yunnan Province based on GIS | Wang Dong,et al(185) |
| Application of fuzzy control in controlled CO ₂ gas fertilizer system in greenhouse | Jiang Shan,et al(190) |
| Image detection of agricultural pest based on universe algorithm | Tian Yuan,et al(195) |
| Study on routing optimization of intelligent agricultural wireless sensor network based on improved ant colony algorithm | Liu Tongtong,et al(199) |
| Apple surface defect detection based on chaotic multi universe algorithm | Li Hongjuan,et al(202) |
| Remote monitoring system for agricultural greenhouse environment based on Android platform | Liang Lijuan(206) |
| Cycle – by – cycle variation of an electronic control common rail diesel engine fueled with LNG – diesel dual fuel | Song Jiantong,et al(209) |
| Numerical simulation on effects of agitated process parameters on mixing characteristics of brown rice | Liu Yang,et al(214) |

Design of remote wireless high precision greenhouse environment monitoring system Tang Yingzi,et al(217)

Design and realization of photovoltaic power supply greenhouse control system based on domestic PLC Fan Zhechao,et al(223)

Resources and Environment

Optimization of land use structure in karst poor mountainous areas—Taking Guiyang City of Guizhou Province as an example
..... Wei Yuan,et al(228)

Construction and evaluation of minimum data set of soil fertility quality in winter wheat/summer maize rotation region in Hebei Plain
..... Feng Wanzhong,et al(233)

Spatial heterogeneity of soil active iron of alpine meadow in Qinghai – Tibet Plateau Gao Li’nan,et al(239)

Effects of land use change on soil nutrients and soil quality—Taking Guangxi immigration area as an example
..... Tong Jinhui,et al(243)

Biosorption of Cd²⁺ by dry powder of two duckweed species Li Yang,et al(248)

Evaluation of farmland soil quality with different collapsing erosion degree in granite area of southeastern Hubei
..... Xia Dong,et al(254)

Reduction effect of constructed wetland on urban rainfall runoff pollutants Zhang Zhiyong,et al(259)

Distribution characteristics and potential risk assessment of heavy metals in sediments of Huaihe River Basin in Henan Province
..... Wang Xueping,et al(264)

Effect evaluation of inoculated starter on forced draft composting of municipal sludge Chang Huiping,et al(271)

Impacts of coiled material and nutrition on growth characteristics of slope – protecting plants Zeng Xuemei,et al(275)

Study on adsorption property of phosphate in water by ZnO – ZnAl hydrotalcite (ZZA) Tang Chaochun,et al(279)

Screening, identification and degradation characteristics of 4 – ring HMW – PAHs degrading bacteria Zhang Xuena,et al(282)

Agricultural Economy and Management

Cognition investigation and analysis of rural land right confirmation—Based on 365 farmers’ survey data in Jiangxi Province
..... Zou Xiaojuan,et al(286)

Study on coordinated development of agricultural science and technology innovation resource allocation and industrial structure in
Jiangsu Province under new normal condition Shen Shuming,et al(290)

Study on cultivation of family farms under perspective of farmland property rights Zhao Jinguo,et al(294)

Influence of land on different types of farmers’ income—Based on panel data of 10 provinces in the Yangtze River
..... WangJing,et al(298)

Temporal and spatial characteristics and trend of production layout of China’s freshwater aquaculture Lü Chao,et al(301)

Study on legal problems of rural homestead’s circulation under supply – side reform Xue Yufei,et al(306)

Traditional agriculture development path under internet plus background Zhi Lei(310)

Study on farmers’ participation and effect awareness of tourism poverty alleviation in southwestern minority areas—Taking Wuling
Mountain area of Chongqing City as an example Feng Weilin,et al(314)

Optimization of cold chain logistics distribution path of fresh agricultural products based on artificial bee colony algorithm
..... Cai Haoyuan,et al(318)

Demand analysis on farmland management right mortgage financing of different types of farmers—Based on survey of 880 households
in Liaoning Province Yu Lihong,et al(322)

Evolutionary game analysis of offline service point selection of agricultural electronic commerce under O2O mode
..... Huo Hong,et al(325)

Analysis of production efficiency of grain crops of family farm in Suzhou area Yin Zhiyang,et al(329)

Estimation of elasticity of demand for pork in China’s rural areas and its periodic comparison—Based on extended linear expenditure
system He Shuai,et al(335)

Current situation and suggestions of agricultural science and technology innovation and integrated demonstration base construction
..... Rao Zhihonget al(339)

Evaluation of comprehensive treatment of hollow village in urban suburb—Based on 691 questionnaires from 11 villages
..... Tian Shuangqing,et al(342)