

# 江苏农业科学

第 46 卷 第 10 期 2018 年 5 月 20 日

## 目 次

### ●专论与综述

- 我国农产品供应链研究现状与发展趋势分析 ..... 刘晓峰, 王俊雷(1)
- 抗菌药物递送系统的研究进展 ..... 吴晓烽, 秦 竹, 史海健, 等(5)
- 遥感信息与作物生长模型同化应用的研究进展 ..... 卢必慧, 于 堃(9)
- 不同施肥和栽培措施对水稻土壤微生物多样性的影响综述 ..... 吴 晶, 王娟娟, 朱腾义, 等(14)
- 植物重金属抗性基因挖掘和作用机制研究进展 ..... 符东顺, 何冠谛, 付天岭, 等(18)

### ●生物技术

- 少孢节丛孢菌几丁质酶 *AO-801* 基因的分子特征分析及其多克隆抗体制备  
..... 贡莎莎, 孟庆玲, 乔 军, 等(23)
- 干制辣椒 *InDel-PCR* 反应体系的构建及应用 ..... 王 辉, 王 爽, 姜 童, 等(28)
- 芒果 *LAR* 基因的克隆及其表达分析 ..... 赵志常, 高爱平, 黄建峰, 等(31)
- 湖南本土牡丹遗传多样性与亲缘关系的 *ISSR* 分析 ..... 钟丽凡, 吕长平, 许文婷, 等(34)
- 马氏珠母贝 *GAPDH* 基因克隆及其在去甲基化受精卵中的表达分析 ..... 李耀国, 孙 彤, 武文丽, 等(38)
- 木聚糖酶基因的克隆与表达 ..... 宋立立, 顿宝庆, 张亚楠, 等(43)
- 金银花黄酮合成酶 *LjFNS* 基因克隆及序列分析 ..... 杨总应, 蒋向辉(47)

### ●遗传育种与耕作栽培

- 环渤海盐碱化潮土区夏玉米施肥效应及肥料利用率 ..... 刘全凤, 马 茜, 刘 贞, 等(51)
- 滴灌水肥一体化不同施氮量对玉米叶绿素含量和荧光特性的影响 ..... 徐 灿, 孙建波, 宋建辰, 等(54)
- 单株限域定量施肥实现夏玉米一次性施肥的可行性 ..... 冀保毅, 程 琴, 李跃伟, 等(59)
- 不同入水期对青贮玉米农艺性状及产量形成的影响 ..... 段震宇, 张小伟, 王 婷, 等(62)
- 遮光处理和喷施叶面肥对春季马铃薯原原种繁育的影响 ..... 刘凌云, 卢丽丽, 包丽仙, 等(66)
- 河北省夏玉米生长季干旱时空特征及对夏玉米产量的影响 ..... 番聪聪, 胡正华, 黄 进, 等(69)
- 油葵转基因方法的比较 ..... 焦 展, 安胜军, 邵铁梅, 等(75)
- 间作条件下不同覆盖方式对玉米品质的影响及综合效益评价 ..... 方旭飞, 王丽学, 张钟莉莉, 等(79)
- 不同连作年限对马铃薯土壤环境及产量的影响 ..... 韩翠莲, 霍轶珍, 田志强(83)
- 含不同浓度腐殖酸的叶面肥对烟草生长和烟叶品质的影响 ..... 崔步云, 杨浩宇, 韦凤杰, 等(86)

### ●植物保护

- 滴灌条件下木霉菌厚垣孢子制剂防治棉花黄萎病试验 ..... 孙 艳, 张学坤, 王振辉, 等(89)

烟草茎点病在贵州省的发生及病原鉴定 ..... 江 艳,桑维钧,曾尔玲,等(92)

加拿大进境油菜籽茎基溃疡病菌的生物学特性 ..... 潘玲玲,王 峰,莫 斌,等(96)

抗枇杷根腐病病菌的内生木霉菌株筛选 ..... 鲁海菊,江 涛,胡金碧,等(99)

四川省 3 种入侵害虫的危害、风险评估及管理对策 ..... 赵永田,王兴娥(103)

Q 型烟粉虱对不同白肋烟品种的选择性 ..... 陈德鑫,张安盛,毛晓红,等(106)

性迷向素迷向法防治梨园梨小食心虫试验效果 ..... 公 义,孙淑建,肖云丽,等(109)

●园艺与林学

2 种药用甘草种子对盐渍环境的萌发响应及其甘草酸含量变化 ..... 沈步芳,李予霞,马 森,等(111)

淡竹开花生物学特性 ..... 岳祥华,赵 荣,林树燕(117)

生长年限对七叶一枝花植株、根系、产量和皂苷含量的影响 ..... 陈铁柱,文飞燕,夏燕莉,等(122)

生物有机肥对金叶女贞根际微环境和枯萎病的影响 ..... 黄金凤(126)

植物生长调节剂对甜樱桃移栽苗生长发育的影响 ..... 王秀梅,张 云,秦景逸,等(130)

洋桔梗 *Ceremogy Orcmge* 品种辐射诱变育种 ..... 陈淑英,王玉英,李叶芳,等(134)

4 种引进观赏草在高温及水涝胁迫下的适应性 ..... 孟晓蕊,高 凡,朱 婷,等(138)

桃叶卫矛花粉超低温保存 ..... 李万义,孔 鑫,韩亚洁,等(144)

红火炬郁金香种球的抗寒生理及植物生长调节剂的低温保护效果 ..... 刘建新,丁华侨,徐笑寒(149)

●畜牧兽医与水产蚕桑

绵羊 *MHC - DQB2 exon3* 单倍型的构建及其与布鲁氏菌病易感性相关性  
..... 严 国,王元元,罗 成,等(154)

鲇源异嗜糖气单胞菌的分离鉴定及药敏特性 ..... 胡秀彩,陆梦莹,孙敬锋,等(159)

奶牛隐性乳房炎金黄色葡萄球菌分离鉴定及药敏试验 ..... 谢 昆,蒋成砚,郑秋燕,等(163)

姜酮及其组合物对糖尿病小鼠降血糖作用观察 ..... 陈俊红,孙 敬,金李萍,等(166)

荧光定量 RT - PCR 检测高致病性 PRRSV 接触感染仔猪增殖动态 ..... 夏文龙,余树培,吴 植,等(169)

817 肉杂鸡阶段饲喂的初步研究 ..... 陈 瑞,余 倩,温 超,等(173)

●贮藏加工与检测分析

不同部位苦荞粉中 3 种黄酮类成分含量的比较 ..... 卢 扬,刘永翔,李 俊,等(177)

杜香挥发油提取工艺研究及成分 GC - MS 分析 ..... 尤莉艳,杨 婷,姜 辉,等(180)

1 - 甲基环丙烯处理对金冠苹果冷藏期间果实软化的影响 ..... 郭 丹,韩英群,魏 鑫,等(183)

白茅根总黄酮提取工艺及其抗氧化性研究 ..... 翁 梁,李西腾(187)

响应面法优化乌榄果总黄酮提取工艺及体外抗氧化活性研究 ..... 吴 娟,张立夏,袁 燕,等(190)

不同储藏时间稻谷在粮仓不同位置的品质及霉菌差异分析 ..... 方宝庆,葛志文,高瑀琰,等(195)

大孔吸附树脂分离纯化紫甘薯色素的动力学分析 ..... 咎立峰,李丹花,殷春燕,等(199)

●农业工程与信息技术

基于嵌入式图像处理系统的鱼类轨迹跟踪 ..... 刘星桥,张 弛(203)

基于容灾备份的设施温室环境监控系统关键技术的研究 ..... 张雪飞,王建春,彭 凯,等(208)

枣园视觉导航路径提取软件的设计与实现 ..... 彭顺正,李景彬(213)

大坡度山地果园运输机行走机构设计与试验 .....	欧阳爱国,吴建,刘燕德,等(217)
农产品质量安全溯源多边平台的追溯机制研究 .....	郑开涛,刘世洪,胡海燕(221)
红枣收获机骑跨式机架的优化设计 .....	李琳琳,王丽红,坎杂,等(224)
小型立式轴流脱粒装置的试验 .....	王升升,杨兴超,耿令新,等(228)
一种基于神经网络的土壤湿度预测方法 .....	杨晓霞,贾嵩,张承明,等(232)

●资源与环境

基于 SPI 指数的近 55 年河南省干旱时空变化特征 .....	李治国,朱玲玲,张延伟,等(237)
2001—2015 年北方草地净初级生产力动态及其与气候因子的关系 .....	赵婷,赵伟,张义,等(243)
基于土地功能评价的环渤海盐碱地宜耕性确定——以河北省黄骅市为例 .....	陈影,张利,杨江燕,等(249)
经济快速发展时期土地利用变化与生态系统服务价值研究——以重庆市渝北区为例 .....	李强,廖和平,李义龙,等(254)
东北三省水稻种植面积时空变化监测与分析 .....	曹丹,白林燕,冯建中,等(260)
近 15 年北方 6 省(区)草地覆盖度时空变化及其与气温、降水的关系 .....	赵伟,张义,赵婷,等(266)
基于 PSR 模型的土地生态安全评价——以淮南市为例 .....	陈广宇(272)
京津冀城市群土地利用/覆被时空格局变化 .....	杨浩(276)
基于地形梯度的农户耕地经营规模分布特征研究 .....	饶磊,许婷,郭熙,等(281)
青藏高原区域多源土壤湿度数据的对比分析 .....	孙添,王国杰,娄丹,等(285)
青霉菌株 F36 对不同来源风化煤的降解特性 .....	闫敏,李磊,张强,等(291)
海南东寨港红树林湿地柱状沉积物稀土元素纵向分异特征 .....	王鸿平,赵志忠,伏箫诺,等(295)
不同除草剂对 3 株土壤细菌蛋白酶活性的影响 .....	辛顺佳,杨虹琦,熊伟,等(300)
旱作冬小麦生育后期持续无降水对土壤水分的影响 .....	程立平,林文,赵玉明,等(304)

●农业经济与管理

公平偏好对秸秆发电供应链决策的影响分析 .....	薛朝改,王新风(307)
基于回归模型分析法的社区支持农业消费者感知价值维度实证 .....	柴彦红(313)
消费者蔬菜属性偏好及支付意愿研究——基于选择试验法的消费者调查 .....	马若愚,姚忠智(319)
基于地理加权回归模型的村域致贫因子研究——以贵州省剑河县为例 .....	杨桂林,杨柳,焦洪赞,等(324)
旅游发展、金融支持对贫困减少的影响 .....	陈薇,钟学进(329)
“供应链云”视角下农产品电子商务管理的影响因素 .....	喻靖文(336)
海南省休闲农业发展中失地农民福利变化 .....	魏丹,韩晓龙(341)
台湾省休闲农场永续发展途径及启示 .....	张骏(345)
水产品市场价格和渔民收入的动态关系——基于 SPVAR 模型的实证 .....	周磊,马改艳,徐学荣(349)
基于农业信息化的农民增收路径的优化 .....	吴婷婷,胡红琴(354)
农产品价格波动对城镇居民消费的影响研究 .....	廖杉杉,鲁钊阳(358)

# JIANGSU AGRICULTURAL SCIENCES

Vol. 46 No. 10 May 20 2018

## CONTENTS

### Monograph and Review

Analysis of research status and development trend of China's agricultural product supply chain .....	Liu Xiaofeng, et al(1)
Research progress of antimicrobial drug delivery systems .....	Wu Xiaofeng, et al(5)
Research progress on assimilation of remote sensing information and crop growth model .....	Lu Bihui, et al(9)
Effects of different fertilization and cultivation managements on paddy soil microbial diversity;a review .....	Wu Jing, et al(14)
Research progress on mining and mechanism of plant heavy metal resistance genes .....	Fu Dongshun, et al(18)

### Bio-technology

Molecular characterization analysis and polyclonal antibody preparation of chitinase <i>AO-801</i> gene in <i>Arthrobotrys oligospora</i> Xinjiang isolate .....	Gong Shasha, et al(23)
Construction and application of InDel-PCR system of dry pepper .....	Wang Hui, et al(28)
Cloning and expression analysis of <i>LAR</i> gene from mango .....	Zhao Zhichang, et al(31)
Analysis of genetic diversity and consanguinity of <i>Paeonia suffruticosa</i> in Hunan Province by ISSR markers .....	Zhong Lifan, et al(34)
Cloning of <i>GAPDH</i> gene and its expression analysis in demethylation-treated fertilized egg of <i>Pinctada fucata</i> .....	Li Yaoguo, et al(38)
Cloning and expression of xylanase gene .....	Song Lili, et al(43)
Cloning and sequence analysis of flavone synthase <i>LjFNS</i> gene from <i>Lonicera japonica</i> Thunb. ....	Yang Zongying, et al(47)

### Genetics and Breeding • Tillage and Cultivation

Fertilization effect and fertilizer utilization rate of summer maize in saline-alkaline fluvo-aquic soils of Bohai Sea .....	Liu Quanfeng, et al(51)
Impacts of different nitrogen application rate on chlorophyll content and fluorescence properties of corn under integration of water and fertilizer .....	Xu Can, et al(54)
Feasibility of one-off fertilization for summer maize by quantitative fertilization with single plant limitation .....	Ji Baoyi, et al(59)
Effects of different irrigation periods on agronomic traits and yield formation of silage maize .....	Duan Zhenyu, et al(62)
Impacts of shading treatments and foliage fertilizer application on mini-tuber breeding of potato in spring .....	Liu Lingyun, et al(66)
Drought spatial and temporal characteristics of summer maize during growing season in Hebei Province and its effect on yield of summer maize .....	Fan Congcong, et al(69)
Comparison of transgenic methods of oil sunflower .....	Jiao Zhan, et al(75)
Effects of different covering methods on maize quality and evaluation of comprehensive benefit under intercropping condition .....	Fang Xufei, et al(79)
Influences of different continuous cropping years on soil environment and yield of potato .....	Han Cuilian, et al(83)
Effects of foliar fertilizer with different concentrations of humic acid on growth and leaf quality of tobacco .....	Cui Buyun, et al(86)

### Plant Protection

Control efficacy of <i>Trichoderma</i> chlamydospore preparations against cotton verticillium wilt based on dropping irrigation system .....	Sun Yan, et al(89)
Identification of pathogenic fungus causing tobacco black spot stalk in Guizhou Province .....	Jiang Yan, et al(92)

Biological characteristics of <i>Leptosphaeria maculans</i> from Canadian canola .....	Pan Lingling,et al(96)
Screening of <i>Trichoderma</i> strains against pathogen of loquat root rot .....	Lu Haiju,et al(99)
Damage,risk assessment,and management strategies of three invasive pests in Sichuan Province .....	Zhao Yongtian, et al(103)
Selectivity of Q – biotype <i>Bemisia tabaci</i> for different burley tobacco cultivars .....	Chen Dexin,et al(106)
Experimental study on control effect of sex pheromone on <i>Grapholitha molesta</i> Busck in pear orchard .....	Gong yi,et al(109)

## Horticulture and Forestry

Germination responses of two kinds of medicinal liquorice seeds to saline environments and changes of glycyrrhizic acid content .....	Shen Bufang, et al(111)
Biological characteristics of florescence of <i>Phyllostachys glauca</i> McClure .....	Yue Xianghua,et al(117)
Effects of growing years on plant ,root system,yield and saponins content of <i>Paris polyphylla</i> var. <i>chinensis</i> .....	Chen Tiezhu,et al(122)
Influences of bio – organic fertilizer on rhizosphere microenvironment and wilt disease of <i>Ligustrum vicaryi</i> .....	Huang Jinfeng (126)
Effects of plant growth regulators on growth and development of sweet cherry transplanting seedlings .....	Wang Xiumei,et al(130)
Mutation breeding of <i>Eustoma grandiflorum</i> ‘ Ceremony Oremge’ induced by radiation .....	Chen Shuying,et al(134)
Adaptability of four kinds of introduced ornamental grasses under high temperature and waterlogging stress .....	Meng Xiaorui,et al(138)
Cryopreservation of <i>Euonymus bungeanus</i> pollen .....	Li Wanyi,et al(144)
Cold – resistant physiology and cryoprotective effect of plant growth regulator of <i>Curcuma hybrid</i> ‘ Red Torch’ bulbs .....	Liu Jianxin,et al(149)

## Husbandry and Veterinary · Aquaculture and Sericulture

Construction of MHC – <i>DQB2</i> exon3 haplotypes of sheep and its relationship with brucellosis susceptibility .....	Yan Guo,et al(154)
Isolation, identification and antibiotic sensitivity of <i>Aeromonas allosaccharophila</i> from diseased catfish .....	Hu Xiucui,et al(159)
Isolation,identification and medicine sensitive test of <i>Staphylococcus aureus</i> from dairy cow with recessive mastitis .....	Xie Kun,et al(163)
Hypoglycemic effect of gingerone and its compositions on diabetic mice .....	Chen Junhong,et al(166)
Detection of proliferation dynamics of HP – PRRSV contagious infected piglets by fluorescence quantitative RT – PCR .....	Xia Wenlong,et al(169)
Preliminary study on phase feeding of “817” hybrid broilers .....	Chen Rui,et al(173)

## Storage and Processing · Detection

Comparison of contents of three flavonoids in buckwheat powder from different parts of buckwheat .....	Lu Yang, et al(177)
Extraction technology and component analysis of essential oil from <i>Ledum palustre</i> L. by GC – MS .....	You Liyan,et al(180)
Effect of 1 – MCP treatment on fruit softening of “Jinguan” apple during cold storage .....	Guo Dan,et al(183)
Study on extraction process of total flavonoids from rhizoma imperatae and its antioxidant activity .....	Weng Liang,et al(187)
On optimization of extraction techniques of total flavonoids from <i>Canarium pimela</i> Leenh. fruit by response surface methodology and its antioxidant activity .....	Wu Juan,et al(190)
Analysis of rice quality and mould differences in different positions of grain bulks with different storage time .....	Fang Baoqing,et al(195)
Kinetic analysis of separation and purification of pigments from purple sweet potatoes by macroporous resins .....	Zan Lifeng,et al(199)

## Agricultural Engineering and Information Technology

Study on fish tracking based on embedded image processing system .....	Liu Xingqiao,et al(203)
Study on key technologies of greenhouse environmental monitoring system based on disaster recovery backup .....	Zhang Xuefei,et al(208)
Design and realization of visual navigation path extraction software in jujube garden .....	Peng Shunzheng,et al(213)

Design and experiment of running gear for large slope orchard transport plane .....	Ouyang Aiguo, <i>et al</i> (217)
Study on traceability mechanism of multilateral platform for quality and safety of agricultural products .....	Zheng Kaitao, <i>et al</i> (221)
Optimized design of straddle chassis frame of jujube harvester .....	Li Linlin, <i>et al</i> (224)
Experiment of small vertical axial threshing device .....	Wang Shengsheng, <i>et al</i> (228)
A soil moisture prediction algorithm based on artificial neural network .....	Yang Xiaoxia, <i>et al</i> (232)

## Resources and Environment

Spatial and temporal variations of drought in Henan Province over a 55 – year period based on standardized precipitation index .....	Li Zhiguo, <i>et al</i> (237)
Dynamics of grassland net primary productivity and its relationship with climatic factors from 2001 to 2015 in northern China .....	Zhao Ting, <i>et al</i> (243)
Determination of appropriate tillage of saline – alkali soils in Bohai Bay based on land function evaluation—Taking Huanghua City of Hebei Province as an example .....	Chen Ying, <i>et al</i> (249)
Study on land use change and ecosystem service value during rapid economic development period—Taking Yubei District of Chongqing City as an example .....	Li Qiang, <i>et al</i> (254)
Monitoring and analysis of temporal and spatial variation of rice planting area in northeastern China .....	Cao Dan, <i>et al</i> (260)
Spatial – temporal dynamics of grassland coverage and its response to climate change in the six provinces of northern China during recent 15 years .....	Zhao Wei, <i>et al</i> (266)
Evaluation of land ecological security based on PSR model—Taking Huainan City as an example .....	Chen Guangyu(272)
Land utilization/cover spatial and temporal pattern change of Jing – Jin – Ji urban agglomeration .....	Yang Hao(276)
Study on distribution characteristics of farmers cultivated land management scale based on terrain gradient .....	Rao Lei, <i>et al</i> (281)
Contrastive analysis of multi – sensor soil moisture datasets of Tibetan Plateau .....	Sun Tian, <i>et al</i> (285)
Degradation characteristics of <i>Penicillium</i> strain F36 to weathered coal from different sources .....	Yan Min, <i>et al</i> (291)
Vertical distribution pattern of REE elements contents in core sediments from mangrove wetlands in Dongzhai Harbor, Hainan Island .....	Wang Hongping, <i>et al</i> (295)
Effects of different herbicides on protease activity of three strains of soil bacteria .....	Xin Shunjia, <i>et al</i> (300)
Effects of continued non – precipitation during late growth stages of rain – fed winter wheat on soil water in loess tableland .....	Cheng Liping, <i>et al</i> (304)

## Agricultural Economy and Management

Analysis of effect of fairness preference on straw power generation supply chain decisions .....	Xue Chaogai, <i>et al</i> (307)
Empirical study on consumers’ perceptual value dimension in community support agriculture based on regression model analysis .....	Chai Yanhong(313)
Study on consumers’ vegetable attribute preference and willingness to pay – Consumer survey based on choice experiments .....	Ma Ruoyu, <i>et al</i> (319)
Study on poverty factors in villages based on geographic weighted regression model—Taking Jianhe County of Guizhou Province as an example .....	Yang Guilin, <i>et al</i> (324)
Impact of tourism development and financial support on poverty reduction .....	Chen Wei, <i>et al</i> (329)
Study on factors influencing e – commerce management of agricultural products from perspective of “supply chain cloud” .....	Yu Jingwen(336)
Study on change of land – lost farmers’ welfare during development of leisure agriculture in Hainan Province .....	Wei Dan, <i>et al</i> (341)
Analysis of approach and implications of sustainable development of leisure farm in Taiwan Province .....	Zhang Jun(345)
Study on dynamic relationship between market price of fishery products and fishermen’s income—Empirical study based on SPVAR model .....	Zhou Lei, <i>et al</i> (349)
Study on optimized path of increasing farmers’ income based on agricultural informatization .....	Wu Tingting, <i>et al</i> (354)
Study on influence of price fluctuation of agricultural products on urban consumption .....	Liao Shanshan, <i>et al</i> (358)