七期(月刊

- 🦲 中文核心期刊
- 中国科技核心期刊
- 🦲 中国农业科技核心期刊
- 全国优秀科技期刊奖
- 🦲 全国农业学会优秀期刊奖
- 🥘 中国核心期刊(遴选)数据库源期刊
- 🦲 热带农业文摘(荷兰)源期刊
- 国际热带农业中心CIAT收录期刊

ISSN 1000-2561 CODEN RZXUEX

热带作物学报

REDAI ZUOWU XUEBAO CHINESE JOURNAL OF TROPICAL CROPS





主 办 中国热带作物学会 第39卷 第7期(月刊) Vol.39 No.7(Monthly)

2018.7

热带作物学报

2018 年 7 月 第 **39 卷 第 7 期** (月刊 1980 年创刊)

目 次

н и	
遗传育种、作物栽培与营养	
结缕草属植物种质资源遗传变异研究 黄春琼,刘国道,日	白昌军, 唐 军, 王文强, 丁西朋, 刘一明(1259)
巴西橡胶树次生乳管分化能力的早期评价方法研究 张世鑫, \$	刘宁涛,杨署光,陈月异,晁金泉,田维敏(1266)
中粒种咖啡品种比较试验 闫 林,黄丽芳,王晓阳,林	林兴军,孙 燕,陈 鹏,龙宇宙,董云萍(1276)
自然环境下 5 个腰果无性系果实的图像识别算法研究 岑冠军,	王彦阳,张中润,黄伟坚,黄海杰,王金辉(1282)
丙环唑对普通白菜株高和产量的影响及其残留研究	
	朱富伟, 黄聪灵, 李桂花, 骆 冲, 孙 珍(1290)
植物生理生化	
大孔树脂对红心火龙果茎多糖脱色除蛋白及抗氧化活性的影响	
	李幼梅, 邓志勇, 陈逸婷, 邢燕妮, 白新鵬 (1297)
生长素抑制油菜素内酯导致的水稻根不对称生长	蔡泽坪,于旭东,罗佳佳,吴繁花,孟帅良(1304)
水肥耦合调控对水稻光合特性的影响	
不同光质 LED 对竹叶兰酚类物质及抗氧化性的影响	郭阿瑾,杨凤玺,王亚琴,朱根发(1318)
不同形态氮素配比对水培叶用莴苣生长与总有机酸变化的影响	
	谢圣爽,吴章洪,华炜辉,林义章,钟凤林(1324)
生物菌肥不同施用量对鼓节竹发笋期生长和光合特性的影响	
薛 磊,凡莉莉, ·	李云鸧,张 力,何天友,荣俊冬,郑郁善(1332)
生物技术与组织培养	
基于转录组序列的火龙果 SSR 和 SNP 多态性分析 ···· 严佳文,肖图舰,为	袁启凤,解 璞,彭志军,毛永亚,马玉华(1338)
美味猕猴桃过氧化物酶基因 AdPOD27 的密码子偏好特征分析	
赖瑞联,冯 新, ,	高敏霞, 钟春水, 胡艺贤, 吴如健, 陈义挺(1344)
三七基因组 SSR 位点分析和多态性引物开发 揭应碧,)	卢迎春,宋婉玲,韦坤华,张广辉,杨生超(1351)
茉莉花 JsPAL2 基因的克隆与表达分析 熊 青, 宋姣敏,	崔 萌, 许颖妍, 俞 滢, 叶乃兴, 陈桂信(1359)
利用 CRISPR/Cas9 系统编辑拟南芥 2 个双链结合蛋白	
	张春微,刘志昕,王健华,余乃通,张秀春(1367)
棉花 SSR 标记在红麻中的通用性 方书生,谢雄峰,	祁建民,张列梅,徐建堂,林荔辉,张立武(1373)
植物病理、作物病虫害及其防治	
拮抗内生细菌 BEB17 对 4 个香蕉品种组培杯苗的定殖、促生分析和抗	工病性评价
	陈奕鹏,蔡吉苗,杨 扬,徐春华,黄贵修(1383)
椰子木蛾在 5 个椰子品种上种群生命表参数比较 … 方 萍,张 峰, 章	阎 伟,李朝绪,刘 丽,马子龙,覃伟权(1390)
海南台农芒采后果实炭疽病病原鉴定	陈亭妤,李 聪,周国英,李 河(1396)
拟除虫菊酯类杀虫剂对赤拟谷盗 CYP4 基因的诱导表达特性	
温郁金白绢病菌的生物学特性及药剂毒力测定」	
利用生物信息学方法鉴定和分析禾谷炭疽菌 Rab 蛋白家族	李 源,步伟洋,鲁国东,齐尧尧(1416)
农产品加工、保鲜、贮藏与分析检测	
香草兰精油微胶囊的制备工艺优化及缓释性分析	刘双双,张彦军,徐 飞,初 众,那治国(1423)
不同保鲜薄膜袋包装对建阳桔柚贮藏保鲜效果的影响	纪 颖,林河通,蒋璇靓,肖烟云,李 娜(1431)
云南不同地区草果物理性状、精油含量及组成分析	
谷风林,张林辉,房一明,刘光华,沈绍斌,	姜太玲,段春芳,宋记明,蔡莹莹,黄菲菲(1440)
榴莲泥的超高压杀菌工艺研究 郝森林,名	余元善,陈卫东,吴继军,肖更生,徐玉娟(1447)
综述	
植物 PAL 基因及其编码蛋白的特征与功能研究进展 郝向阳,不	
檀香紫檀资源培育与利用研究进展	陈仁利, 曾 杰 (1462)

CHINESE JOURNAL OF TROPICAL CROPS

Jul. 2018 Vol.39 No.7 (Monthly, Established in 1980)

CONTENTS

Genetic Breeding, Crop Culture and Nutrition
Genetic Variation Analysis of Zoysia willd. Accessions
HUANG Chunqiong, LIU Guodao, BAI Changjun, TANG Jun, WANG Wenqiang, DING Xipeng, LIU Yiming (1259)
Early Evaluation Method of Secondary Laticifer Differentiation Ability in Hevea brasiliensis
ZHANG Shixin, LIU Ningtao, YANG Shuguang, CHEN Yueyi, CHAO Jinquan, TIAN Weimin (1266)
Comparative Trial of Robusta Coffee Cultivars
······ YAN Lin, HUANG Lifang, WANG Xiaoyang, LIN XingJun, SUN Yan, CHEN Peng, LONG Yuzhou, DONG Yunping (1276)
Image Recognition Algorithm for Cashew Fruits of Five Cashew Clones Under Natural Environment
CEN Guanjun, WANG Yanyang, ZHANG Zhongrun, HUANG Weijian, HUANG Haijie, WANG Jinhui(1282)
Effect of Propiconazole on Plant Height and Yield of Pak-Choi and Its Residue Behavior
············ HUANG Jianxiang, YE Qian, CHEN Hancai, ZHU Fuwei, HUANG Congling, LI Guihua, LUO Chong, SUN Ling (1290)
Phytophysiology and Biochemistry
Effect of Macroporous Resin on Decolorization and Deproteinization Technology and Antioxidant Activity of Polysaccharide
from Red Pulp Hylocereusundatus Stem
Auxin Inhibits Asymmetric Growth of Oryza sativa L. Primary Root Induced by Brassinosteroids
YANG Wen, CAI Zeping, YU Xudong, LUO Jiajia, WU Fanhua, MENG Shuailiang (1304)
Effect of Water and Fertilizer Coupling on Photosynthetic Characteristic in Rice
Effect of Water and Fertilizer Coupling on Photosynthetic Characteristic in Rice YANG Bin, GUO Bizhi, GUO Rongfa (1311)
YANG Bin, GUO Bizhi, GUO Rongfa (1311)
YANG Bin, GUO Bizhi, GUO Rongfa (1311) Effect of Different LED Light Qualities on Phenolic Substances and Oxygen Metabolism of <i>Arundina graminifolia</i>
YANG Bin, GUO Bizhi, GUO Rongfa (1311) Effect of Different LED Light Qualities on Phenolic Substances and Oxygen Metabolism of <i>Arundina graminifolia</i> GUO Ajin, YANG Fengxi, WANG Yaqin, ZHU Genfa (1318)
YANG Bin, GUO Bizhi, GUO Rongfa (1311) Effect of Different LED Light Qualities on Phenolic Substances and Oxygen Metabolism of <i>Arundina graminifolia</i> GUO Ajin, YANG Fengxi, WANG Yaqin, ZHU Genfa (1318) Effects of Different Nitrogen Form Ratios on Growth and Total Organic Acids in <i>Lactuca sativa</i> L.
YANG Bin, GUO Bizhi, GUO Rongfa (1311) Effect of Different LED Light Qualities on Phenolic Substances and Oxygen Metabolism of Arundina graminifolia GUO Ajin, YANG Fengxi, WANG Yaqin, ZHU Genfa (1318) Effects of Different Nitrogen Form Ratios on Growth and Total Organic Acids in Lactuca sativa L. ZHOU Xiangzhu, YAN Yinan, LIU Mingyue,
YANG Bin, GUO Bizhi, GUO Rongfa (1311) Effect of Different LED Light Qualities on Phenolic Substances and Oxygen Metabolism of Arundina graminifolia GUO Ajin, YANG Fengxi, WANG Yaqin, ZHU Genfa (1318) Effects of Different Nitrogen Form Ratios on Growth and Total Organic Acids in Lactuca sativa L. ZHOU Xiangzhu, YAN Yinan, LIU Mingyue, SHANG Chunyu, XIE Shengshuang, WU Zhanghong, HUA Weihui, LIN Yizhang, ZHONG Fenglin (1324)
YANG Bin, GUO Bizhi, GUO Rongfa (1311) Effect of Different LED Light Qualities on Phenolic Substances and Oxygen Metabolism of Arundina graminifolia GUO Ajin, YANG Fengxi, WANG Yaqin, ZHU Genfa (1318) Effects of Different Nitrogen Form Ratios on Growth and Total Organic Acids in Lactuca sativa L. ZHOU Xiangzhu, YAN Yinan, LIU Mingyue, SHANG Chunyu, XIE Shengshuang, WU Zhanghong, HUA Weihui, LIN Yizhang, ZHONG Fenglin (1324) Effects of Different Application Rates of Biological Bacteria Fertilizer on the Growth and Photosynthetic Characteristics of
YANG Bin, GUO Bizhi, GUO Rongfa (1311) Effect of Different LED Light Qualities on Phenolic Substances and Oxygen Metabolism of Arundina graminifolia GUO Ajin, YANG Fengxi, WANG Yaqin, ZHU Genfa (1318) Effects of Different Nitrogen Form Ratios on Growth and Total Organic Acids in Lactuca sativa L. ZHOU Xiangzhu, YAN Yinan, LIU Mingyue, SHANG Chunyu, XIE Shengshuang, WU Zhanghong, HUA Weihui, LIN Yizhang, ZHONG Fenglin (1324) Effects of Different Application Rates of Biological Bacteria Fertilizer on the Growth and Photosynthetic Characteristics of Bambusa tuldoides During Shooting Period
YANG Bin, GUO Bizhi, GUO Rongfa (1311) Effect of Different LED Light Qualities on Phenolic Substances and Oxygen Metabolism of Arundina graminifolia GUO Ajin, YANG Fengxi, WANG Yaqin, ZHU Genfa (1318) Effects of Different Nitrogen Form Ratios on Growth and Total Organic Acids in Lactuca sativa L. ZHOU Xiangzhu, YAN Yinan, LIU Mingyue, SHANG Chunyu, XIE Shengshuang, WU Zhanghong, HUA Weihui, LIN Yizhang, ZHONG Fenglin (1324) Effects of Different Application Rates of Biological Bacteria Fertilizer on the Growth and Photosynthetic Characteristics of Bambusa tuldoides During Shooting Period XUE Lei, FAN Lili, LI Yunge, ZHANG Li, HE Tianyou, RONG Jundong, ZHENG Yushan (1332)
YANG Bin, GUO Bizhi, GUO Rongfa (1311) Effect of Different LED Light Qualities on Phenolic Substances and Oxygen Metabolism of Arundina graminifolia GUO Ajin, YANG Fengxi, WANG Yaqin, ZHU Genfa (1318) Effects of Different Nitrogen Form Ratios on Growth and Total Organic Acids in Lactuca sativa L. ZHOU Xiangzhu, YAN Yinan, LIU Mingyue, SHANG Chunyu, XIE Shengshuang, WU Zhanghong, HUA Weihui, LIN Yizhang, ZHONG Fenglin (1324) Effects of Different Application Rates of Biological Bacteria Fertilizer on the Growth and Photosynthetic Characteristics of Bambusa tuldoides During Shooting Period XUE Lei, FAN Lili, LI Yunge, ZHANG Li, HE Tianyou, RONG Jundong, ZHENG Yushan (1332) Biotechnology and Tissue Culture
YANG Bin, GUO Bizhi, GUO Rongfa (1311) Effect of Different LED Light Qualities on Phenolic Substances and Oxygen Metabolism of Arundina graminifolia GUO Ajin, YANG Fengxi, WANG Yaqin, ZHU Genfa (1318) Effects of Different Nitrogen Form Ratios on Growth and Total Organic Acids in Lactuca sativa L. ZHOU Xiangzhu, YAN Yinan, LIU Mingyue, SHANG Chunyu, XIE Shengshuang, WU Zhanghong, HUA Weihui, LIN Yizhang, ZHONG Fenglin (1324) Effects of Different Application Rates of Biological Bacteria Fertilizer on the Growth and Photosynthetic Characteristics of Bambusa tuldoides During Shooting Period XUE Lei, FAN Lili, LI Yunge, ZHANG Li, HE Tianyou, RONG Jundong, ZHENG Yushan (1332) Biotechnology and Tissue Culture SSR and SNP Polymorphism Analysis Based on Hylocereus polyrhizus Transcriptome
YANG Bin, GUO Bizhi, GUO Rongfa (1311) Effect of Different LED Light Qualities on Phenolic Substances and Oxygen Metabolism of Arundina graminifolia GUO Ajin, YANG Fengxi, WANG Yaqin, ZHU Genfa (1318) Effects of Different Nitrogen Form Ratios on Growth and Total Organic Acids in Lactuca sativa L. ZHOU Xiangzhu, YAN Yinan, LIU Mingyue, SHANG Chunyu, XIE Shengshuang, WU Zhanghong, HUA Weihui, LIN Yizhang, ZHONG Fenglin (1324) Effects of Different Application Rates of Biological Bacteria Fertilizer on the Growth and Photosynthetic Characteristics of Bambusa tuldoides During Shooting Period XUE Lei, FAN Lili, LI Yunge, ZHANG Li, HE Tianyou, RONG Jundong, ZHENG Yushan (1332) Biotechnology and Tissue Culture SSR and SNP Polymorphism Analysis Based on Hylocereus polyrhizus Transcriptome YAN Jiawen, XIAO Tujian, YUAN Qifeng, XIE Pu, PENG Zhijun, MAO Yongya, MA Yuhua (1338)
Effect of Different LED Light Qualities on Phenolic Substances and Oxygen Metabolism of Arundina graminifolia GUO Ajin, YANG Fengxi, WANG Yaqin, ZHU Genfa (1318) Effects of Different Nitrogen Form Ratios on Growth and Total Organic Acids in Lactuca sativa L. ZHOU Xiangzhu, YAN Yinan, LIU Mingyue, SHANG Chunyu, XIE Shengshuang, WU Zhanghong, HUA Weihui, LIN Yizhang, ZHONG Fenglin (1324) Effects of Different Application Rates of Biological Bacteria Fertilizer on the Growth and Photosynthetic Characteristics of Bambusa tuldoides During Shooting Period XUE Lei, FAN Lili, LI Yunge, ZHANG Li, HE Tianyou, RONG Jundong, ZHENG Yushan (1332) Biotechnology and Tissue Culture SSR and SNP Polymorphism Analysis Based on Hylocereus polyrhizus Transcriptome YAN Jiawen, XIAO Tujian, YUAN Qifeng, XIE Pu, PENG Zhijun, MAO Yongya, MA Yuhua (1338) Analysis of Codon Bias Characteristic of a Peroxidase Gene AdPOD27 in Actinidia deliciosa

CHINESE JOURNAL OF TROPICAL CROPS

Jul. 2018 Vol.39 No.7 (Monthly, Established in 1980)

Cloning and Expression Analysis of JsPAL2 Gene from Jasminum sambac	
	Guixin (1359)
Mutanted Double DRBs Based on CRSPR/Cas9 Technology in Arabidopsis thaliana	
	iuchun (1367)
Universality of Simple Sequence Repeat (SSR) Markers from Cotton (Gossypium hirsutum) to Kenaf (Hibiscus cannal	pinus)
FANG Shusheng, XIE Xiongfeng, QI Jianmin, ZHANG Liemei, XU Jiantang, LIN Lihui, ZHANG	G Liwu (1373)
Crop Pests, Diseases and Their Control, Environmental Protection	
Colonization, Growth Promoting Analysis and Disease Resistance Evaluation of Antagonistic Endophytic Bacteria	BEB17
Against Four Banana Cultivars	
	Guixiu (1383)
Comparison of Population Life Table Parameters of Opisina arenosella Walker on Five Coconut Varieties	
FANG Ping, ZHANG Feng, YAN Wei, LI Chaoxu, LIU Li, MA Zilong, QIN W	Veiquan (1390)
Colletotrichum Species Responsible for Anthracnose Disease of Postharvest Fruits of TaiNong Mango	
	, LI He (1396)
Induction Pattern of Cytochrome p450 Genes from CYP4 Family of <i>Tribolium castaneum</i> Under Treatment of Pyr	ethroid
Insecticides	
LIANG Xiao, WU Chunling, CHEN Qing, XU X	Kuelian (1402)
Biological Characteristics of Sclerotium rolfsii Causing Curcuma wenyujin Southern Blight and Toxicity Test of D	ifferent
Fungicides in Laboratory	
MA Rui, XU Gang, ZHENG Fan, ZHENG Feiqing, XIE Cha	ngping (1410)
Identification and Analysis of Rab Proteins in Colletotrichum graminicola by Bioinformatic Approach	
LI Yuan, BU Weiyang, LU Guodong, QI	Yaoyao (1416)
Agricultural Product Processing, Preservation, Storage, Analysis and Detection	
Process Optimization and Slow Release Analysis of Vanilla Oil Microencapsulated	
LIU Shuangshuang, ZHANG Yanjun, XU Fei, CHU Zhong, NA	Zhiguo (1423)
Effects of Different Film Bag Packaging on Storage Behavior of 'Jianyang Tangelo' Fruit	
JI Ying, LIN Hetong, JIANG Xuanjing, XIAO Yanyun,	LI Na (1431)
Analysis of Physical Properties, Essential Oil Content and Composition of Amomum tsao –ko from Different Origins of Y	
GU Fenglin, ZHANG Linhui, FANG	Yiming,
LIU Guanghua, SHEN Shaobin, JIANG Tailing, DUAN Chunfang, SONG Jiming, CAI Yingying, HUANG	G Feifei (1440)
Sterilization of Durian Puree by Ultra High Pressure	
HAO Senlin, YU Yuanshan, CHEN Weidong, WU Jijun, XIAO Gengsheng, XU	Yujuan (1447)
Reviews	
Characteristics and Functions of Plant Phenylalanine Ammonia Lyase Genes and the Encoded Proteins	
HAO Xiangyang, SUN Xueli, WANG Tianchi, LYU Keliang, LAI Zhongxiong, CHENG Ch	unzhen (1452)
Research Progress in Cultivation and Utilization for <i>Pterocarpus santanilus</i> CHEN Renli, ZE	NG Jie (1462)

CN 46-1019/S*1980*m*A4*212*zh*P*\$20.00*1000*29*2018-7