

# 压损等振

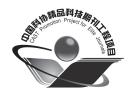
# ACTA AGRONOMICA SINICA

第44卷 第7期 Vol. 44 No. 7





科学出版 社 出版 Published by Science Press 2018



# 作物学报

(ZUOWU XUEBAO)

# 第 44 卷 第 7 期 2018 年 7 月

# 目 次

作物证	遗传育种•种质资源•分子遗传学						
949	抗病转基因水稻 M12 及其产品成分的定性、定量	李 鹏	张 琳	叶吉妮	贺诗瑶	贾军伟	潘爱虎
	PCR 检测方法	唐雪明					
956	利用 SNP 芯片构建我国冬油菜参试品种 DNA 指	赵仁欣	李森业	郭瑞星	曾新华	文 静	马朝芝
	纹图谱	沈金雄	涂金星	傅廷栋	易 斌		
966	高分子量麦谷蛋白亚基 HPCE 高效分离及图谱鉴	王卫东	高翔	赵丹阳			
	定						
977	水稻抗稻瘟病基因 <i>Pi47</i> 的精细定位和候选基因 分析	肖湘谊	史学涛	盛浩闻	刘金灵	肖应辉	
988	小麦种质资源抗旱性鉴定评价	李 龙	毛新国	王景一	昌小平	柳玉平	景蕊莲
1000	玉米低磷胁迫诱导型强启动子 $P_{1502}$ - $ZmPHR1$ 的	杨瑞娟	白建荣	闫 蕾	苏 亮	王秀红	李 锐
	克隆与表达分析	张丛卓					
1010	一个芝麻应用核心种质的 DNA 分子身份证构建	杨文娟	张艳欣	王林海	魏	黎冬华	高 媛
		刘 盼	张秀荣				
1021	马铃薯块茎花色素苷合成相关 R2R3 MYB 蛋白基	谈 欢	刘玉汇	李丽霞	王 丽	李元铭	张俊莲
	因的克隆和功能分析						
耕作	栽培•生理生化						
1032	玉米密植群体下部叶片衰老对植株碳氮分配与产	李荣发	刘 鹏	杨清龙	任 昊	董树亭	张吉旺
	量形成的影响	赵 斌					
1043	GF-1 和 MODIS 影像冬小麦长势监测指标 NDVI	王利民	杨玲波	刘 佳	杨福刚	姚保民	
	的对比						
1055	半干旱区沟垄集雨种植谷子的肥料效应及其增产	陈雪娇	张旭东	韩治中	张 鹏	贾志宽	连延浩
	贡献	韩清芳					
1067	大田长期水氮处理对土壤氮素及小麦籽粒淀粉糊	李莎莎	马耕	刘卫星	康娟	陈雨露	胡阳阳
	化特性的影响	张盼盼	王晨阳	w ~ <del>~</del>	4.11. ++ >4		#- *c T
1077	小麦籽粒淀粉与面粉的理化特性差异	李春燕	张雯霞	张玉雪	姚梦浩	丁锦峰	朱新开
TII chi /	** 10	郭文善	封超年				
研究行		A 1-h	17 77			<i>-</i> '	714 147
1086	马铃薯冠气温差变化特性与耐旱性的关系	余斌	杨宏羽	王 丽	刘玉汇	白江平	张峰
1005	<b>のでよりなまいまでも ヘミハフにいな サルトュハエ</b>	王蒂	张俊莲	<del>7</del> ⊤₩			
1095	四倍体马铃薯块茎蛋白含量分子标记的开发与验证	单洪波	史佳文	石 瑛			

## **ACTA AGRONOMICA SINICA**

Vol. 44 No. 7 July 2018

#### **CONTENTS**

949	P GENETICS & BREEDING • GERMPLASM RE  A Qualitative and Quantitative PCR Detection	LI Peng, ZHANG Lin, YE Ji-Ni, HE Shi-Yao, JIA Ji
. 17	Method for Disease-resistant Genetically Modified	Wei, PAN Ai-Hu, and TANG Xue-Ming
	Rice M12 and Its Derivates	wei, 1711/71-11u, and 1711/0 7tue-wing
956	Construction of DNA Fingerprinting for <i>Brassica</i>	ZHAO Ren-Xin, LI Sen-Ye, GUO Rui-Xing, ZENG X
930	napus Varieties Based on SNP Chip	Hua, WEN Jing, MA Chao-Zhi, SHEN Jin-Xiong, TU J
	input in the construction of the construction	Xing, FU Ting-Dong, and YI Bin
966	Efficient Separation and Identification of High	WANG Wei-Dong, GAO Xiang, and ZHAO Dan-Yang
	Molecular Weight Glutenin Subunits by HPCE	
977	Fine Mapping and Candidate Gene Analysis of	XIAO Xiang-Yi, SHI Xue-Tao, SHENG Hao-Wen, L
	Rice Blast Resistance Gene <i>Pi47</i>	Jin-Ling, and XIAO Ying-Hui
988	Drought Tolerance Evaluation of Wheat Germ-	LI Long, MAO Xin-Guo, WANG Jing-Yi, CHANG Xi
	plasm Resources	Ping, LIU Yu-Ping, and JING Rui-Lian
000	Cloning and Expression Analysis of Strong Induc-	YANG Rui-Juan, BAI Jian-Rong, YAN Lei, SU Lia
	ible Promoter P <sub>1502</sub> -ZmPHR1 Responding to Low	WANG Xiu-Hong, LI Rui, and ZHANG Cong-Zhuo
	Phosphorus Stress in Maize	
1010	Establishment of DNA Molecular Identification for	YANG Wen-Juan, ZHANG Yan-Xin, WANG Lin-Hai, W
	A Sesame (Sesamum indicum L.) Applied Core	Xin, LI Dong-Hua, GAO Yuan, LIU Pan, and ZHA
	Collection	Xiu-Rong
1021	Cloning and Functional Analysis of R2R3 MYB	TAN Huan, LIU Yu-Hui, LI Li-Xia, WANG Li, LI Yu
	Genes Involved in Anthocyanin Biosynthesis in	Ming, and ZHANG Jun-Lian
	Potato Tuber	
ILLA	AGE & CULTIVATION • PHYSIOLOGY & BIOCHEM	ISTRY
032	Effects of Lower Leaf Senescence on Carbon and	LI Rong-Fa, LIU Peng, YANG Qing-Long, REN H
	Nitrogen Distribution and Yield Formation in	DONG Shu-Ting, ZHANG Ji-Wang, and ZHAO Bin
	Maize (Zea mays L.) with High Planting Density	
043	Comparison of Growth Monitoring Index NDVI	WANG Li-Min, YANG Ling-Bo, LIU Jia, YANG
	between GF-1 and MODIS Images in Winter	Gang, and YAO Bao-Min
	Wheat	
1055	Fertilizer Response and Its Contribution to Yield	CHEN Xue-Jiao, ZHANG Xu-Dong, HAN Zhi-Zho
	of Foxtail Millet under Ridge-furrow Rainfall	ZHANG Peng, JIA Zhi-Kuan, LIAN Yan-Hao, and H.
	Harvesting Planting Model in Semi-arid Areas	Qing-Fang
1067	Effects of Long-Term Irrigation and Nitrogen Re-	LI Sha-Sha, MA Geng, LIU Wei-Xing, KANG Ju
067		
067	gimes on Soil Nitrogen Content and Paste Property	CHEN Yu-Lu, HU Yang-Yang, ZHANG Pan-Pan, a

10//	Differences in Physicochemical Properties between	LI Chun-Yan, ZHANG Wen-Xia, ZHANG Yu-Xue, YAO				
	Flour and Starch of Wheat Grain	Meng-Hao, DING Jin-Feng, ZHU Xin-Kai, GUO Wen-				
		Shan, and FENG Chao-Nian				
RESE	RESEARCH NOTES					
1086	Relationship between Potato Canopy-air Tem-	YU Bin, YANG Hong-Yu, WANG Li, LIU Yu-Hui, BAI				
	perature Difference and Drought Tolerance	Jiang-Ping, ZHANG Feng, WANG Di, and ZHANG Jun-				
		Lian				
1095	Development and Validation of Molecular Marker	SHAN Hong-Bo, SHI Jia-Wen, and SHI Ying				
	for Protein Content in Tetraploid Potato Tuber					

LI Chun Von ZHANG Wan Via ZHANG Vu Vua VAO

Differences in Physicachemical Proporties between

#### A BRIEF INTRODUCTION OF ACTA AGRONOMICA SINICA

Acta Agronomica Sinica (AAS, ISSN 0496-3490) is a monthly academic journal co-sponsored by Crop Science Society of China and the Institute of Crop Science, Chinese Academy of Agricultural Sciences, under the leadership of China Association for Science and Technology and published by Science Press, Chinese Academy of Sciences. AAS was firstly published in 1962. The predecessors were Chinese Journal of Agricultural Research started in 1950 and Acta Agriculturae Sinica started in 1952. As one of the key scientific journals in China, AAS has been financially supported by China Association for Science and Technology since 1997 and the National Natural Science Foundation of China since 2000.

The major aims of **AAS** are to report the progresses in the disciplines of crop breeding, crop genetics, crop cultivation, crop physiology, ecology, biochemistry, germplasm resources, grain chemistry, grain storage and processing, biotechnology and biomathematics etc. mainly in China and abroad. **AAS** provides regular columns for Original papers, Reviews, and Research notes. The strict peer-review procedure guarantees the academic level and raises the reputation of the journal. The readership of **AAS** is for crop science researchers, students of agricultural colleges and universities, and persons with similar academic level.

AAS is the leading journal of crop sciences and reflects the latest achievement in all aspects of crop sciences in China. AAS occupies the first position on the list of Chinese core journals in "Agronomy and Crops" field. The editorial board consists of 151 specialists in the field of crop sciences. Among them, 24 are academicians of Chinese Academy of Sciences or Chinese Academy of Engineering, 26 are from the outside of China, and 3 are from Hong Kong, China.

**AAS** is a fully Open Access Journal through the independent website (http://zwxb.chinacrops.org/) since 2004. Free full texts are published online two months earlier than printing version, and all articles of the journal from 1962 are available freely. Manuscript submission, tracking, and peer review process are completed online. The functions of eTOCs (Table of Contents Alerting), advanced paper search, and paper recommendation are available.

AAS are indexed in some international index systems, such as AGRIS (FAO), CAB Abstracts and Global Health of Centre for Agriculture and Bioscience International, Cambridge Scientific Abstracts, Chemical Abstracts, Food Science and Technology Abstracts, Index of Copurnicus, Japan Science and Technology Agency, and VINITI Abstracts Journal (Russia). AAS is also referenced by many domestic databases and abstract periodicals.

The purposes of *AAS* are to enhance the development of crop science and technology in China, to promote nationwide and worldwide academic exchanges, and to accelerate the modernization of Chinese agriculture. *AAS* is distributed in China and abroad. The editorial office appreciates to establish publication exchange relationship with related institutions, agricultural colleges and universities, and international organizations in China and abroad.

1077

### The Crop Journal 征稿启示

The Crop Journal (《作物学报》英文版)是中国科协主管,中国作物学会、中国农业科学院作物科学研究所和中国科技出版传媒股份有限公司共同主办的学术期刊。创刊于 2013 年 10 月。办刊宗旨为刊载作物科学相关领域最新成果和应用技术,开展国际学术交流,促进我国作物科学研究水平及国际影响力的提升。主要刊登农作物遗传育种、耕作栽培、生理生化、生态、种质资源以及与农作物有关的生物技术、生物数学、农业气象等领域以第一手资料撰写的研究论文、研究简报以及专题综述等。The Crop Journal 的编委会由 103 位国内外知名科学家组成,其中有国外编委 56 位。2016 年被中国科学技术信息研究所评选为"中国科技核心期刊", 2016 年和 2017 年被中国知网评选为"中国最具国际影响力学术期刊"。目前收录 The Crop Journal 的国内、外数据库有: SCI 数据库、Scopus 数据库、DOAJ、美国化学文摘、英国国际农业与生物科学研究中心文摘、英国食品科学与技术文摘、联合国粮农组织的 AGRIS 数据库、中国科学引文数据库(CSCD)、中国知网、万方数据、中国科技论文在线等。2016 年获中国科技期刊国际影响力提升计划二期项目(C类)的资助。The Crop Journal 与 KeAi 合作,在 Science Direct 网络出版平台实现全文开放获取(Open Access)和在线预出版(Online first)。

*The Crop Journal* **现征集英文原创研究论文**。对稿件的内容要求同中文版,格式要求参见期刊网页上的Guide for Authors。投稿方式: 在线投稿, 网址为 https://ees.elsevier.com/cj/。

在线出版网址: https://www.sciencedirect.com/journal/the-crop-journal/

电话: 010-82108548; E-mail: cropjournal@caas.cn

#### 作物学报

(月刊, 1950年创刊)

第44卷 第7期 2018年7月12日

#### ACTA AGRONOMICA SINICA

(Monthly, Started in 1950)

Vol. 44 No. 7, July 12, 2018

主 管 中国科学技术协会 主 办 中国作物学会 中国农业科学院作物科学研究所

中国科技出版传媒股份有限公司

主 编 万建民

编 辑 《作物学报》编 委 会

北京市中关村南大街 12 号 邮编: 100081 电话: 010-82108548; 010-82105793

网址: http://zwxb.chinacrops.org/

E-mail: zwxb301@caas.cn

出版科学出版科

印刷装订 北京科信印刷有限公司总发行 斜 华 出 版 社

北京市东黄城根北街 16 号 邮编: 100717

电话: 010-64017032

国外发行 中国国际图书贸易集团公司

北京 399 信箱(100044)

Supervised by China Association for Science and Technology

Sponsored by Crop Science Society of China, Institute of Crop Science,

Chinese Academy of Agricultural Sciences, and China Science Publishing & Media Group Ltd.

Editor-in-chief: WAN Jian-Min

Edited by Editorial Committee of ACTA AGRONOMICA SINICA

Add: 12 Zhongguancun South Street, Beijing 100081, China

Tel: 010-82108548; Fax: 010-82105793 Website: http://zwxb.chinacrops.org/

E-mail: zwxb301@caas.cn

Published by SCIENCE PRESS

Printed by Beijing Kexin Printing Co., Ltd.

Distributed by SCIENCE PRESS

Add: 16 Donghuangchenggen North Street, Beijing 100717, China

Tel: 010-64017032

Foreign: China International Book Trading Corporation Add: P. O. Box 399, Beijing 100044, China

ISSN 0496-3490 CN 11-1809/S

国内邮发代号: 82-336 国外发行代号: M445 国内定价: 60.00元



网 站



微信



手机报

