

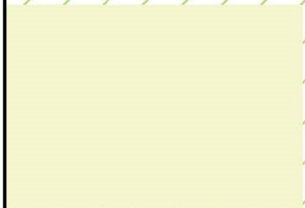


ISSN 0496-3490
CN 11-1809/S

作物学报

ACTA AGRONOMICA SINICA

第47卷 第7期 Vol. 47 No. 7



中国作物学会 中国农业科学院作物科学研究所 主办
Sponsored by Crop Science Society of China and
Institute of Crop Sciences, CAAS
科学出版社 出版
Published by Science Press

7
2021

作物学报

(ZUOWU XUEBAO)

第 47 卷 第 7 期 2021 年 7 月

目 次

作物遗传育种·种质资源·分子遗传学

- | | | | | | | | |
|------|--|---------|-----|-----|----------------------|-----|-----|
| 1205 | 大麦籽粒 β -葡聚糖含量的全基因组关联分析 | 耿 腊 | 黄业昌 | 李梦迪 | 谢尚耿 | 叶玲珍 | 张国平 |
| 1215 | 水稻核不育系柱头性状的主基因+多基因遗传分析 | 江建华 | 张武汉 | 党小景 | 荣 慧 | 叶 琴 | 胡长敏 |
| 1228 | 玉米穗轴粗全基因组关联分析 | 张 瑛 | 何 强 | 王德正 | | | |
| 1239 | 脯氨酸羟化酶 <i>GhP4H2</i> 在棉花纤维发育中的功能研究 | 马 娟 | 曹言勇 | 李会勇 | | | |
| 1248 | 不同耐旱性青稞叶片差异蛋白分析 | 高 璐 | 许文亮 | | | | |
| 1259 | 基于 SSR 标记的雪茄烟种质资源指纹图谱库的构建及遗传多样性分析 | 李 洁 | 付 惠 | 姚晓华 | 吴昆仑 | | |
| | | 王琰琰 | 王 俊 | 刘国祥 | 钟 秋 | 张华述 | 骆铮珍 |
| | | 陈志华 | 戴培刚 | 佟 英 | 李 媛 | 蒋 勋 | 张兴伟 |
| | | 杨爱国 | | | | | |
| 1275 | 甘蔗割手密种类甜蛋白家族鉴定及栽培种同源基因功能分析 | 苏亚春 | 李聪娜 | 苏炜华 | 尤垂淮 | 岑光莉 | 张 畅 |
| 1297 | 甘薯细胞壁蔗糖转化酶基因 <i>IbCWIN</i> 家族成员鉴定及表达分析 | 任永娟 | 阙友雄 | | | | |
| 1309 | 78 份四川小麦育成品种(系)条锈病抗性鉴定与抗条锈病基因分子检测 | 宋天晓 | 刘 意 | 饶莉萍 | Soviguidi Deka Reine | | |
| | | Judesse | 朱国鹏 | 杨新笋 | | | |
| | | 习 玲 | 王昱琦 | 朱 微 | 王 益 | 陈国跃 | 蒲宗君 |
| | | 周永红 | 康厚扬 | | | | |

耕作栽培·生理生化

- | | | | | | | | |
|------|------------------------------------|-----|-----|-----|-----|-----|-----|
| 1324 | 不同时期灌溉对华北平原春玉米穗粒数的影响 | 高 震 | 梁效贵 | 张 莉 | 赵 雪 | 杜 雄 | 崔彦宏 |
| | | 周顺利 | | | | | |
| 1332 | 多肽配体 R18 促进水稻弱势籽粒灌浆的初步研究 | 张志兴 | 陈 花 | 敏秀梅 | 许海龙 | 宋 果 | 林文雄 |
| 1342 | 基于高光谱的水稻叶片氮含量估计的深度森林模型研究 | 李金敏 | 陈秀青 | 杨 琦 | 史良胜 | | |
| 1351 | 夏玉米不同栽培模式花后叶片光合性能的差异 | 李 静 | 王洪章 | 刘 鹏 | 张吉旺 | 赵 斌 | 任佰朝 |
| 1360 | 播期对四川盆地杂交籼稻米饭食味品质的影响 | 李 博 | 张 驰 | 曾玉玲 | 李秋萍 | 任洪超 | 卢 慧 |
| | | 杨 帆 | 陈 虹 | 王 丽 | 陈 勇 | 任万军 | 邓 飞 |
| 1372 | 控释氮肥运筹对钵苗摆栽籼粳杂交稻甬优 1540 产量及氮肥利用的影响 | 柯 健 | 陈婷婷 | 徐浩聪 | 朱铁忠 | 吴 汉 | 何海兵 |
| | | 尤翠翠 | 朱德泉 | 武立权 | | | |

研究简报

- | | | | | | | | |
|------|-------------------------------|-----|-----|-----|-----|-----|-----|
| 1383 | 生物菌肥与无机肥配施对藜麦农艺性状、产量性状及品质的影响 | 邓 妍 | 王娟玲 | 王创云 | 赵 丽 | 张丽光 | 郭虹霞 |
| | | 郭红霞 | 秦丽霞 | 王美霞 | | | |
| 1391 | 利用东乡普通野生稻染色体片段置换系定位产量相关性状 QTL | 罗 兰 | 雷丽霞 | 刘 进 | 张瑞华 | 金桂秀 | 崔 迪 |
| | | 黎毛毛 | 马小定 | 赵正武 | 韩龙植 | | |
| 1402 | 硬粒小麦-长穗偃麦草附加系、代换系和易位系的创制 | 段亚梅 | 罗贤磊 | 陈士强 | 高 勇 | 陈建民 | 戴 毅 |

ACTA AGRONOMICA SINICA

Vol. 47 No. 7 July 2021

CONTENTS

CROP GENETICS & BREEDING · GERMPLASM RESOURCES · MOLECULAR GENETICS

- 1205 **Genome-wide association study of β -glucan content in barley grains**
GENG La, HUANG Ye-Chang, LI Meng-Di, XIE Shang-Geng, YE Ling-Zhen, and ZHANG Guo-Ping
- 1215 **Genetic analysis of stigma traits with genic male sterile line by mixture model of major gene plus polygene in rice (*Oryza sativa* L.)**
JIANG Jian-Hua, ZHANG Wu-Han, DANG Xiao-Jing, RONG Hui, YE Qin, HU Chang-Min, ZHANG Ying, HE Qiang, and WANG De-Zheng
- 1228 **Genome-wide association study of ear cob diameter in maize**
MA Juan, CAO Yan-Yong, and LI Hui-Yong
- 1239 **GhP4H2 encoding a prolyl-4-hydroxylase is involved in regulating cotton fiber development**
GAO Lu and XU Wen-Liang
- 1248 **Differentially expressed protein analysis of different drought tolerance hulless barley leaves**
LI Jie, FU Hui, YAO Xiao-Hua, and WU Kun-Lun
- 1259 **Construction of SSR fingerprint database and genetic diversity analysis of cigar germplasm resources**
WANG Yan-Yan, WANG Jun, LIU Guo-Xiang, ZHONG Qiu, ZHANG Hua-Shu, LUO Zheng-Zhen, CHEN Zhi-Hua, DAI Pei-Gang, TONG Ying, LI Yuan, JIANG Xun, ZHANG Xing-Wei, and YANG Ai-Guo
- 1275 **Identification of thaumatin-like protein family in *Saccharum spontaneum* and functional analysis of its homologous gene in sugarcane cultivar**
SU Ya-Chun, LI Cong-Na, SU Wei-Hua, YOU Chui-Huai, CEN Guang-Li, ZHANG Chang, REN Yong-Juan, and QUE You-Xiong
- 1297 **Identification and expression analysis of cell wall invertase *IbCWIN* gene family members in sweet potato**
SONG Tian-Xiao, LIU Yi, RAO Li-Ping, Soviguidi Deka Reine Judesse, ZHU Guo-Peng, and YANG Xin-Sun
- 1309 **Identification of resistance to wheat and molecular detection of resistance genes to wheat stripe rust of 78 wheat cultivars (lines) in Sichuan province**
XI Ling, WANG Yu-Qi, ZHU Wei, WANG Yi, CHEN Guo-Yue, PU Zong-Jun, ZHOU Yong-Hong, and KANG Hou-Yang

TILLAGE & CULTIVATION · PHYSIOLOGY & BIOCHEMISTRY

- 1324 **Effects of irrigating at different growth stages on kernel number of spring maize in the North China Plain**
GAO Zhen, LIANG Xiao-Gui, ZHANG Li, ZHAO Xue, DU Xiong, CUI Yan-Hong, and ZHOU Shun-Li
- 1332 **Preliminary study of the peptide aptamer R18 promotes grain filling of rice inferior spikelets**
ZHANG Zhi-Xing, CHEN Hua, MIN Xiu-Mei, XU Hai-Long, SONG Guo, and LIN Wen-Xiong
- 1342 **Deep learning models for estimation of paddy rice leaf nitrogen concentration based on canopy hyperspectral data**
LI Jin-Min, CHEN Xiu-Qing, YANG Qi, and SHI Liang-Sheng
- 1351 **Differences in photosynthetic performance of leaves at post-flowering stage in different cultivation modes of summer maize (*Zea mays* L.)**
LI Jing, WANG Hong-Zhang, LIU Peng, ZHANG Ji-Wang, ZHAO Bin, and REN Bai-Zhao
- 1360 **Effects of sowing date on eating quality of *indica* hybrid rice in Sichuan Basin**
LI Bo, ZHANG Chi, ZENG Yu-Ling, LI Qiu-Ping, REN Hong-Chao, LU Hui, YANG Fan, CEHN Hong, WANG Li, CHEN Yong, REN Wan-Jun, and DENG Fei
- 1372 **Effects of different application methods of controlled-release nitrogen fertilizer on grain yield and nitrogen utilization of *indica-japonica* hybrid rice in pot-seedling mechanically transplanted**
KE Jian, CHEN Ting-Ting, XU Hao-Cong, ZHU Tie-Zhong, WU Han, HE Hai-Bing, YOU Cui-Cui, ZHU De-Quan, and WU Li-Quan

RESEARCH NOTES

- 1383 **Effects of combined application of bio-bacterial fertilizer and inorganic fertilizer on agronomic characters, yield, and quality in quinoa**
DENG Yan, WANG Juan-Ling, WANG Chuang-Yun, ZHAO Li, ZHANG Li-Guang, GUO Hong-Xia, GUO Hong-Xia, QIN Li-Xia, and WANG Mei-Xia
- 1391 **Mapping QTLs for yield-related traits using chromosome segment substitution lines of Dongxiang common wild rice (*Oryza rufipogon* Griff.) and Nipponbare (*Oryza sativa* L.)**
LUO Lan, LEI Li-Xia, LIU Jin, ZHANG Rui-Hua, JIN Gui-Xiu, CUI Di, LI Mao-Mao, MA Xiao-Ding, ZHAO Zheng-Wu, and HAN Long-Zhi
- 1402 **Creation of disomic addition, substitution and translocation lines of durum wheat-*Thinopyrum elongatum***
DUAN Ya-Mei, LUO Xian-Lei, CHEN Shi-Qiang, GAO Yong, CHEN Jian-Min, and DAI Yi

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 Institute of Crop Sciences, 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. It occupies the first position on the list of Chinese core journals in "Agronomy and Crops" field. The editorial board consists of 150 specialists in the field of crop sciences. Among them, 26 are academicians of Chinese Academy of Sciences or Chinese Academy of Engineering, 22 are from the outside of China, and 2 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, DOAJ, Food Science and Technology Abstracts, Index of Copernicus, Japan Science and Technology Agency, Scopus, 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.