

# ACTA

ISSN 1000-7091  
CODEN: HNUOAG



# 华北农学报

ACTA AGRICULTURAE BOREALI-SINICA

■中国精品科技期刊 ■中文核心期刊 ■中国科学引文数据库核心期刊 ■  
■中国科技核心期刊 ■中国农林核心期刊 ■RCCSE中国核心学术期刊 ■

华北农学报

2022年 ■ 第三十七卷 ■ 第三期

华北农学报编辑部



学报官网



微信公众号

2022 第37卷 第3期  
Vol.37 No.3

华北农学报编辑部



## 目 次

### 作物遗传育种·种质资源·生物技术

- 大豆 *GmZAT12* 基因的克隆和表达分析 ..... 张晋玉,徐新娟,晁毛妮,张晓红,吴向远,高际涛,黄中文(1)  
蓖麻赤霉素氧化酶基因的全基因组鉴定和表达分析 ..... 代梦媛,高梅,李文昌(8)  
陆地棉 *GhCRE1* 影响种子萌发初探 ..... 徐敏慧,Josee Ornella Musaniwabo,韩少凡,刘一涵,杜丽桦,刘爱玉,汪启明,屠小菊(19)  
棉花 *GalMII-like* 基因功能及其启动子表达分析 ..... 杨小贝,陈二永,李成伟(27)  
茎瘤芥 *BjuEAR1-1* 的克隆与表达分析 ..... 程春红,游经番,蔡兆明,叶春宏,陈丽(37)  
不同硬度西瓜果皮的转录组测序及相关基因表达分析 ..... 张敬敬,李冰,史宇凡,高秀瑞,潘秀清,宋雪,武彦荣(44)  
甘蓝型油菜 *BnaFIL* 基因启动子的克隆与表达分析 ..... 陈静,胡蓉,刘勇,秦艺,熊兴华(53)  
黄皮西葫芦类胡萝卜素合成酶基因的鉴定及 *PSY1* 和 *LCYE2* 克隆分析 ..... 唐忠丽,逯晓楠,赵蕊,刘庆华,李梅兰,雷逢进,许小勇(60)

### 耕作栽培·生理生化

- 不同轮作模式对谷子生理生化指标和产量的影响 ..... 徐丽霞,董雪,张艾英,郭二虎,孙靓(68)  
大豆主茎木质素积累规律分析 ..... 李艳燕,赵彩桐,齐阳阳,刘明,张书瑞,刘志华,李文滨,姜振峰(77)  
盐碱胁迫对甘蓝型油菜生理及分子机制的影响 ..... 李班,吕莹,杨明煊,宋婷,于放,刘志文(86)  
土壤酸化对玉米产量、氮代谢及相关基因表达的影响 ..... 张宗祥,黄峥嵘,吴雪凡,刘楠楠,李笑笑,董召荣,宋贺(94)

### 资源环境·植物保护

- 冬小麦-夏玉米轮作区土壤磷与磷肥产量效应变化 ..... 刘建玲,吴晶,贾可,廖文华,吕英华,马俊永(104)  
畦田补灌对冬小麦产量形成及水分利用效率的影响 ..... 冯素伟,刘朝阳,胡铁柱,丁位华,王光涛,茹振钢(112)  
氮素对高温胁迫下玉米籽粒发育的调控效应 ..... 蔡丰乐,马昕,王帅丽,卢良涛,邵瑞鑫,李鸿萍,赵亚丽,穆心愿,赵霞,李树岩,刘天学(119)

- 化肥减量配施有机肥对青贮玉米产量、营养品质及土壤养分的影响 ..... 焦金龙,李友强,吴玲,尚静,高世斌,刘海岚,吴元奇,林海建(128)  
浅埋滴灌下尿素减量配施 UAN 对春玉米干物质积累及氮效率的影响 ..... 郁继承,韩镁琪,杨恒山,张玉芹,马金慧,郭晓旭(136)

- 水肥协同对双季杂交稻农艺性状及产量的影响 ..... 石爱龙,王礼煌,李文秀,王学华(145)  
腐植酸等碳替代有机肥对葡萄产量、品质及土壤养分的影响 ..... 宋挚,郭新送,范仲卿,洪丕征,陈士更,刘同信,张晶,张宏,丁方军,赵锦彪(158)

- 长期不同施肥模式对中低产黄泥田土壤团聚体组成及碳组分的影响 ..... 陈超,宓文海,居静,吴良欢,赵海涛(168)  
木醋液对八棱海棠生长及再植病土壤主要特性的影响 ..... 路晓月,王子夜,韩建玮,许露,张晓飞,韩杰,王志刚,刘越,索相敏,阎爱华(175)

- 辣椒 *CaWRKY30* 转录因子的克隆、亚细胞定位及番茄斑萎病毒侵染下的表达分析 ..... 贾志强,许云玉,高雪,陶宏征,陈增敏,刘雅婷,李永忠(186)  
活性氧及抗病信号分子介导的向日葵抗黄萎病机制初探 ..... 张键,曹雄,杨剑锋,贾硕,刘麟,阿德拉·曼德拉·俄罗摩,冯伊彤,赵君(193)

- 江苏大豆上分离的豇豆轻斑驳病毒基因组序列克隆及特征分析 ..... 吉颖,孙枫,吴淑华,李硕,涂丽琴,高丹娜,崔晓艳,陈新,季英华,郭青云(200)  
尖孢镰刀菌 T-DNA 插入突变体的筛选及插入基因分析 ..... 郭芳睿,刘浥,杨柯昕,褚美荣,张全发,张雅菲,王树桐,曹克强(206)

### 畜牧·水产·兽医

- 基于转录组挖掘不同性别贵州白山羊肌肉生长发育的关键基因及 PI3K/ATK 信号通路分析 ..... 安清明,王星,吴震洋,孟金柱,赵园园,宋兴超(213)

- 过表达山羊 *APOC3* 基因促进肌内脂肪细胞分化 .....冉黎,吕锦诗,张浩,王永,朱江江,李艳艳,孟庆勇,林亚秋(223)  
纳米硒对热应激虹鳟血清抗氧化指标和免疫指标的影响 ..... 卢军浩,李兰兰,权金强,赵桂研,孙军,林桥荣,刘哲(231)

## CONTENTS

### Crop Genetics & Breeding · Germplasm Resources · Biotechnology

- Cloning and Expression Analysis of *GmZAT12* Gene in Soybean ..... ZHANG Jinyu et al(1)  
 Genome-wide Identification and Expression Analysis of Gibberellin Oxidase Gene in *Ricinus communis* L. ..... DAI Mengyuan et al(8)  
 Preliminary Studies on the Effect of *GhCRE1* on Seed Germination in *Gossypium hirsutum* L. ..... XU Minhui et al(19)  
 Function and Promoter Expression Analysis of *GalMII-like* Gene in Cotton ..... YANG Xiaobei et al(27)  
 Cloning and Expression Analysis of *BjuEAR1-1* in Tuber Mustard ..... CHENG Chunhong et al(37)  
 Transcriptome Sequencing and Gene Expression Analysis of Watermelon Peel with Different Firmness ..... ZHANG Jingjing et al(44)  
 Cloning and Expression Analysis of *BnAFIL* Gene Promoter in *Brassica napus* L. ..... CHEN Jing et al(53)  
 Identification of Enzyme Genes Related to Carotenoid Synthesis and Cloning Analysis of *PSY1* and *LCYE2* in Yellow Peeled  
     Zucchini ..... TANG Zhongli et al(60)

### Tillage & Cultivation · Physiology & Biochemistry

- Effects of the Different Rotation Patterns on Physiological and Biochemical Indicators and Yield of Millet's  
     ..... XU Lixia et al(68)  
 Analysis on the Accumulation of Lignin in the Stem of Soybean ..... LI Yanyan et al(77)  
 Effects of Saline-alkali Stress on Physiology and Molecular Mechanism of *Brassica napus* L. ..... LI Ban et al(86)  
 Effects of Soil Acidification on Yield, Nitrogen Metabolism, and Related Gene Expression of Maize  
     ..... ZHANG Zongxiang et al(94)

### Resources & Environment · Plant Protection

- Trends of Yield Responses to Soil Phosphorus and Phosphate Fertilizer in Winter Wheat-Summer Maize Rotation System  
     ..... LIU Jianling et al(104)  
 Effects of Border Irrigation on Yield Formation and Water Use Efficiency of Winter Wheat ..... FENG Suwei et al(112)  
 Effects Regulating of Nitrogen on Grain Development of Maize under Heat Stress ..... CAI Fengle et al(119)  
 Effects of Fertilizer Reduction Combined with Organic Fertilizer on Yield, Nutritional Value and Soil Nutrient of Silage Maize  
     ..... JIAO Jinlong et al(128)  
 Effects of Urea Reduction with UAN on Dry Matter Accumulation and Nitrogen Efficiency of Spring Maize under Shallow Buried Drip  
     Irrigation ..... TAI Jicheng et al(136)  
 Effects of Water and Fertilizer on Agronomic Characters and Yield of Double-cropping Hybrid Rice ..... SHI Ailong et al(145)  
 Effect of Carbon Replacement Organic Fertilizers Such as Humic Acid on Grape Yield, Quality and Soil Nutrients  
     ..... SONG Zhi et al(158)

- Effect of Long-term Different Fertilization Pattern on Soil Aggregate Composition and Organic Carbon Fractions in Yellow  
     Clayey Paddy Soil ..... CHEN Chao et al(168)

- Effects of Pyroligneous Acids on the Growth and Main Characteristics of Replanted Soil of *Malus angustifolia*  
     ..... LU Xiaoyue et al(175)

- Cloning, Subcellular Positioning of Pepper *CaWRKY30* Transcription Factor, and Its Expression Analysis by *Tomato spotted  
     wilt orthotospovirus* Infected ..... JIA Zhiqiang et al(186)

- Preliminary Study on the Mechanism of Resistance to Sunflower *Verticillium* Wilt Mediated by Reactive Oxygen and Signaling  
     Molecules ..... ZHANG Jian et al(193)

- Genomic Sequence Cloning and the Characteristics Analysis of *Cowpea mild mottle virus* Infecting Soybean from Jiangsu Province  
     ..... JI Ying et al(200)

- Screening of *Fusarium oxysporum* T-DNA Inserted Mutants and Analysis of Inserting Genes ..... GUO Fangrui et al(206)

### Animal Husbandry · Fisheries · Veterinarian

- Mining Key Genes of Muscle Growth and Development in Guizhou White Goats with Different Genders and Analysis of PI3K/ATK Signal  
     Pathway Based on Transcriptome Sequencing ..... AN Qingming et al(213)  
 Effect of Overexpression of Goat *APOC3* Gene on Differentiation of Intramuscular Adipocytes ..... RAN Li et al(223)  
 Effects of Nano Selenium on Serum Antioxidant and Immune Indexes of *Oncorhynchus mykiss* under Heat Stress  
     ..... LU Junhao et al(231)