

第39卷 Vol. 39

ISSN 1000-7601

CODEN GDNYEQ

# 干旱地区农业研究

GANHAN DIQU NONGYE YANJIU

AGRICULTURAL  
RESEARCH IN  
THE ARID AREAS



5  
2021

ISSN 1000-7601



9 771000 760218

# 干旱地区农业研究

第39卷第5期(总第188期)

2021年9月10日出版

## 目 次

### 旱区作物种质资源

- 白菜型冬油菜抗倒伏性评价及其与株型性状的相关分析 ..... 方新玲,李辉,魏家萍,等(1)  
甜芥种子多倍体诱导及其C1代DNA与形态学鉴定 ..... 李德利,代双容,贾妍恒,等(11)  
北方强冬性区白菜型冬油菜临界安全越冬率及产量补偿效应分析  
..... 郑国强,刘自刚,魏家萍,等(19)

### 植物抗逆生理

- DNA去甲基化参与提高白菜型冬油菜抗寒性的生理机制  
..... 王万鹏,马骊,孙柏林,等(29)  
缺氮胁迫阶段及施氮时期对油用亚麻干物质及氮素积累的影响  
..... 郭丽琢,杨波,高玉红,等(40)  
解钾菌与盐胁迫对枸杞幼苗根系特征和生理代谢的影响  
..... 朱娟娟,马海军,覃洪云,等(50)  
杂交甜高粱的钠离子累积特性研究 ..... 蒋博,王琦,李文建,等(59)  
PEG 6000模拟干旱胁迫下甘蓝型油菜芽期及苗期抗旱指标筛选  
..... 刘翔,左凯峰,许伟,等(66)  
2,4-表油菜素内酯对多菌灵处理下葡萄抗氧化代谢系统的影响  
..... 孙嘉华,李雨萌,凌翰,等(71)

### 土壤与植物营养

- 长期施肥对黄土丘陵坡地农田土壤质量和谷子产量的影响  
..... 高小峰,闫本帅,吴春晓,等(76)  
胡麻-小麦轮作更替土壤的细菌群落多样性分析 ..... 王立光,叶春雷,陈军,等(84)  
4种农作物对常见城市绿化树木落花的化感响应 ..... 马勇,范晓慧,刘增文(90)  
施磷对陇中黄土高原春小麦耕层土壤磷组分及有效性的影响  
..... 齐鹏,王晓娇,焦亚鹏,等(99)  
有机肥与化肥配施下土壤氮组分变化与氮素利用率研究  
..... 慕君,马旭东,张丹丹,等(107)  
生物炭对土壤理化性质和玉米生长的影响 ..... 纪立东,柳晓桐,司海丽,等(114)  
多功能生态肥对连作马铃薯土壤性质及其产量和效益的影响  
...万方数据..... 闫治斌,王学,马明帮,等(121)

## 节水灌溉与土壤水分

- 滴灌土壤基质势调控对红豆杉生理特性及次生代谢物含量的影响 ..... 张玉豪, 姚素梅, 孟丽, 等(129)  
宁夏中部干旱带微咸水灌溉对砂土混合覆盖下土壤水盐运移的影响 ..... 徐天渊, 贾振江, 李王成, 等(138)  
滴灌高频施肥条件下玉米适宜灌水量的试验研究 ..... 顾桂栋, 窦超银, 胡倩, 等(145)  
不同基质下咸、淡水灌溉对番茄生长和品质的影响 ..... 武育芳, 杨官凯, 曹行行, 等(153)

## 耕作与栽培

- 保护性耕作措施对轮作蚕豆碳氮积累及产量的影响 ..... 成欣, 杜娟, 谢小玉, 等(160)  
种植密度与施氮量对旱地地膜玉米产量、水分利用效率和品质的影响 ..... 赵晖, 李尚中, 樊廷录, 等(169)  
深松深度对甜菜生长发育及产量和产糖量的调控 ..... 阿不都卡地尔·库尔班, 郑峰, 潘竟海, 等(178)  
旱直播对水稻穗部性状、产量和经济效益的影响 ..... 徐令旗, 郭晓红, 吕艳东, 等(186)  
外源调节剂组合喷施对化学打顶棉花的调控效应 ..... 马春梅, 吴雪琴, 李江余, 等(193)

## 旱区生态及资源利用

- 典型作物 Logistic 模型生长参数空间分布及其地区水热相关性 ..... 张继红, 刘云鹤, 王全九, 等(199)  
陕西省主要作物灰水足迹时空变化特征研究 ..... 姜旭海, 韩玲, 李帆(210)  
甘肃两种典型盐成土不同粒径土壤颗粒中盐分离子的分布特征 ..... 郭全恩, 曹诗瑜, 展宗冰, 等(216)

## 旱作农业机械

- 基于根点替代的猕猴桃果园行间导航线生成方法研究 ..... 马驰, 董子扬, 陈志军, 等(222)  
自走式枸杞振动采收机设计与试验 ..... 万芳新, 孙浩博, 杜小龙, 等(231)

## 研究动态

- “旱地农业高效用水技术”研究新进展 ..... 韩清芳(239)  
中国农业工程学会农业水土工程专业委员会第十一届学术研讨会成功召开 ..... 封三

## CONTENTS

### Crop Germplasm Resources in Arid Areas

- Evaluation of lodging resistance and correlation analysis with plant architecture  
in winter rapeseed ..... *FANG Xinling, et al*(1)
- Polyplloid induction of common buckwheat seeds and its C1 generation DNA  
and morphological identification ..... *LI Deli, et al*(11)
- The critical safe overwintering and yield compensation effect of winter rapeseed  
(*Brassica rapa* L.) in strong winter region of North China  
..... *ZHENG Guoqiang, et al*(19)

### Plant Adverse-resistance Physiology

- Physiological mechanism of DNA demethylation in improving the cold  
resistance of *Brassica rapa* L. ..... *WANG Wanpeng, et al*(29)
- Effects of nitrogen deficiency stage and nitrogen application period on dry  
matter and nitrogen accumulation of oil flax ..... *GUO Lizhuo, et al*(40)
- Effects of potassium-solubilizing bacteria and salt stress on root property  
and physiological metabolism of *Lycium barbarum* seedlings  
..... *ZHU Juanjuan, et al*(50)
- Na<sup>+</sup> accumulation characteristics in a hybrid sweet sorghum variety  
..... *JIANG Bo, et al*(59)
- Selecting drought resistance indexes of *Brassica napus* L. under PEG 6000  
simulated drought stress at germination and seedling stage ..... *LIU Xiang, et al*(66)
- Effects of 2,4-epibrassinolide on antioxidant system of  
grape seedlings treated with carbendazim ..... *SUN Jiahua, et al*(71)

### Soil and Plant Nutrition

- Effects of long-term fertilization on soil quality and millet yield on slope  
farmland in loess hilly areas ..... *GAO Xiaofeng, et al*(76)
- Diversity analysis of soil bacterial community in oil flax-wheat rotation system  
..... *WANG Liguang, et al*(84)
- Allelopathy response of four crops to falling flowers in common urban greening trees  
..... *MA Yong, et al*(90)
- Effects of phosphorus application on phosphorus composition and availability of  
spring wheat topsoil on the Loess Plateau of Longzhong ..... *QI Peng, et al*(99)
- Study on nitrogen composition variation and nitrogen use efficiency under  
combined application of organic fertilizer and chemical fertilizer ..... *MU Jun, et al*(107)
- Effects of biomass charcoal on soil physicochemical properties and corn growth  
...万方数据..... *JI Lidong, et al*(114)

Effects of multifunctional ecological fertilizer on soil properties, yield and benefit of continuous cropping potato ..... YAN Zhibin, et al(121)

## Water-saving Irrigation and Soil Moisture

Effect of regulating soil matric potential under drip irrigation on physiological characteristics and secondary metabolite contents of *Taxus chinensis* ..... ZHANG Yuhao, et al(129)

Effects of brackish water irrigation on water and salt transport under mixed sand cover in arid zone of central Ningxia ..... XU Tianyuan, et al(138)

An experimental study on suitable irrigation amount of maize under drip irrigation and high frequency fertilization ..... GU Guidong, et al(145)

Effects of brackish and fresh water irrigation on tomato growth and quality under different substrates ..... WU Yufang, et al(153)

## Tillage and Cultivation

Effects of conservation cultivation measures on carbon nitrogen accumulation and yield of rotation broad bean ..... CHENG Xin, et al(160)

Effects of planting density and nitrogen fertilizer rate on yield, water use efficiency and quality of dryland maize with film mulching ..... ZHAO Hui, et al(169)

Regulation of subsoiling on growth, development, yield and sugar yield of sugarbeet ..... ABDUKADIER Kurban, et al(178)

Effects of dry direct seeding on panicle characters, yield and economic benefits of rice ..... XU Lingqi, et al(186)

Regulation effects of different combinations of exogenous substances on chemical topping cotton ..... MA Chunmei, et al(193)

## Ecology and Resource Utilization in Arid Areas

Typical crops' spatial variability of Logistic model parameters and its correlation with regional water and heat ..... ZHANG Jihong, et al(199)

Study on temporal and spatial changes of grey water footprints of main crops in Shaanxi Province ..... JIANG Xuhai, et al(210)

Distribution characteristics of salt ions in soil aggregates with different particle diameters for two types of typical halosols in Gansu Province ..... GUO Quanen, et al(216)

## Dryland Farm Machinery

Research on navigation line generation of kiwi orchard between rows based on root point substitution ..... MA Chi, et al(222)

Design and test of self-propelled *Lycium barbarum* vibrating harvester ..... WAN Fangxin, et al(231)

## Research Advances

Research progress of high efficiency water use technology for dryland agriculture ..... (239)