

第32卷 Vol. 32

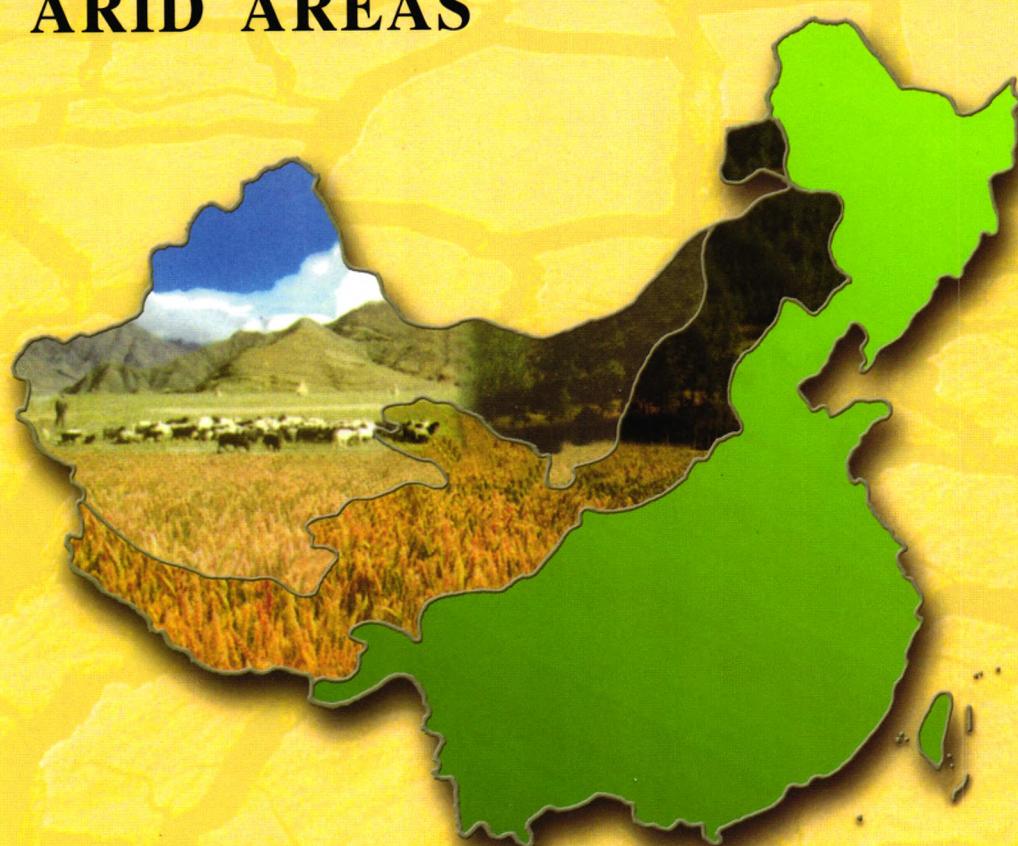
ISSN 1000-7601

CODEN GDNYEQ

# 干旱地区农业研究

GANHAN DIQU NONGYE YANJIU

AGRICULTURAL  
RESEARCH IN  
THE ARID AREAS



1

2014



01>

9 771000 760126

万方数据

# 干旱地区农业研究

第32卷第1期(总第142期) 2014年1月10日出版

## 目 次

### 耕作与栽培

- 半干旱区不同覆膜时期、方式与膜色对土壤水分及马铃薯水分利用效率的影响 ..... 买自珍,余萍,买娟,等 (1)
- 陕西关中一年两熟地区保护性耕作关键技术综合效应研究——Ⅱ. 对两季作物生长发育及产量产值的影响 ..... 朱琳,张炜,党小选,等 (11)
- 补水移栽对甜菜苗期生长及产量品质的影响 ..... 李明,张立峰,武东霞,等 (18)
- 不同玉米自交系耐深播能力的差异分析 ..... 彭云玲,杨芳林,赵小强,等 (25)
- 连作对马铃薯根系形态及吸收能力的影响 ..... 张文明,邱慧珍,刘星,等 (34)
- 沟垄覆膜对旱作马铃薯土壤养分迁移及产量的影响 ..... 秦舒浩,代海林,张俊莲,等 (38)
- 甜玉米蔬菜间套复种模式产值效益研究 ..... 安瞳昕,吴伯志,代平,等 (42)
- 秸秆覆盖下旱地小麦收获指数降低的原因解析 ..... 张树兰,刘俊梅,黎青慧,等 (47)

### 节水灌溉与土壤水分

- 干旱区棉花水分胁迫指数对滴灌均匀系数和灌水量的响应 ..... 关红杰,李久生,栗岩峰 (52)
- 祁连山八宝河流域典型草地土壤入渗特征 ..... 李广文,冯起,张福平,等 (60)
- 基于 HYDRUS - 2D 模型模拟耕荒地水盐运移规律 ..... 李亮,李美艳,张军军,等 (66)
- 不同滴头流量及灌水定额下红枣树耗水规律 ..... 洪明,朱航威,穆哈西,等 (72)
- 春季储水灌溉条件下啤酒大麦节水增产机理研究 ..... 丁林,金彦兆,王以兵 (78)
- 黄瓜结果期灌水上限的研究 ..... 贺忠群,邹志荣 (84)
- 亏缺灌溉与氮营养对小粒咖啡苗木生长及水分利用的影响 ..... 钟原,刘小刚,耿宏焯,等 (89)
- 底墒差异对压砂地西瓜耗水规律的影响 ..... 谭军利,田军仓,王西娜,等 (94)
- 土壤水动力学模型在 SPAC 系统中应用研究进展 ..... 吴姗,莫非,周宏,等 (100)

### 土壤与植物营养

- 生物炭用量对模拟土柱氮素淋失和田间土壤水分参数的影响 ..... 陈心想,何绪生,张雯,等 (110)
- 干密度和含水量影响下非饱和黄土正冻结过程研究 ..... 高远,张小辉,张彩阳 (115)
- 二月兰不同翻压量对土壤肥力的影响 ..... 刘佳,张杰,徐昌旭,等 (123)
- 施氮量对棉花叶位 SPAD 值的影响及棉花氮素营养诊断 ..... 罗新宁,朱友娟,张宏勇 (128)
- 疏勒河流域不同植被类型土壤酶活性动态变化 ..... 南丽丽,郭全恩,曹诗瑜,等 (134)

水肥耦合对糜子干物质运转和产量的影响 ..... 王君杰,陈凌,王海岗,等 (140)

## 植物抗逆生理

- 集雨节灌种植技术对夏玉米光合特性及产量的影响 ..... 张艳,贾志宽,邴昊阳,等 (146)  
钙对低温胁迫下玉米幼苗氧化损伤的保护作用 ..... 王芳,王丹丹,赵娟,等 (155)  
 $\text{Ca}^{2+}$  对  $\text{Cd}^{2+}$  胁迫下板蓝根种子萌发及幼苗抗氧化酶活性的影响 ..... 孟红梅,张芬琴,韩多红,等 (161)  
 $\text{SOD}_M$ 、 $\text{DTA}-6$  及  $\text{Cc}$  对马铃薯叶片碳代谢相关生理指标的影响 ..... 项洪涛,孙巨峰,冯乃杰,等 (166)  
种子超干贮藏对紫花苜蓿前期生长和生理特性的影响 ..... 霍平慧,李剑峰,师尚礼,等 (171)  
戈壁荒漠区膜下滴灌对酿酒葡萄生理特性的影响 ..... 李昭楠,李唯,刘七军,等 (177)  
不同灌水量对黄淮海地区冬小麦叶绿素荧光及光保护特性的影响 ..... 徐心志,马超,孙倩,等 (183)  
蒙古扁桃种子萌发和幼苗生长对渗透胁迫的响应 ..... 王进,张勇,赵刚,等 (191)

## 旱区生态与资源利用

- 半干旱地区大型灌区水文生态系统质量综合评价——以陕西省泾惠渠灌区为例 ..... 乔长录 (196)  
 $\text{GA-BP}$  组合预测方法在北洛河年径流量预测中的应用 ..... 王广宇,解建仓,张建龙 (203)  
豫西低山丘陵区不同土地利用方式对陡坡地土壤理化性状的影响 ..... 刘沛松,王健胜,楚纯洁,等 (208)  
不同利用年限设施栽培土壤金属元素含量的变化 ..... 湛润生,岳新丽,韩志平,等 (213)  
有机废弃物菌糠和醋糟对次生盐渍化土壤修复效果研究 ..... 代立兰,张怀山,夏曾润,等 (218)  
河西走廊东部地面温度的变化特征及影响因子分析 ..... 杨晓玲,兰晓波,丁文魁,等 (223)  
宁南山区日光温室内气温变化规律与最低气温预测 ..... 张磊,曹宁,卫建国,等 (230)

## 干旱监测预报

基于条件植被温度指数的冬小麦主要生育时期干旱监测效果评价

- Ⅱ.改进的层次分析法和变异系数法组合赋权 ..... 李艳,王鹏新,刘峻明,等 (236)  
陇南山区干旱气候特征及其对农业生产的影响与灾害风险区划 ..... 肖志强,赵彦锋,吴巧娟 (240)  
陕西夏季旱涝环流特征及预测方法 ..... 王娜,方建刚,崔巍,等 (246)

## 旱区作物育种

小麦矮秆基因  $Rht-8$  对株高和其它农艺性状的遗传效应(英文)

- ..... *Baloch Ghulam Asghar*, 李翠,胡银岗 (252)  
两个转  $W23$  基因小麦株系的抗旱性鉴定 ..... 宋兵兵,闵东红,徐兆师,等 (258)

## 旱作农机具

- 4U-1400型马铃薯联合收获机的设计 ..... 史明明,魏宏安,胡忠强,等 (263)  
马铃薯仿生挖掘铲片的设计与仿真 ..... 石林榕,孙伟,王蒂,等 (268)

[期刊基本参数]CN61-1088/S \* 1983 \* b \* A4 \* 272 \* zh \* P \* ¥20.00 \* 1500 \* 45 \* 2014-01

# AGRICULTURAL RESEARCH IN THE ARID AREAS

Vol.32 No.1(Total No.142)

January 10,2014

## CONTENTS

### Tillage and Cultivation

- Effects of mulching timing, pattern and color of plastic film on soil moisture and water use efficiency of potato ..... MAI Zi-zhen , et al (1)  
Comprehensive effect of the main practices of conservation tillage for double cropping system in Guanzhong basin of Shaanxi Province ..... ZHU Lin , et al (11)  
Effect of transplant with supplementary water on seedling growth, yield and quality of sugar beet ..... LI Ming , et al (18)  
Deep-sowing tolerant characteristics in maize inbred lines ..... PENG Yun-ling , et al (25)  
Effects of continuous cropping on morphology characteristics and absorptive capacity of potato root ..... ZHANG Wen-ming , et al (34)  
Effects of plastic film and ridge-furrow cropping patterns on soil nutrients movement and yield of potato in semiarid areas ..... QIN Shu-hao , et al (38)  
Research on crop production value of sweet maize and vegetable intercropping patterns ..... AN Tong-xin , et al (42)  
Analysis of the causes of wheat harvest index reduction under straw mulching on dryland ..... ZHANG Shu-lan , et al (47)

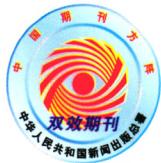
### Water-saving Irrigation and Soil moisture

- Response of crop water stress index to drip system uniformity and irrigation amount in arid regions ..... GUAN Hong-jie , et al (52)  
The soil infiltration characteristics of typical grass land in Babao River Basin of Qilian mountain ..... LI Guang-wen , et al (60)  
The moving rule of salt and water in cultivated land and saline wasteland based on HYDRUS – 2D model ..... LI Liang , et al (66)  
The water consumption rule of jujube trees under different emitter flow rate and irrigation quota ..... Hong Ming , et al (72)  
The mechanism of water-saving and yield increasing for beer barley under the condition of water storage irrigation in spring ..... DING Lin , et al (78)  
Research on the up limitation of irrigation for cucumber during fruit-set period ..... HE Zhong-qun , et al (84)  
Effect of deficit irrigation and nitrogen fertilizer on growth and water consumption of coffee arabica seedling ..... ZHONG Yuan , et al (89)  
Impacts of different soil water storage to water consumption rule of watermelon in land of gravel-mulching ..... TAN Jun-li , et al (94)  
Research progress of soil-water dynamics model applied in SPAC system ..... WU Shan , et al (100)

### Soil and Plant Nutrition

- Effects of quantity of biochar on nitrogen leaching in simulated soil columns and soil moisture parameters in field ..... CHEN Xin-xiang , et al (110)  
Temperature in freezing unsaturated loess affected by dry density and water content ..... GAO Yuan , et al (115)  
Effects of different application rates of *Orychophragmus violaceus* on soil fertility ..... LIU Jia , et al (123)  
Effects of nitrogen fertilizer rate on SPAD of cotton leaves and diagnosis of nitrogen nutrition ..... LUO Xin-ning , et al (128)  
Dynamic changes of soil enzyme activities of different vegetation types in Shulehe River Basin, China ..... NAN Li-li , et al (134)

Coupling effect of water and fertilizer on dry matter distribution and yield of dryland broomcorn millet .....	WANG Jun-jie , et al (140)
<b>Plant Adverse-resistance Physiology</b>	
Effect of rainfall harvest and water-saving irrigation technology to the photosynthetic characteristics and yield of summer maize .....	ZHANG Yan , et al (146)
Positive effect of calcium on oxidative damage in maize seedling under chilling stress .....	WANG Fang , et al (155)
The effect of $\text{Ca}^{2+}$ on <i>Radix isatidis</i> seed germination and seedling physiological characteristics under $\text{Cd}^{2+}$ stress .....	MENG Hong-mei , et al (161)
Effects of $\text{SOD}_M$ , DTA - 6, and Cc on carbon metabolism of potato leaves .....	XIANG Hong-tao , et al (166)
Effects of seed ultra-drying storage on growth and physiological characteristics of <i>Medicago sativa</i> seedlings .....	HUO Ping-hui , et al (171)
The physiological characteristic impacts of drip irrigation under film mulch to wine grape in Gobi Desert Region .....	LI Zhao-nan , et al (177)
Effect of irrigation amount on chlorophyll fluorescence and photo-protection characteristics of flag leaf of winter wheat in Huang - Huai - Hai region .....	XU Xin-zhi , et al (183)
Response of mongolian almond seed germination and seedling growth to osmotic stress .....	WANG Jin , et al (191)
<b>Ecology and Resource Utilization in Arid Areas</b>	
Comprehensive evaluation on quality of hydrological ecosystems in large-scale irrigation district in semi-arid region .....	QIAO Chang-lu (196)
Application of GA - BP combination forecasting method into the annual runoff prediction of Beiluo River .....	WANG Guang-yu , et al (203)
Effect of different land use types on soil properties of steep slope in low hilly areas of western Henan .....	LIU Pei-song , et al (208)
Variations in metal elements contents of greenhouse soils with different vegetable growing years .....	ZHAN Run-sheng , et al (213)
Effect of mushroom bran and vinegar residue on secondary salinization soil .....	DAI Li-lan , et al (218)
Analysis of change characteristic and influence factors on ground temperature in Hexi corridor eastern .....	YANG Xiao-ling , et al (223)
The temperature variation and minimum temperature forecast inside solar greenhouse in mountainous region of south Ningxia .....	ZHANG Lei , et al (230)
<b>Drought Monitoring and Forecast</b>	
Evaluation of drought monitoring effects in the main growing stages of winter wheat by using the vegetation temperature condition index .....	LI Yan , et al (236)
The drought climatic characteristics in Longnan mountainous areas and its impact on agricultural production and zonation for disaster risk .....	XIAO Zhi-qiang , et al (240)
The drought and flood circulation characteristics and forecast method in summer of Shaanxi Province .....	WANG Na , et al (246)
<b>Crop Breeding in Arid Areas</b>	
The effects of dwarfing gene <i>Rht-8</i> on plant height and other agronomic traits in common wheat .....	Baloch Ghulam Asghar , et al (252)
Identification of drought resistance of two transgenic wheat lines with <i>W23</i> gene .....	SONG Bing-bing , et al (258)
<b>Dryland Farm Machinery</b>	
Design on the 4U - 1400 potato combine harvester .....	SHI Ming-ming , et al (263)
Design and simulation research on the potato bionic digging shovel .....	SHI Lin-rong , et al (268)



主 编 吴普特  
副 主 编 贾志宽 杨改河 康振生  
李占斌 马 林(常务)  
责 任 编 辑 曹 莉  
英 文 编 辑 汪志农 刘正辉

- 《中文核心期刊要目总览》农业科学核心期刊
- 国家科技部“中国科技核心期刊”
- “中国期刊方阵”双效期刊
- 全国首届优秀科技期刊
- 科技部“中国精品科技期刊”
- 教育部“中国高校优秀科技期刊”
- 《中国科学引文数据库》源期刊并进入“影响因子、被引频次最高的中国科技期刊前300名排行榜”
- 《中国学术期刊综合评价数据库》源期刊
- 《中国学术期刊(光盘版)》、《中国期刊网》全文收录期刊
- 俄罗斯《文摘杂志》(AJ)收录期刊

## 干旱地区农业研究

### AGRICULTURAL RESEARCH IN THE ARID AREAS

双月刊 1983 年创刊  
第 32 卷 第 1 期(总第 142 期)  
2014年 1 月 10 日出版

Bimonthly Started in 1983  
Vol.32 No.1 (Total 142)  
January 10, 2014

主管单位	中华人民共和国教育部	<b>Administred by</b> Ministry of Education of the People's Republic of China
主办单位	西北农林科技大学	<b>Sponsored by</b> Northwest A & F University
编 出 版	《干旱地区农业研究》编辑部 地址:陕西杨凌西北农林科技大学 南校区 1-14 号信箱 邮政编码:712100 电话(传真):029-87082121 E-mail:ghbjb@nwsuaf.edu.cn	<b>Edited by</b> Editorial Department of Agricultural Research in the Arid Areas (Yangling, Shaanxi, China. Postcode 712100, Tel. & Fax: 029-87082121) <b>E-mail:</b> ghbjb@nwsuaf.edu.cn
印刷装订	陕西杨凌森奥印务有限公司	<b>Printed by</b> Shaanxi Yangling Senao Printing Co.,Ltd.
国内订阅	全国各地邮政局 邮发代号: 52-97	<b>Distributed by</b> China International Publishing Group (Beijing, China)
国外发行	中国国际图书贸易总公司	
网 址	http://www.ghdqnyyj.com	<b>Website</b> http://www.ghdqnyyj.com

ISSN 1000-7601  
CN 61-1088/S

公开发行

广告许可证:杨工商广字  
第 6104031000013 号

国内定价:20.00 元