

目 次

旱区生态与资源利用

低洼重度盐碱地滴灌水盐调控的环境效应	万书勤,孙甲霞,董世德,等(1)
基于地形校正后 Landsat 8 的土壤重金属反演研究	王海潇,王勇辉(11)
青藏高原不同生境土壤细菌群落结构特征及其与环境的关系	程 亮,王 信,郭青云(18)
玉米芯基和污泥基生物质炭对盐碱土壤理化性质及重金属有效性的影响	郝 敏,李艳伟,韩剑宏,等(27)
脱硫石膏配施不同量有机物料对盐碱土壤改良效果及作物产量的影响	王 丹,黄 超,李小东,刘 娟,等(34)
基于生态足迹模型修正的忻州市生态承载力空间差异变化	赵鹏宇,郭劲松,刘秀丽,等(41)
基于河道生态基流保障的灌区农业补偿机制研究——以渭河干流宝鸡段为例	张 倩,李怀恩,高志玥,等(51)
干旱地区生态移民土地利用变化生态风险——以宁夏红寺堡区为例	王 鹏,王亚娟,刘小鹏,等(58)
基于无人机高光谱影像玉米叶绿素含量估算	常潇月,常庆瑞,王晓凡,等(66)
基于随机森林回归的油菜叶片 SPAD 值遥感估算	由明明,常庆瑞,田明璐,等(74)

耕作与栽培

机采种植模式对不同株型棉花脱叶及纤维品质的影响	李健伟,吴鹏昊,肖绍伟,等(82)
新疆枣棉间作下棉花光合特性及产量变化	杨 涛,段志平,石岩松,等(89)
陇东旱塬地表覆盖方式对苹果生育后期叶片质量及根际土壤微环境的影响	孙文泰,董 铁,刘兴禄,等(95)
旱地休闲期间翻耕及覆盖对小麦氮素吸收、运转的影响	李 光,白文斌,高志强,等(102)

土壤与植物营养

不同氮素水平下有机物料添加对陇中黄土高原旱作农田 N ₂ O 排放特征的影响	王泳斌,武 均,吕锦慧,等(108)
基于不同人为干扰的土壤全量氮磷钾空间变异性研究	刘靖朝,熊黑钢,何旦旦,等(116)
乌兰布和东北部典型土地利用的土壤养分特征	黄雅茹,马迎宾,郝玉光,等(123)
施氮和覆膜对旱作春玉米农田土壤微生物量和土壤酶活性的影响	朱利霞,岳善超,沈玉芳,等(130)
喷施组合型生长调节剂对不同品种小麦冬前分蘖和生长及抗寒性的影响	彭 静,杨 雪,罗梦娜,等(137)

土壤水分与节水灌溉

沼液穴灌入渗特征及 Philip 入渗模型拟合 郑 健,张彦宁,王 燕,等(144)

不同灌溉模式下夏玉米产量形成特点 吕丽华,董志强,梁双波,等(151)

非充分滴灌分配对等行距机采棉生长特性、产量及水分利用率的影响
..... 阿不都卡地尔·库尔班,杨 培,李健伟,等(160)

适用不同粒径含盐砂壤土水分扩散率的通用模式
..... 古莱姆拜尔·艾尔肯,虎胆·吐马尔白,马合木江·艾合买提(167)

农田混凝土衬砌渠道质量模糊综合评价 朱伟峰,何武全(172)

植物抗逆生理

干旱胁迫对 3 种苹果砧木叶片光合、叶绿体超微结构和抗氧化系统的影响
..... 郭爱霞,石晓昀,王延秀,等(178)

干旱复水对春玉米幼苗生长和生理特性的影响及其根源 ABA 调控效应
..... 柳燕兰,郭贤仕,马明生,等(187)

干旱区不同谷子品种叶片光合特性对光强的响应 王 乐,相宗杰,孙 倩,等(194)

水分胁迫下不同耐旱性糜子叶片保护酶活性及膜脂过氧化特性 冯晓敏,张永清(200)

根施水杨酸对铅胁迫下小麦根系生长发育的影响 巴青松,宋瑜龙,张兰兰,等(208)

两种水分条件下真菌接种及氮肥施加对小麦生长、生理及氮磷吸收的影响
..... 张蓓蓓,张 辉,景 琦,等(214)

干旱和复水对两种葡萄砧木叶片光合和叶绿素荧光特性的影响 李敏敏,袁军伟,韩 斌,等(221)

干旱胁迫对马铃薯移栽组培苗内源激素含量的影响 苏亚拉其其格,樊明寿,贾沙沙,等(227)

作物抗旱育种

棉花抗旱相关指标综合评价及灰色关联分析 孙丰磊,曲延英,陈全家,等(233)

不同青贮玉米大喇叭口期和成熟期耐盐碱性综合评价 张会丽,朱 林,许 兴(240)

干旱监测预报

近 55 年来河西地区干旱时空演变特征及其与 ENSO 事件的关系 裴文涛,陈栋栋,薛文辉,等(250)

4 种干旱指标在华北地区气象干旱监测中的适用性分析 容锦盟,周 丹,罗 静,等(259)

旱作农业机械

间作模式下小麦联合收获机清选装置 CFD-DEM 气固耦合仿真与试验验证
..... 张克平,樊宏鹏,孙步功,等(268)

气吸式覆膜精量油菜播种机排种性能试验与优化设计 张 琴,王保爱,孙步功,等(275)

CONTENTS

Ecology and Resource Utilization in Arid Areas

Environmental effects of soil water and salinity regulation under drip irrigation in low-lying severe saline-sodic soil	WAN Shu-qin, et al(1)
Inversion of Landsat 8 for soil heavy metals after terrain correction	WANG Hai-xiao, et al(11)
Relationship of soil bacterial community composition from different ecosystems on Qinghai-Tibet Plateau with environment factors	CHENG Liang, et al(18)
Effects of biochar derived from corn cob and sludge on physical and chemical properties and heavy metal availability of saline-sodic soil	HAO Min, et al(27)
Effects of different amount of organic materials combined with desulfurized gypsum on soil improvement and crop yield in saline-sodic soil	WANG Dan, et al(34)
Spatial differences of ecological carrying capacity in Xinzhou City based on the ecological footprint method	ZHAO Peng-yu, et al(41)
Study on agricultural compensation mechanism based on river flow protection for basic ecological demand in irrigation district	ZHANG Qian, et al(51)
Ecological risk of ecological immigrants on land use change in arid areas	WANG Peng, et al(58)
Estimation of maize leaf chlorophyll contents based on UAV hyperspectral drone image	CHANG Xiao-yue, et al(66)
Estimation of rapeseed leaf SPAD value based on random forest regression	YOU Ming-ming, et al(74)

Tillage and Cultivation

Effects of cotton planting modes with machine picking on defoliation and fiber quality of different plant types	Li Jian-wei, et al(82)
Analysis of photosynthetic characteristics and yield of cotton intercropping with Jujube in Xinjiang	YANG Tao, et al(89)
Effects of ground mulching on leaf quality in late apple growth stage and rhizosphere environment in the dryland of eastern Gansu Province	SUN Wen-tai, et al(95)
Effect of deep tillage and mulching on wheat nitrogen uptake and translocation during fallow period in dryland	LI Guang, et al(102)

Soil and Plant Nutrition

Effect of organic materials on N ₂ O emission under different N-fertilizer levels in dryland of the Loess Plateau of central Gansu Province	WANG Yong-bin, et al(108)
Spatial variability of total nitrogen, phosphorus, and potassium in soil under different human disturbances	LIU Jing-chao, et al(116)
Analysis of soil nutrient characteristics under typical land uses in north-eastern Ulan Buh Desert	HUANG Ya-ru, et al(123)
Effects of nitrogen fertilization and film mulching on soil microbial biomass and enzyme activity of spring maize in semi-arid cropland	ZHU Li-xia, et al(130)
Effects of spraying a blended plant growth regulator on the tillering, growth, and the cold- resistance of different wheat varieties	PENG Jing, et al(137)

Soil Moisture and Water-saving Irrigation

Infiltration characteristics and Philip model fitting analysis of biogas slurry hole-irrigation ZHENG Jian , et al(144)

Characteristics of yield formation of summer maize under different irrigation modes LU Li-hua , et al(151)

Effects of insufficient drip irrigation distribution on growth, yield, and water use efficiency of cotton being picked with equal spacing machine Abudukadier Kuerban , et al(160)

Universal model for water diffusivity in saline sandy loam soil with different particle sizes Gulaimubaier • Aierken , et al(167)

Fuzzy comprehensive evaluation of concrete lining quality in field irrigation channels ZHU Wei-feng , et al(172)

Plant Adverse-resistance Physiology

Effect of drought stress on the photosynthesis, chloroplast ultrastructure and antioxidant system in leaves of three apple rootstocks GUO Ai-xia , et al(178)

Effects of drought and rewatering on growth and physiological characteristics of maize seedlings and regulation of root-sourced ABA LIU Yan-lan , et al(187)

Response of photosynthetic characteristic of various millet variety leaves to light intensity in arid region WANG Le , et al(194)

Characteristics of protective enzyme activities and lipid peroxidation in broomcorn millet leaves under soil water stress FENG Xiao-min , et al(200)

Effects of root-applying salicylic acid on the growth and development of wheat roots under lead stress BA Qing-song , et al(208)

Effect of mycorrhizal fungi inoculation and nitrogen fertilization on physiological characteristics, growth, and nitrogen and phosphorus uptake of wheat under two distinct water regimes ZHANG Bei-bei , et al(214)

Effect of drought and rewatering on the photosynthesis and chlorophyll fluorescence of two grape rootstock leaves LI Min-min , et al(221)

Effects of drought stress on endogenous hormone content in transplanted tissue culture potato seedlings Suyala Qiqige , et al(227)

Crop Drought Resistance Breeding

Comprehensive evaluation of cotton drought tolerance indexes and gray relational analysis SUN Feng-lei , et al(233)

Comprehensive evaluation of saline-alkali tolerance of silage maize at stages of fourteenth leaf and maturity ZHANG Hui-li , et al(240)

Drought Monitoring and Forecast

The temporal and spatial variation characteristics of drought and its relationship with ENSO events in Hexi region in last 55 years PEI Wen-tao , et al(250)

Applicability analysis of four drought indices for meteorological drought monitoring in Northern China RONG Jin-meng , et al(259)

Dryland Farm Machinery

The CFD–DEM gas-solid coupling simulation and experimental verification of cleaning device of wheat combine harvester for intercropping system ZHANG Ke-ping , et al(268)

The performance test and optimization design of the air absorption film mulching precision rapeseed seeder ZHANG Qin , et al(275)