

## 目 次

### 土壤与植物营养

|                                        |                   |
|----------------------------------------|-------------------|
| 地表覆盖对旱作玉米农田土壤氮素矿化的影响 .....             | 石冰洁,李世清(1)        |
| 施用纳米氧化锌对小麦籽粒锌含量和锌利用率的影响 .....          | 张 腾,崔利利,刘艳妮,等(7)  |
| 不同管理模式对干旱区草原土壤团聚体稳定性及其理化性质的影响 .....    | 蒋腊梅,白桂芬,吕光辉,等(15) |
| 新疆若羌县土壤微量营养元素的空间分布特征及影响因素 .....        | 曾妍妍,周金龙,陈云飞,等(22) |
| 陇东黄土高原地区杏园土壤综合肥力对人工生草模式的响应及其环境解释 ..... | 王根旺,宋 曦(29)       |
| 六盘山区旱作春玉米养分投入与肥料生产效率 .....             | 夏海雪,陈雪娇,张旭东,等(40) |
| 施氮量对滴灌高产春大豆根系生长及产量的影响 .....            | 高 阳,楚光红,傅积海,等(46) |
| 滴施不同水溶肥对玉米产量形成的影响 .....                | 梁 飞,王国栋,王克全,等(53) |

### 耕作与栽培

|                                                    |                    |
|----------------------------------------------------|--------------------|
| 秸秆量对垄沟二元覆盖夏玉米农田耗水及产量的影响 .....                      | 申胜龙,李援农,银敏华,等(60)  |
| 西南紫色土丘陵区不同耕作方式对土壤水热条件、有机碳含量及蚕豆产量<br>的影响 .....      | 陈 娇,黄召存,熊 瑛,等(67)  |
| 滨海盐碱地预覆膜起垄的生态效应及对棉花苗期的影响 .....                     | 张 谦,冯国艺,雷晓鹏,等(74)  |
| 马铃薯根系分泌物组分对不同种植模式的响应 .....                         | 谭雪莲,郭天文,马明生,等(80)  |
| 不同耕作方式下旱作玉米田土壤 CO <sub>2</sub> 排放量及其与土壤水热的关系 ..... | 张俊丽,张锦丽,赵晓进,等(88)  |
| 连作对马铃薯生长和土壤健康的影响及机制研究 .....                        | 焦润安,徐雪风,杨宏伟,等(94)  |
| 西北旱塬区不同株型玉米增密对产量的影响 .....                          | 赵 刚,樊廷录,党 翼,等(101) |

### 土壤水分与节水灌溉

|                                     |                    |
|-------------------------------------|--------------------|
| 调亏灌溉对荒漠绿洲膜下滴灌马铃薯生长、产量及水分利用的影响 ..... | 薛道信,张恒嘉,巴玉春,等(109) |
| 宁南旱区沟垄集雨结合补灌对土壤水分利用及冬小麦产量的影响 .....  | 杨 震,董昭芸,卫 婷,等(117) |
| 不同水氮处理对滴灌冬小麦生长、产量和耗水特性的影响 .....     | 陈凯丽,赵经华,付秋萍,等(125) |
| 辽西北风沙地不同植物群落土壤入渗特性 .....            | 吕 刚,翟景轩,李叶鑫,等(133) |
| 基于 HYDRUS-1D 的不同质地土壤入渗过程数值模拟 .....  | 刘彬彬,刘尧兵,张科锋(140)   |
| 不同磁化强度水对谷子产量的影响 .....               | 王洪波,乔 木,闫曼曼,等(146) |

|                                                     |                       |
|-----------------------------------------------------|-----------------------|
| 浅埋式滴灌毛管埋深对苜蓿生长的影响 .....                             | 潘小保, 缴锡云, 郭维华, 等(152) |
| 黄土塬区降水变化条件下冬小麦田土壤水分消耗与补给 .....                      | 崔亚强, 朱元骏(158)         |
| 水肥供应对南疆沙区滴灌红枣生理、生长及产量的影响 .....                      | 扁青永, 王振华, 胡家帅, 等(165) |
| <b>植物抗逆生理</b>                                       |                       |
| 燕麦幼苗对干旱-低温交叉适应的生理响应及其综合评价.....                      | 刘建新, 刘秀丽, 王金成(172)    |
| 多效唑对水分胁迫下苹果砧木八棱海棠光合及抗氧化酶活性等生理特性的影响 .....            | 朱燕芳, 王延秀, 胡 亚, 等(178) |
| NaN <sub>3</sub> 和紫外线复合诱变对苜蓿愈伤组织在干旱和盐胁迫下生长的影响 ..... | 李 波, 林 浩, 邬婷婷, 等(187) |
| 钙离子浓度对 NaCl 胁迫下嫁接黄瓜幼苗光合与荧光特性的影响 .....               | 刘 馨, 游诗尧, 周海霞, 等(193) |
| 低镁胁迫对马铃薯试管苗碳水化合物积累和分配的影响 .....                      | 袁剑龙, 杨丽丽, 王玉萍, 等(200) |
| 光强对黑麦草萌发生长、叶片叶绿素含量及光系统 II 的影响 .....                 | 张 辉, 王 荷, 张蓓蓓, 等(207) |
| 盐碱胁迫下‘红地球’葡萄对生化改良的光合与生理响应 .....                     | 王延秀, 李飞鸿, 武云龙, 等(214) |
| 不同基因型绿豆苗期耐盐碱性分析及其鉴定指标的筛选 .....                      | 于 崧, 梁海芸, 郭潇潇, 等(223) |
| <b>旱区生态与资源利用</b>                                    |                       |
| 基于两阶段随机规划方法的绿洲水资源优化配置 .....                         | 申梦阳, 赵建平, 桂东伟, 等(233) |
| 藏-羌聚落交错区耕地坡谱与信息熵变化特征 .....                          | 张淑杰, 郭亚琳, 樊 敏, 等(239) |
| 沙质草地植物群落及土壤质地对补播和翻耕措施的响应 .....                      | 吴旭东, 蒋 齐, 俞鸿千, 等(246) |
| 化学除草剂对保护性耕作燕麦田杂草的防除效果 .....                         | 路战远, 张向前, 王玉芬, 等(252) |
| 青海省不同生态区蚕豆根瘤菌 16S rDNA 分析 .....                     | 张小娟(259)              |
| <b>作物抗旱育种</b>                                       |                       |
| 干旱胁迫条件下小麦各器官可溶性碳水化合物积累转运相关性状遗传分析 .....              | 张家乐, 栗孟飞, 杨德龙, 等(264) |
| 转 <i>CarNAC1</i> 基因可提高棉花的抗旱性 .....                  | 王淑君, 曲延英, 倪志勇, 等(272) |
| <b>干旱监测预报</b>                                       |                       |
| 甘肃省季节性干旱综合指数的特征 .....                               | 郭小芹, 李 广, 罗永忠(282)    |
| 基于能量平衡算法的精河流域绿洲蒸散发时空变化模拟 .....                      | 于 辉, 代鹏超, 张金燕, 等(289) |

## CONTENTS

### Soil and Plant Nutrition

|                                                                                                                                                                              |                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Effect of surface mulching on soil nitrogen mineralization in dry farmland .....                                                                                             | SHI Bing-jie, et al(1)   |
| Effects of ZnO NPs application on grain zinc content and zinc utilization of wheat .....                                                                                     | ZHANG Teng, et al(7)     |
| Effects of different management modes on soil aggregate stability and physicochemical properties of grassland in arid area .....                                             | JIANG La-mei, et al(15)  |
| Spatial distribution and its influencing factors of micronutrients in soils of Ruoqiang County, Xinjiang .....                                                               | ZENG Yan-yan, et al(22)  |
| Response of integrated fertility of apricot orchard soil to artificial grass pattern and its environmental interpretation in the eastern Gansu Province of loess plateau ... | WANG Gen-wang, et al(29) |
| Nutrient input and fertilizer production efficiency analysis for dry-cultivation spring maize in dryland of Liupanshan area .....                                            | XIA Hai-xue, et al(40)   |
| Effect of nitrogen fertilizer amount on root growth and yield of spring soybean in drip irrigation .....                                                                     | GAO Yang, et al(46)      |
| Effect of the different water soluble fertilizer dripping application on yield formation of maize .....                                                                      | LIANG Fei, et al(53)     |

### Tillage and Cultivation

|                                                                                                                                                                     |                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Effects of straw mulching rates on water consumption and yield of summer maize under dual-mulching of ridge and furrow .....                                        | SHEN Sheng-long, et al(60) |
| Effects of different tillage modes on soil hydrothermal condition, organic carbon content and broad bean yield in purple soil hilly region of Southwest China ..... | CHEN Jiao, et al(67)       |
| Ecological effects of early plastic mulching and ridging and its effect on seedling stage of cotton in coastal saline soil .....                                    | ZHANG Qian, et al(74)      |
| Response of potato root exudate components to different planting patterns .....                                                                                     | TAN Xue-lian, et al(80)    |
| Effects of different tillages on soil CO <sub>2</sub> flux, and its relation to soil moisture and soil temperature in dry-land maize field .....                    | ZHANG Jun-li, et al(88)    |
| Study on the effect and its mechanism of continuous cropping on potato growth and soil health .....                                                                 | JIAO Run-an, et al(94)     |
| Effects of planting density of different plant type maize on yield in northwest dry highland of loess plateau .....                                                 | ZHAO Gang, et al(101)      |

### Soil Moisture and Water-saving Irrigation

|                                                                                                                                                                      |                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Effects of regulated deficit irrigation on growth, yield and water use of potato under mulched drip irrigation in desert oasis region .....                          | XUE Dao-xin, et al(109) |
| Effects of ridge and furrow rainwater harvesting cultivation with supplemental irrigation on water use and winter wheat yield in arid area of southern Ningxia ..... | YANG Zhen, et al(117)   |
| The effects of different water and nitrogen treatments on the growth, yield and water consumption characteristics of winter wheat .....                              | CHEN Kai-li, et al(125) |
| Soil infiltration characteristics of different plant community in sandy land of northwestern Liaoning .....                                                          | LU Gang, et al(133)     |
| Numerical simulations of water infiltration for various soil textures using HYDRUS-1D .....                                                                          | LIU Bin-bin, et al(140) |

Effect of different magnetization intensities water on foxtail millet yield ..... WANG Hong-bo, et al(146)

Experimental study on the effect of buried depth of shallow buried drip irrigation on growth of alfalfa ..... PAN Xiao-bao, et al(152)

Soil moisture consumption and replenishment in winter wheat land under the conditions of precipitation change in loess plateau ..... CUI Ya-qiang, et al(158)

Effects of water and fertilizer supply on physiology, growth and yield of drip-irrigation jujube in the southern Xinjiang sandy area ..... BIAN Qing-yong, et al(165)

**Plant Adverse-resistance physiology**

Comprehensive evaluation and physiological response of *Avena nuda* seedlings to drought and low temperature cross adaptation ..... LIU Jian-xin, LIU Xiu-li, et al(172)

Effects of paclobutrazol on photosynthetic and antioxidant enzyme activities and other physiological characteristics of *malus robusta* rehd. under water stress ..... ZHU Yan-fang, et al(178)

Effects of NaN<sub>3</sub> and ultraviolet combined mutation on the growth of alfalfa callus under salt and drought stress ..... LI Bo, et al(187)

Effects of calcium ion concentration on photosynthetic and fluorescence characteristics of grafted cucumber seedlings under NaCl stress ..... LIU Xin, et al(193)

Effect of the accumulation and distribution of carbohydrates of potato seedling under low magnesium stress ..... YUAN Jian-long, et al(200)

Effects of light intensity on germination, growth, chlorophyll content and photosystem II of leaves in Ryegrass(*Lolium Perenne* L) ..... Zhang Hui, et al(207)

Photosynthetic and physiological response to biochemical improvement of ‘Red Globe’ grape under saline-alkali stress ..... WANG Yan-xiu, et al(214)

Analysis of saline-alkaline tolerance and determination of saline-alkaline tolerance evaluation indicators in seedling stage of different mung bean genotypes ..... YU Song, et al(223)

**Ecology and Resource Utilization in Arid Areas**

Study on the optimal allocation of oasis water resources based on the two-stages stochastic programming method ..... SHEN Meng-yang, et al(233)

The variation characteristics on slope spectrum and information entropy of cultivated land in the crossing zone of Tibetan-Qiang settlement ..... ZHANG Shu-jie, et al(239)

Response of plant community and soil texture of sandy grassland to the reseeding and plowing ..... WU Xu-dong, et al(246)

Effect on weeds control in the conservation-tillage oat field of chemical herbicide ... LU Zhan-Yuan, et al(252)

16S rDNA of rhizobium isolated from faba bean of different ecotopes in Qinghai Province ..... ZHANG Xiao-juan, et al(259)

**Crop Drought Resistance Breeding**

Genetic analysis of WSC’s accumulation and transport characteristics in different vegetative organs in wheat natural population under drought stress ..... ZHANG Jia-le, et al(264)

Transgenic *CarNAC1* gene improves the drought resistance of cotton ..... WANG Shu-jun, et al(272)

**Drought Monitoring and Forecast**

The characteristics of seasonal drought’s comprehensive index in Gansu Province ... GUO Xiao-qin, et al(282)

Temporal and spatial variation simulation of evapotranspiration based on energy balance algorithm in Jinghe Watershed’s oasis ..... YU Hui, et al(289)