



ISSN 0529-1542

CN 11-1982/S

植物保护 Plant Protection

# 植物保护

## Plant Protection

全国中文核心期刊  
中国科技核心期刊  
RCCSE中国核心学术期刊  
CSCD来源期刊



(卷终)

ISSN 0529-1542



9 770529 154225



主办

中国植物保护学会

China Society of Plant Protection

中国农业科学院植物保护研究所

Institute of Plant Protection, CAAS

6

第48卷

2022年12月

## 目 次

## 外来入侵物种管理专栏

专栏导读 ..... (1)

## 预警与风险评估

我国主要海港外来船舶引起的生物入侵风险分析 ..... 黄珊, 王书平, 钱程, 等(2)

基于种子发芽率评估长芒苋在我国不同纬度地区的入侵风险 ..... 曹晶晶, 王瑞, 刘万学, 等(8)

基于优化的MaxEnt模型预测海灰翅夜蛾潜在地理分布区 ..... 赵浩翔, 洗晓青, 郭建洋, 等(16)

基于灰色关联度分析气候因素对江西省松材线虫病的影响 ..... 方思茗, 吴宗仁, 李萍, 等(23)

基于国际贸易和环境气候的生物入侵风险评估综合模型研究初探 ..... 段梦格, 洗晓青, 王书平, 等(31)

警惕番茄褐色皱纹果病毒在我国的传播和危害 ..... 石钰杰, 马子玥, 杨秀玲, 等(42)

## 检测与监测

潜在和新发外来入侵物种三维可视化预警监测系统构建与应用 ..... 洗晓青, 陈宏, 蔡圣准, 等(49)

中国4省猕猴桃细菌性溃疡病菌的生物型检测和遗传多样性分析 ..... 代玉立, 兰成忠, 甘林, 等(58)

向日葵黑茎病菌RPA/CRISPR-Cas12a快速检测方法的建立 ..... 邝瑞瑞, 雷荣, 江丽, 等(69)

海南三亚崖州湾科技城发现番石榴果实蝇 ..... 李维松, 颜晓蕊, 杨文钊, 等(77)

基于重组酶聚合酶扩增技术的玉米矮花叶病毒快速检测方法的建立 ..... 赵振兴, 范奇璇, 冯黎霞, 等(83)

## 综合防控

梨品种“玉露香”抗火疫病蛋白质组学分析 ..... 吴瑞瑞, 叶云峰, 陈松余, 等(90)

6种杀菌剂对梨火疫病菌的室内毒力测定和混配试验 ..... 刘朋飞, 王岩, 王泓力, 等(98)

吩嗪类化合物对梨火疫病菌的抗菌活性研究 ..... 孙伟波, 赵杨扬, 明亮, 等(105)

12种杀菌剂对杜梨苗梨火疫病的预防与治疗效果测定 ..... 王泓力, 王岩, 吴曰福, 等(111)

梨火疫病菌对噻唑锌及其他几种杀细菌剂的敏感性 ..... 白雪莹, 热孜亚·麦麦提, 蔡超, 等(118)

溴氰菊酯对南方小花蝽捕食番茄潜叶蛾能力的影响 ..... 蒋正雄, 吴道慧, 羊绍武, 等(127)

实蝇高引诱性酵母菌的分离和筛选 ..... 张栩浩, 罗流河, 王珊珊, 等(133)

## 生物学特性

设施番茄4种栽培方式下番茄潜叶蛾对化蛹场所的选择性研究 ..... 张桂芬, 张毅波, 刘万学, 等(141)

番茄潜叶蛾成虫卵巢发育与卵子发生研究 ..... 梁永轩, 郭建洋, 王浩, 等(153)

重大侵害虫番茄潜叶蛾在4个烟草品种上的适合度评估 ..... 罗明磊, 田小草, 刘万学, 等(162)

施氮形态与分株损伤对入侵植物香菇草生长及克隆整合的影响 ..... 孙凯, 杨丽娟, 蔡竟芳, 等(169)

甘薯不同品种对两种入侵杂草的竞争作用和化感作用 ..... 钱丽, 徐高峰, 崔宇琛, 等(179)

## 专论与综述

多指标综合评价方法应用的系统回顾与展望 ..... 王聪, 丁子玮, 姜培, 等(187)

麦瘟病研究新进展 ..... 彭烨, 康厚祥(193)

新疆库尔勒香梨火疫病的发生特点及防控建议

..... 黄伟, 盛强, 罗明, 等(207)

外来入侵物种的大数据获取及预测分析方法研究进展

..... 苏梦可, 高灵旺(214)

自由贸易港背景下的海南外来入侵生物防控探讨

..... 龚治, 彭正强, 马光昌, 等(221)

天然产物对红火蚁的生物活性研究进展

..... 李玉玲, 陈思琪, 张森泉, 等(232)

## 专论与综述

植物蛋白酶抑制剂的抗虫性研究进展

..... 张娜, 刘志伟, 刘德广(238)

双环磷草酮在我国稻田应用的现状、存在问题及对策建议

..... 田志慧, 袁国徽, 高原, 等(248)

## 研究报告

基于线粒体和初级共生菌基因序列的荻草谷网蚜6个地理种群的遗传多样性研究 ..... 孙靖轩, 李迁, 谭晓玲, 等(255)

夜蛾黑卵蜂转录组及化学感受相关基因的分析

..... 周婉, 徐琢, 杨文俊, 等(264)

基于YOLO V3的葡萄病害人工智能识别系统

..... 王超学, 郑昕, 马罡, 等(278)

链格孢菌株HY-063的分离鉴定及除草潜力

..... 李欢, 朱海霞(289)

不同温度下小麦感染不同密度玉米象卵后微环境中二氧化碳浓度变化

..... 刘浩星, 王殿轩, 王甜, 等(298)

斜纹夜蛾核型多角体病毒与赤眼蜂联用对斜纹夜蛾的室内防治效果

..... 贾世平, 曾维爱, 吴小森, 等(307)

寄主密度、寄生蜂密度和寄生蜂性比对麦蛾茧蜂繁殖的影响

..... 黄宁, 王秀琴, 王博, 等(313)

## 实验方法与技术

甘薯潜隐病毒莲藕分离物辅助成分-蛋白酶基因原核表达及抗血清制备

..... 王凌琪, 董婷婷, 陈雯, 等(319)

马铃薯中戊唑醇和吡唑醚菌酯的残留行为

..... 姚杰, 兰丰, 柳璇, 等(326)

## 研究简报

吉林狗尾草种群对烟嘧磺隆抗性水平和靶标抗性机理初探

..... 李雯钰, 魏守辉, 黄红娟, 等(332)

侵染西葫芦的中国南瓜曲叶病毒的检测及序列分析

..... 袁晓伟, 史慧娴, 郭仰东, 等(336)

## 调查研究

2017年—2021年江苏省小麦赤霉病菌群体对4种杀菌剂的抗药性监测

..... 徐超, 陈宏州, 吴雨琦, 等(341)

宁波沿海地区水稻田稗草发生量及对丙草胺、丁草胺的抗药性检测—以6个样点为例

..... 史骏, 张琳玲, 林乐志, 等(346)

四川省草地贪夜蛾发生为害特点

..... 万宜伍, 田卉, 吴金鑫, 等(355)

2018年我国小麦赤霉病菌对多菌灵抗性检测

..... 衣丽淑, 许景升, 徐进, 等(362)

绳状青霉P-19不同固体发酵浸提液对马铃薯镰刀菌根腐病病

原菌的抑制作用

..... 姚凡, 王喜刚, 郭成瑾, 等(368)

## 技术与应用

玉米穗腐病防治药剂的室内毒力测定及田间防效

..... 龚洛, 邓佳辉, 焦芹, 等(374)

《植物保护》2022年总目次

..... (382)

封面照片 番石榴果实蝇 *Bactrocera correcta*

..... 李维松, 陈兆阳, 赵岩摄

广 告 中保科技(封二); 瑞德丰(插一); 植物保护(插二);

中捷四方(封三); 佳多(封底)

## CONTENTS

- Risk analysis of biological invasion caused by foreign ships in major seaports in China ..... HUANG Shan, WANG Shuping, QIAN Cheng, et al(2)
- Invasion risk assessment of *Amaranthus palmeri* at different latitudinal regions in China based on seed germination rate ..... CAO Jingjing, WANG Rui, LIU Wanxue, et al(8)
- Prediction of the potential geographical distribution of *Spodoptera littoralis* based on the optimal MaxEnt model ..... ZHAO Haoxiang, XIAN Xiaoqing, GUO Jianyang, et al(16)
- Analysis of influences of climate factors on the pine wilt disease based on grey relation analysis ..... FANG Siming, WU Zongren, LI Ping, et al(23)
- Study on integrated model for invasion risk of alien species based on the data of international trade and bioclimatic variables ..... DUAN Mengge, XIAN Xiaoqing, WANG Shuping, et al(31)
- The alert for the spread and damage of tomato brown rugose fruit virus in China ... SHI Yujie, MA Ziyue, YANG Xiuling, et al(42)
- Construction and application of 3D visual system for early-warning and monitoring potentially and newly invasive alien species in China ..... XIAN Xiaoqing, CHEN Hong, CAI Shengzhen, et al(49)
- Detection of *Pseudomonas syringae* pv. *actinidiae* biovars from four provinces in China and genetic diversity analysis ..... DAI Yuli, LAN Chengzhong, GAN Lin, et al(58)
- Establishment of RPA/CRISPR-Cas12a rapid detection for *Leptosphaeria lindquistii* ..... KUANG Ruirui, LEI Rong, JIANG Li, et al(69)
- Bactrocera correcta* (Diptera; Tephritidae) was found in Yazhou bay science and technology city, Sanya, Hainan province ..... LI Weisong, YAN Xiaorui, YANG Wenzhao, et al(77)
- Establishment of a fast detection method for maize dwarf mosaic virus by recombinase polymerase amplification ..... ZHAO Zhenxing, FAN Qixuan, FENG Lixia, et al(83)
- Proteomics analysis on the resistance of pear cultivar ‘Yuluxiang’ to fire blight disease ..... WU Ruirui, YE Yunfeng, CHEN Songyu, et al(90)
- Laboratory toxicity tests and mixture experiments of six fungicides against pear fire blight ..... LIU Pengfei, WANG Yan, WANG Hongli, et al(98)
- Antagonistic activities of phenazine compounds against *Erwinia amylovora* ..... SUN Weibo, ZHAO Yangyang, MING Liang, et al(105)
- Prevention and control efficacies of 12 bactericides on fire blight of *Pyrus betulifolia* seedlings ..... WANG Hongli, WANG Yan, WU Yuefu, et al(111)
- Determination sensitivity of fire blight pathogen *Erwinia amylovora* to zinc thiazole and several other bactericides ..... BAI Xueying, REZIYA · Maimaiti, CAI Chao, et al(118)
- Effects of deltamethrin on the predatory ability of *Orius similis* against *Tuta absoluta* ..... JIANG Zhengxiong, WU Daohui, YANG Shaowu, et al(127)
- Screening of highly effective yeast lure strains of fruit flies ..... ZHANG Xuhao, LUO Liuhe, WANG Shanshan, et al(133)
- Selectivity of the tomato leafminer, *Tuta absoluta* (Meyrick), to pupation site in four cultivation patterns of greenhouse tomato ..... ZHANG Guifen, ZHANG Yibo, LIU Wanxue, et al(141)
- Ovarian development and oogenesis of *Tuta absoluta* (Lepidoptera: Gelechiidae) adults ..... LIANG Yongxuan, GUO Jianyang, WANG Hao, et al(153)
- Assessment of the fitnesses traits of a major invasive pest, *Tuta absoluta* (Meyrick), on four tobacco varieties ..... LUO Minglei, TIAN Xiaocao, LIU Wanxue, et al(162)

- Effects of nitrogen supply forms and ramets damage on the growth and clonal integration of invasive plant *Hydrocotyle vulgaris*  
..... SUN Kai, YANG Lijuan, CAI Jingfang, et al(169)
- Competitive and allelopathic effect of different sweet potato varieties to two alien invasive weeds (*Bidens pilosa* and *Galinsoga quadriradiata*)  
..... CHUAN Li, Xu Gaofeng, CUI Yuchen, et al(179)
- Systematic review and perspective of the application of multi-index comprehensive evaluation method  
..... WANG Cong, DING Ziwei, JIANG Pei, et al(187)
- Novel advances in wheat blast research ..... PENG Ye, KANG Houxiang(193)
- Occurrence status of fire blight on Korla fragrant pear in Xinjiang and the control proposals  
..... HUANG Wei, SHENG Qiang, LUO Ming, et al(207)
- Progress on big data acquisition and predictive analysis methods for invasive alien species ..... SU Mengke, GAO Lingwang(214)
- Prevention and control of alien invasive species in Hainan under the background of free trade port  
..... GONG Zhi, PENG Zhengqiang, MA Guangchang, et al(221)
- Research and application progress of natural products for the control of red imported fire ant  
..... LI Yuling, CHEN Siqi, ZHANG Senquan, et al(232)
- Advances in plant protease inhibitors against insects ..... ZHANG Na, LIU Zhiwei, LIU Deguang(238)
- Application status, problems and suggestions of benzobicyclon in rice field in China  
..... TIAN Zhihui, YUAN Guohui, GAO Yuan, et al(248)
- Genetic diversity of six geographic populations of *Sitobion miscanthi* (Takahashi) in China based on gene sequences from mitochondria and primary symbiotic bacteria ..... SUN Jingxuan, LI Qian, TAN Xiaoling, et al(255)
- Analysis of the transcriptome and chemosensory-related genes of *Telenomus remus* Nixon  
..... ZHOU Wan, XU Zhuo, YANG Wenjun, et al(264)
- Intelligent identification system of grape diseases based on YOLO V3 ..... WANG Chaoxue, QI Xin, MA Gang, et al(278)
- Isolation and identification of *Alternaria alternata* strain HY-063 and its herbicidal potential ..... LI Huan, ZHU Haixia(289)
- Changes of carbon dioxide concentration in microenvironment of wheat infested with different densities of *Sitophilus zeamais* eggs at different temperatures ..... LIU Haoxing, WANG Dianxuan, WANG Tian, et al(298)
- Indoor control effect of *Spodoptera litura* nuclear polyhedrosis virus combined with *Trichogramma* on *Spodoptera litura*  
..... JIA Shiping, ZENG Wei'ai, WU Xiaosen, et al(307)
- Effects of the host density, parasitoid density, and parasitoid sex ratio on the mass rearing of *Habrobracon hebetor* (Hymenoptera: Braconidae)  
..... HUANG Ning, WANG Xiuqin, WANG Bo, et al(313)
- Prokaryotic expression of sweet potato latent virus-lotus helper-component proteinase and antiserum preparation  
..... WANG Lingqi, DONG Tingting, CHEN Wen, et al(319)
- Residues behavior of tebuconazole and pyraclostrobin in potato ..... YAO Jie, LAN Feng, LIU Xuan, et al(326)
- Preliminary studies on the resistance level and target resistance mechanism of *Setaria viridis* populations to nicosulfuron in Jilin  
..... LI Wenyu, WEI Shouhui, HUANG Hongjuan, et al(332)
- Identification and sequence analysis of squash leaf curl China virus in zucchini  
..... YUAN Xiaowei, SHI Huixian, GUO Yangdong, et al(336)
- Resistance of *Fusarium asiaticum* to four fungicides in Jiangsu province from 2017 to 2021  
..... XU Chao, CHEN Hongzhou, WU Yuqi, et al(341)
- Detection of *Echinochloa crus-galli* (L.) Beauv. occurrence and its resistance to pretilachlor and butachlor in paddy fields in Ningbo coastal areas —— Taking 6 sites as examples ..... SHI Jun, ZHANG Linling, LIN Lezhi, et al(346)
- Occurrence and damage of the fall armyworm in Sichuan ..... WAN Xuanwu, TIAN Hui, WU Jinxin, et al(355)
- Detection of genotypes of carbendazim-resistant isolates of *Fusarium graminearum* species complex  
..... YI Lishu, XU Jingsheng, XU Jin, et al(362)
- Inhibitory effect of the extract from solid fermentation of *Penicillium funiculosum* P-19 on *Fusarium* spp. causing potato root rot  
..... YAO Fan, WANG Xigang, GUO Chengjin, et al(368)
- Determination of indoor toxicity and field control effect of fungicides against maize ear rot  
..... GONG Luo, DENG Jiahui, JIAO Qin, et al(374)