菌物学报
Junwu Xuebao
中国科技期刊卓越行动计划集群(A类)
“北大”中文核心 | 中国科技核心 | CSCD核心期刊

目次

月刊 | 2026年45卷第11期

主题专辑：植物病原菌物分子生物学及致病机制　　特约编辑：西北农林科技大学　刘慧泉　教授



禾谷镰孢

***Fusarium graminearum* Schwabe**

子囊菌门Ascomycota，粪壳菌纲Sordariomycetes，肉座菌目Hypocreales，丛赤壳科Nectriaceae，封面照片由西北农林科技大学刘慧泉教授2026年5月23日摄于江苏省淮安市洪泽区。

禾谷镰孢是引起小麦和大麦赤霉病(FHB)的重要病原真菌。其有性生殖产生的子囊壳可弹射子囊孢子，构成田间初侵染源；潮湿条件下，病穗表面还可形成粉红色分生孢子层。该菌以半活体营养方式侵染寄主，并产生脱氧雪腐镰刀菌烯醇(DON)；DON既是重要毒力因子，也严重威胁农产品质量与食品安全。此外，禾谷镰孢为同宗配合真菌，具有有性生殖频繁、有性发育周期短、同源重组效率高和基因组注释质量高等特点，因此成为研究丝状真菌遗传学与分子生物学的重要模式生物，并在发现和阐明A-to-I mRNA编辑和串联重复诱导的有性沉默(TRISS)等新机制中发挥了关键作用。

综述

260258 真菌生活史权衡：驱动与缓解机制及植物病害防控启示
杨杰，杜雁飞，冯婵婧，王秦虎，刘慧泉

260207 新疆小麦条锈病研究进展与综合防控技术
赵杰，康振生

260268 荔枝霜疫病致病机制、寄主-病原互作与病害防控研究进展
周钢强，叶忍赢，金安琪，符晓，司徒俊键，习平根，李敏慧，姜子德，孔广辉

260205 植物病原真菌RNA修饰调控致病与发育机制研究进展
蔡旋，张洁宁，陈小林

260225 杀菌剂选择性靶标发掘与研究进展
李一歌，徐宗祥，段亚冰

260264 植物病原卵菌生长发育相关蛋白的研究进展
程菲，苗建强，刘西莉

260254 镰孢属及物种层面中文名称的规范使用：植物病理学论文中的常见误用与建议
李伟，陈禹亭，张昊，陈怀谷

研究论文

260167 ‘秦脆’苹果炭疽叶枯病的病原种类与致病特性
陈文静，伍晨潇，刘发，张荣，孙广宇，朱明旗，梁晓飞

260202 MoSvf1与Mps1信号途径的遗传互作及其在稻巨座壳菌细胞壁稳态和侵染中的作用
付显惠，黄俊锜，王光辉，江聪

260201 西藏地区条形柄锈菌小麦专化型对三唑酮的抗性特征及毒性谱分析
耿丽，胡静雯，蒋心怡，隆英，康振生，詹刚明

260246 拟轮枝镰孢生物合成基因簇多样性、保守性与菌株特异性分布
王瑞，郭维

260244 通过敲除*FpKu80*构建假禾谷镰孢高效基因敲除底盘菌株
李艳玲，曾勇江，许铭

260211 转运蛋白VdFRP调控大丽轮枝菌咯菌腈抗性及致病力的分子机制
张宵宸，豆丰丰，胡小平，秦君

260263 禾谷刺盘孢Septin家族的核心蛋白CgCdc11的生物学功能
代亚锋，吕元璞，李振坤，时悉语，张潇丹，张艺美

260265 G蛋白信号调控因子SsRGS1对核盘菌生长及致病力的调控作用
钱肖肖，王鹏辉，王淑蒙，魏倩倩，张怡萍，朱军，付轩，潘月敏，羊国根

260267 鞑靼内丝白粉菌类枯草杆菌蛋白酶LtPRB1的功能
刘祎瑶，戴佳慧，于慧敏，庞通达，欧师琪，刘淑艳，刘信强

Monthly | Volume 45, Issue 11

Mycosystema
CONTENTS

Special Topical Issue: Molecular Biology and Pathogenicity Mechanisms of Fungal and Oomycete Plant Pathogens
Guest Editor: Pro. LIU Huiquan



Fusarium graminearum Schwabe

Ascomycota, Sordariomycetes, Hypocreales, Nectriaceae. Courtesy of Dr. LIU Huiquan from Northwest A&F University, taken from Hongze District, Huai'an, Jiangsu Province, 23 May 2026.

F. graminearum is an important fungal pathogen causing Fusarium head blight in wheat and barley. Perithecia produced during sexual reproduction forcibly discharge ascospores, which serve as the primary inoculum in the field; under humid conditions, infected spikes may also develop a pink conidial layer. This fungus infects hosts in a hemibiotrophic manner and produces deoxynivalenol (DON), a major virulence factor that also poses a serious threat to crop quality and food safety. In addition, *F. graminearum* is a homothallic fungus characterized by frequent sexual reproduction, a short sexual development cycle, high homologous recombination efficiency, and a well-annotated genome, making it an important model organism for studying fungal genetics and molecular biology. It has also played a key role in elucidating new mechanisms such as A-to-I mRNA editing and tandem repeat-induced sexual silencing (TRISS).

Review

260258 **Life-history trade-offs in fungi: driving and mitigation mechanisms and implications for plant disease control**
YANG Jie, DU Yanfei, FENG Chanjing, WANG Qinhu, LIU Huiquan

260207 **Advances in studies on wheat stripe rust and its integrated management strategies in Xinjiang of China**
ZHAO Jie, KANG Zhensheng

260268 **Research progress on litchi downy blight: pathogenic mechanisms, host-pathogen interactions, and disease management**
ZHOU Gangqiang, YE Renying, JIN Anqi, FU Xiao, SITU Junjian, XI Pinggen, LI Minhui, JIANG Zide, KONG Guanghui

260205 **RNA modification-mediated regulation of pathogenicity and development of plant pathogenic fungi**
CAI Xuan, ZHANG Jiening, CHEN Xiaolin

260225 **Recent advances in the discovery and research on selective targets for fungicides**
LI Yige, XU Zongxiang, DUAN Yabing

260264 **Research progress on proteins regulating growth and development in plant pathogenic oomycetes**
CHENG Fei, MIAO Jianqiang, LIU Xili

260254 **Standardized use of Chinese names for the genus *Fusarium* and its species: misapplications and recommendations in phytopathological papers**
LI Wei, CHEN Yuting, ZHANG Hao, CHEN Huaigu

Research paper

260167 **Etiology and pathogen infection characteristics of Glomerella leaf spot disease on 'Qincui' apple**
CHEN Wenjing, WU Chenxiao, LIU Fa, ZHANG Rong, SUN Guangyu, ZHU Mingqi, LIANG Xiaofei

260202 **Genetic interaction between MoSvf1 and the Mps1 signaling pathway reveals their roles in cell wall homeostasis and pathogenicity of *Magnaporthe oryzae***
FU Xianhui, HUANG Junqi, WANG Guanghui, JIANG Cong

260201 **Resistance characteristics and virulence spectrum of *Puccinia striiformis* f. sp. *tritici* to triadimefon in Xizang, China**
GENG Li, HU Jingwen, JIANG Xinyi, LONG Ying, KANG Zhensheng, ZHAN Gangming

260246 **Diversity, conservation, and strain-specific distribution of biosynthetic gene clusters in *Fusarium verticillioides***
WANG Rui, GUO Wei

260244 **Construction of an efficient gene-knockout chassis strain of *Fusarium pseudograminearum* through deletion of *FpKu80***
LI Yanling, ZENG Yongjiang, XU Ming

260211 **Molecular mechanism of transporter VdFRP regulating fludioxonil resistance and virulence in *Verticillium dahliae***
ZHANG Xiaochen, DOU Fengfeng, HU Xiaoping, QIN Jun

260263 **Biological functions of CgCdc11, a core protein of the Septin family in *Colletotrichum graminicolum***
DAI Yafeng, LÜ Yuanpu, LI Zhenkun, SHI Xiyu, ZHANG Xiaodan, ZHANG Yimei

260265 **Regulation of growth and virulence of *Sclerotinia sclerotiorum* affected by G-protein signaling regulator SsRGS1**
QIAN Xiaoxiao, WANG Penghui, WANG Shumeng, WEI Qianqian, ZHANG Yiping, ZHU Jun, FU Xuan, PAN Yuemin, YANG Guogen

260267 **Functional characterization of the subtilisin-like protease LtPRB1 from the pepper powdery mildew pathogen *Leveillula taurica***
LIU Yiyao, DAI Jiahui, YU Huimin, PANG Tongda, OU Shiqi, LIU Shuyan, LIU Xinqiang