

刺萼龙葵病原菌的分离鉴定及致病力的研究

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摘 要:【目的】在中国, 刺萼龙葵是一种外来入侵恶性杂草, 为确定该杂草的病原菌种类, 利用生物防治措施合理有效地控制其扩散蔓延。【方法】本研究通过对中国辽宁省和吉林省的 8 个地点对刺萼龙葵开展病害调查, 采集具有典型病症的叶片样本。通过组织分离法对病原菌进行分离, 根据形态学特征及分子生物学技术对分离菌株进行鉴定, 并采用人工接种病原菌孢子悬浮液的方法对刺萼龙葵种子、离体叶片、盆栽植株进行致病力测试。【结果】调查共采集到 120 份病叶, 分离后根据其菌落形态和序列比对结果共分为 5 种病原菌, 分别鉴定为链格孢菌、高粱附球菌、木贼镰刀菌、*Curvularia hawaiiensis* 和稻黑孢霉菌。5 种病原菌均对刺萼龙葵具有致病力, 其中稻黑孢霉菌和高粱附球菌的致病力较强。稻黑孢霉菌对种子胚根萌发长度抑制率为 47.76%, 离体叶片和盆栽植株接种该病原菌后发病的病情指数分别为 60%和 70%, 具有中等致病力。高粱附球菌对种子胚根萌发长度抑制率为 36.64%, 盆栽植株接种该病原菌后发病的病情指数为 78.3%, 具有强致病力。【结论】这是首次对刺萼龙葵在中国的病害发生情况及其病原微生物进行调查, 在辽宁省和吉林省引起该杂草发病的病原真菌有 5 种, 其中稻黑孢霉菌和高粱附球菌是优势致病种, 且不同病原菌对刺萼龙葵的致病力存在显著差异。

关键词: 刺萼龙葵; 高粱附球菌; 稻黑孢霉菌; 致病力

Isolation, identification and pathogenicity research of *Solanum rostratum*

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Abstract: **【Objective】** *Solanum rostratum* is a malignant invasive weed in China, in order to determine the pathogen of the weed and to develop biological control measures for its reasonable and effective containment. **【Method】** In this study, leaf samples of *S. rostratum* with typical diseases were collected by investigating the disease of eight sites in Liaoning and Jilin province, China. The pathogens were isolated using the tissue isolation method and identified based on their morphological characteristics and molecular biology techniques. The pathogenicity was tested through artificial inoculation of spore suspensions from the pathogen onto seeds, isolated leaves, and plants of *S. rostratum*. **【Result】** A total of 120 diseased leaves were collected in the survey. According to the morphological and molecular characteristics, five pathogens were identified as *Alternaria alternata*, *Epicoccum sorghinum*, *Fusarium equiseti*, *Curvularia hawaiiensis*, and *Nigrospora oryzae*, respectively. All five pathogens exhibited pathogenicity, among which *E. sorghinum* and *N. oryzae* showed strong pathogenic effects. The inhibition rate of seed root germination length by *N. oryzae* was 47.76%, and the disease indexes of isolated leaves and plants inoculated with this pathogen were 60% and 70%, respectively, which was medium pathogenic. The inhibition rate of seed root germination length by *E. sorghinum* was 36.64%, and the disease index of plants inoculated with this pathogen was 78.3%, which showed strong pathogenicity. **【Conclusion】** This is the first investigation of the disease occurrence and pathogens of *S. rostratum* in China. The results demonstrated that there are five pathogens causing disease of this weed in Liaoning and Jilin province. *E. sorghinum* and *N. oryzae* were the dominant pathogenic species, and different pathogens have significant differences in the pathogenicity of *S. rostratum*.

Key words: *Solanum rostratum*; *Epicoccum sorghinum*; *Nigrospora oryzae*; Pathogenicity