

马铃薯黄萎病研究现状

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摘要: 马铃薯黄萎病是一种重要的世界性病害之一, 为土传兼种传维管束病害, 危害大且防治困难。本文将该病害的分布与危害、症状、6种病原的形态学及其生物学特性、发病规律、病原检测技术和病害综合防控措施等方面研究进行了综合概述, 可为该病害的相关深入研究提供理论指导。

关键词: 马铃薯; 黄萎病; 病原菌; 检测技术; 防控措施

Research advances of Verticillium wilt of potato

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Abstract: Verticillium wilt is one of the important and widespread diseases in most potato regions of the world. It is a soil-borne and seed-borne vascular disease difficult to control. This paper summarized the research progresses of the disease, including the symptoms, the morphology of 6 different pathogenic species, the biological characteristics of the pathogens, disease cycle, the detection technology of pathogens, and the synthetical measures of disease control. These results are summarized in this paper and provide theoretical guidance for further research on Verticillium wilt of potato.

Key words: potato; Verticillium wilt; pathogen; detection technology; control

马铃薯黄萎病(Verticillium wilt of potato)又称早死病或早熟病, 是马铃薯主要菌物病害之一, 在全世界温带地区广泛分布, 是典型的土传兼种传维管束病害。其病菌可在土壤中持久存在, 又可随种子调运而远距离传播, 引起系统性侵染, 使马铃薯整株带病, 最终影响马铃薯的产量及品质, 造成严重经济损失。该病菌寄主范围较广, 除了对马铃薯有较强致病力外, 还可侵染大豆、棉花、苜蓿、番茄和三叶草等多种植物, 引发黄萎病, 对农业生产具有较大危险(李济宸, 1992; Davis & Huisman, 2001)。本文从马铃薯黄萎病的分布与危害、症状、病原、发病规律、检测技术和防控措施等方面展开综述, 以期为该病害的后续深入研究提供参考。

1 马铃薯黄萎病分布与为害

1879年, 德国人 Reinke 和 Berthold 首次从马铃

薯病株上发现并报道了该病害, 将其定名为马铃薯黄萎病, 病原定名为黑白轮枝菌 *Verticillium albo-atrum* Reinke & Berthold(Harvey, 1965)。1916年, 美国明尼苏达州发现了该病害, 当时危害轻, 尚属零星发生。1963—1965年, 美国已有76%的马铃薯地块不同程度地发生黄萎病, 每公顷可减产5~12 t。其后, 该病害在世界各地相继被报道, 已成为一种世界性病害。其病原菌共有6种, 其中以 *V. albo-atrum* 和大丽轮枝菌 *V. dahliae* Kleb. 致病性较强, 危害最重, 而后者较前者的侵染机率大, 是马铃薯黄萎病的最常见病原(彭学文, 2003; Isaac, 1949)。

1944年, 戴伦焰在我国四川首次发现马铃薯黄萎病(彭学文, 2003)。田绍义(1984)于1972—1973年在河北省尚义县、张北县和康北县调查发现该病害, 尚义县病株率为1.9%~20.2%, 其病原为

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