

论文

甜瓜与单囊壳白粉菌亲和互作组织病理学及超微结构研究

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摘要:

利用光学显微镜与透射电镜技术, 观察了单囊壳白粉菌(*Podosphaera xanthii*) 1号生理小种侵染感病甜瓜叶片组织病理学和超微结构特征。结果表明: 分生孢子接种后4 h开始萌发生管状芽管, 生出的第1个芽管顶端膨大形成附着胞, 随后附着胞中部产生吸器侵入寄主表皮细胞, 其余芽管也不断分化出菌丝并产生吸器, 接种后120 h形成串生分生孢子完成侵染。病原菌成功侵染后诱导吸器周围寄主细胞细胞器大量增加, 表皮细胞中甚至分化出一些结构简单的小型叶绿体。随着病原菌不断侵染扩张使侵染点下方及邻近寄主叶肉细胞发生质壁分离, 叶绿体解体, 线粒体空泡化, 最终细胞壁折叠, 细胞内含物释放。

关键词: 甜瓜 单囊壳白粉菌 侵染 超微结构

Histopathology and Ultrastructure of Infection of *Podosphaera xanthii* on Melon Leaves

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Abstract:

Using optical microscopy and transmission electron microscopy, the histological and ultrastructural characters of infection of *Podosphaera xanthii* Race 1 on the susceptible host (Topmark) were observed. The spores on the leaf germinated and formed germ tubes 4 h after inoculation. The top of the first germ tube swelled and formed appressorium. At the middle of appressorium, the haustorium formed and invaded into the epidermis cells of melon leaf. The other tubes differentiated and the haustorium formed in the following time. The catenate conidia formed 120 h after inoculation, indicating that infecting process completed. Some small and simple chloroplasts differentiated in the infected epidermis cells. With the extension of hyphae, plasmolysis phenomena, degeneration of chloroplasts and mitochondria vacuolization happened in the host mesophyll cells under or next to the attacked epidermis cells, and the cell wall folded and cell contents released from the cells.

Keywords: melon *Podosphaera xanthii* penetration ultrastructure

收稿日期 2010-09-17 修回日期 网络版发布日期

DOI: CNKI:22-1100/S.201104

基金项目:

国家西甜瓜现代产业技术体系分子育种岗位科学家项目(nycytx-36-01-01-02), 黑龙江省自然科学基金重点项目(ZJN0705)

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