

辽宁省甜瓜果腐病病原菌鉴定及生物学特性初探

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Identification and Biological Characteristics of Muskmelon Fruit Rot Pathogen in Liaoning Province

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摘要 由丝核菌引起的甜瓜果腐病是辽宁省近年发生的新病害, 在棚室甜瓜生产中发生渐趋严重。根据病原菌形态、致病性、菌丝融合群和rDNA-ITS序列分析, 确定其病原菌为茄丝核菌 (*Rhizoctonia solani*), AG-4 HGI融合群。病原菌生物学特性测定结果表明, 菌丝生长最适温度28 ℃; 最适pH 6.0 ~ 8.0; 供试10种培养基中, 在甜瓜煎汁培养基中菌丝生长最快; 供试9种碳源和10种氮源中, 最适碳源为可溶性淀粉, 最适氮源为蛋白胨; 光照对菌丝生长影响较小。菌核形成最适条件为温度25 ℃, pH 7.0, 理查培养基, 黑暗条件; 以山梨醇为碳源的PA培养基和以KNO₃为氮源的查氏培养基有利于菌核形成。对于病菌菌核萌发胡萝卜煎汁培养基最为适宜; 供试9种碳源和10种氮源中, 最适碳源为麦芽糖, 最适氮源为蛋白胨; 菌核萌发最适温度28 ℃, 最适pH 5.0 ~ 8.0, 黑暗条件利于菌核萌发; 菌丝致死温度50 ℃、10 min; 菌核致死温度53 ℃、10 min。

关键词: 甜瓜 甜瓜果腐病 茄丝核菌 rDNA-ITS 生物学特性

Abstract: Muskmelon fruit rot caused by *Rhizoctonia* sp. is a new disease first found in Liaoning Province in recent years. The disease appears more serious on greenhouse muskmelon. The casual agent was identified as AG-4 HGI of *Rhizoctonia solani* by the studies of the morphology, pathogenicity, anastomosis groups and ribosomal DNA-ITS. The biological characteristics of the results showed that the best mycelium growth was obtained at 28 ℃ and pH 6.0 - 8.0; The melon juice culture medium was most conducive to mycelium growth in the 10 tested media, The optimum one was soluble starch in the 9 tested carbon sources, the optimum nitrogen source was peptone. The effect of light on the mycelial growth was not evident. The ideal sclerotium generation was at 25 ℃, pH 7.0, in darkness and with Czapek culture medium. The beneficial carbon source for the formation of sclerotia was Sorbitol; The beneficial nitrogen source for the formation of sclerotia was KNO₃. Sclerotium germination was well with carrot juice culture medium; In the 9 tested carbon sources and 10 tested nitrogen sources, sclerotium germination was in favor of malt sugar and peptone; The optimum temperature for sclerotium germination was 25 ℃; The optimum pH is 5.0 - 8.0; Dark conditions was benefit for sclerotium germination. The mycelial lethal temperature was at 50 ℃ for 10 min. The lethal temperature for sclerotium was at 53 ℃ for 10 min.

Keywords: muskmelon, muskmelon fruit rot, *Rhizoctonia solani*, rDNA-ITS, biological characteristics

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