贵州油茶间座壳叶枯病病原种类鉴定与生物学特性研究

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摘 要:【目的】研究引起贵州油茶叶枯病病原菌种类及其主要生物学特性，筛选最佳防治药剂，为探明其发生传播规律和防治叶枯病奠定基础。【方法】采用组织分离法获得病原菌菌株 GZU-Y2，通过形态学分析、分子生物学鉴定以及柯赫氏法则对菌株进行鉴定，并采用十字交叉法来对不同环境条件下的病原菌菌丝生长直径进行测量，以观察病原菌生物学特性，用生长速率法测定了 5 种市售杀菌剂对该病原菌菌丝生长的抑制作用。【结果】结果表明，油茶叶枯病致病菌分离株 GZU-Y2 的培养物菌落奶油状，气生菌丝生长旺盛，α 型分生孢子为单细胞、椭圆形或梭形，大小为 6.1 μm（4.1-8.0）×2.6 μm（1.9-3.6）（n=50）；该菌株 *ITS* 序列、*TEF-1α* 及 *TUB2* 基因的部分序列系统发育进化分析结果表明，与 *Phomopsis mahothocarpus* 聚为一枝，结合形态学特征及分子生物学技术手段，将病害组织中分离纯化得到的菌株 GZU-Y2 确定为 *Diaporthe mahothocarpus*。该病原菌在 5-30℃内均能生长，最适温度为 28 ℃；不同光照对病原菌生长的影响有差异，持续的光照培养促进菌丝生长；最适碳源为蔗糖，最适氮源为蛋白胨，最适培养基是查氏培养基；供试的 5 种市售杀菌剂中，多菌灵对 GZU-Y2 菌丝生长的的抑制效果最好，10 倍稀释液抑菌率可达 100 %，EC_{50} 值最小，为 4.5362 μg/mL。【结论】综上所述，通过对贵州油茶叶枯病病原菌的生物学特性研究，筛选出最佳防治药剂，为进一步明确油茶叶枯病的发生规律，以及控制油茶叶枯病的发生和提高防治效果提供科学依据。

关键词：油茶叶枯病；间座壳属；生物学特性；药剂筛选

Identification and biological characteristics of the *Diaporthe* species of leaf blight of Camellia oleifera mesocosm in Guizhou

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Abstract:【Objective】 To study the species of pathogens causing Camellia oleifera leaf blight in Guizhou and their main biological characteristics, to screen the best control agents and to clarify the effect of different conditions on Camellia oleifera leaf blight. 【Method】The pathogenic strain GZU-Y2 was obtained by tissue isolation, and identified by morphological analysis, molecular biology and Koch's method. The inhibition of the

mycelial growth of the pathogen by five commercially available fungicides was determined by the growth rate method. 【Result】The results showed that the cultures of GZU-Y2, the causal agent of Camellia oleifera leaf blight, were creamy with vigorous aerial mycelial growth, initially creamy white and later greyish white, and the alpha conidia were unicellular, hyaline, sterile, oval or sorrel-shaped, measuring 6.1 μm (4.1-8.0) × 2.6 μm (1.9-3.6) (n=50), The results of the phylogenetic evolutionary analysis of the ITS sequence, TEF-1α and TUB2 gene showed that the strain was clustered with Phomopsis mahothocarpus and was genetically distant from other strains. The strain GZU-Y2 was identified as Diaporthe mahothocarpus by combining morphological characteristics and molecular biology techniques. The *D. mahothocarpus* was able to grow at temperatures ranging from 5 to 30°C, with the optimum temperature being 28°C. The effect of different light conditions on the growth of the *D. mahothocarpus* varied, with continuous light incubation promoting mycelial growth; the *D. mahothocarpus* utilised sucrose and peptone most effectively among the carbon (nitrogen) sources tested; the most suitable medium for the *D. mahothocarpus* was Czapek; of the five commercially available fungicides tested, the results showed that all the fungicides had a positive effect on the growth of the pathogen. The results showed that all the fungicides had certain inhibition effect, and carbendazim had the best inhibition effect on the mycelial growth of the *D. mahothocarpus*, with the inhibition rate up to 100% in 10 times dilution, and the smallest EC50 value was 4.5362μg/mL; while the EC50 value of polygamycin was the largest, 35.6073μg/mL, with the worst inhibition effect.【Conclusion】In conclusion, through the study of the biological characteristics of the pathogenic bacteria of Camellia oleifera leaf blight in Guizhou, the best control agent was selected to provide a scientific basis for further research on the occurrence pattern of oil tea leaf blight, as well as to control the occurrence of oil tea leaf blight and improve the control effect.