REACTION OF SOURCES OF RESISTANCE TO WHITE MOLD TO MICROSATELLITE HAPLOTYPES OF SCLEROTINIA SCLEROTIORUM

Bruno de Almeida Soares¹; Miller da Silva Lehner²; Rhaphael Alves Silva³; Renan Cardoso Lima⁴; Rogério Faria Vieira⁵; Trazilbo José de Paula Júnior⁶

¹Estudante de Graduação de Agronomia, Universidade Federal de Viçosa. Viçosa, MG, Brasil. E-mail: bruno_2102@hotmail.com; ²Pós-doutorando, Fitopatologia, Universidade Federal de Viçosa. Viçosa, MG, Brasil; ³Estudante de Graduação de Agronomia, Universidade Federal de Viçosa. Viçosa, MG, Brasil; ⁴Pós-doutorando EPAMIG, UREZM. Viçosa, MG, Brasil; ⁵Pesquisador da EPAMIG, UREZM. Viçosa, MG, Brasil.

White mold caused by the fungus Sclerotinia sclerotiorum is the most yield-limiting disease of common bean in Brazil. So far, there is no commercial cultivar resistant to this disease. The aim of this study was assess the physiological resistance of the lines A195, Cornell 605 and G122 against eight genetically distinct isolates of S. sclerotiorum collected in the main producing regions of common bean in Brazil. In greenhouse, we evaluated white mold resistance sources (Cornell 605, A195 and G122) against eight isolates of S. sclerotiorum from five Brazilian states. A Brazilian cultivar (BRSMG Madrepérola) and a susceptible check (Beryl) were used as control. Treatments were arranged in factorial combinations (5 x 8) in a completely random design with four replicates. Disease severity was assessed using a 1-to-9 scale and lesion length, which was used to calculate area under the disease progress curve (AUDPC). The polymorphisms detected in ten microsatellite loci were used to assess the variability among the isolates. Each isolate was a distinct haplotype, they formed a genetic tree with two clusters. One cluster was formed by three isolates collected in Minas Gerais and São Paulo (southeastern); the others, by isolates from Paraná, Santa Catarina (southern), Goiás (mid-western), and Minas Gerais. Genotype x isolate interaction was significant. In general, Beryl was more susceptible than Madrepérola. Considering the AUDPC or/and the white mold reaction score, Cornell 605 exhibited more physiological resistance than Madrepérola for seven isolates, A195 for five isolates, and G122 for two isolates. Our results suggest that Cornell 605 is the best source of resistance to white mold for southern region, whereas Cornell 605 and A195 are somewhat superior to G122 for the southeastern and mid-western regions.

Keywords: Phaseolus vulgaris; Sclerotinia sclerotiorum; aggressiveness

ACKNOWLEDGMENTS: CNPq, CAPES and FAPEMIG for financial support.