COMUNICAÇÕES

Rhizoctonia solani AG1-IA causing leaf blight in Erythrina indica var. picta in Brazil

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Erythrina indica var. *picta* (L.) B. & M. (*Fabaceae*), commonly known as brasileirinho, sunshine tree or coral tree, is a rustic ornamental tree widely used in gardens in Brazil. In March of 2014, leaf blight and intense defoliation in *E. indica* var. *picta* were observed in Moju, PA, Brazil (Fig. 1A). The spots were characterized by the presence of mycelia on the leaf surface (Fig. 1A). Microscopic examination of the mycelia revealed association with *Rhizoctonia* spp. The characteristics observed were a distinct right-angle branching pattern, the constriction of hyphae near the point of origin, and multinucleate individual hyphae compartments (1). The fungus was isolated from infected tissues on potato-dextrose-agar (PDA). The anastomosis group (AG) was determined by pairing the isolate with the following tester strains of multinucleate *Rhizoctonia solani* group: AG1- IA (CMAA 908) AG1-IB (CMAA 909); AG-2-2 IIIB (CMAA 907); AG3 (CMAA 906); AG4 AHI (CMAA 903); AG4 140 (CMAA 904); AG7-H0 (CMAA 901); AG-BI TS-2-4 (CMAA 905) (2). The isolates were obtained from the Culture Collection of Microorganisms of Environmental and Agricultural Importance (CMAA) of the Brazilian Agricultural Research Corporation, located in Jaguariúna, São Paulo. The isolate of *E. indica* var. *picta* anastomosed with AG1-IA. The genomic DNA of the isolate was extracted (3), and the ITS-5.8S region was amplified by using the pair of primers ITS4B/ITS1F. The amplicons were cloned by using pGEM-T Easy Vector Sys-
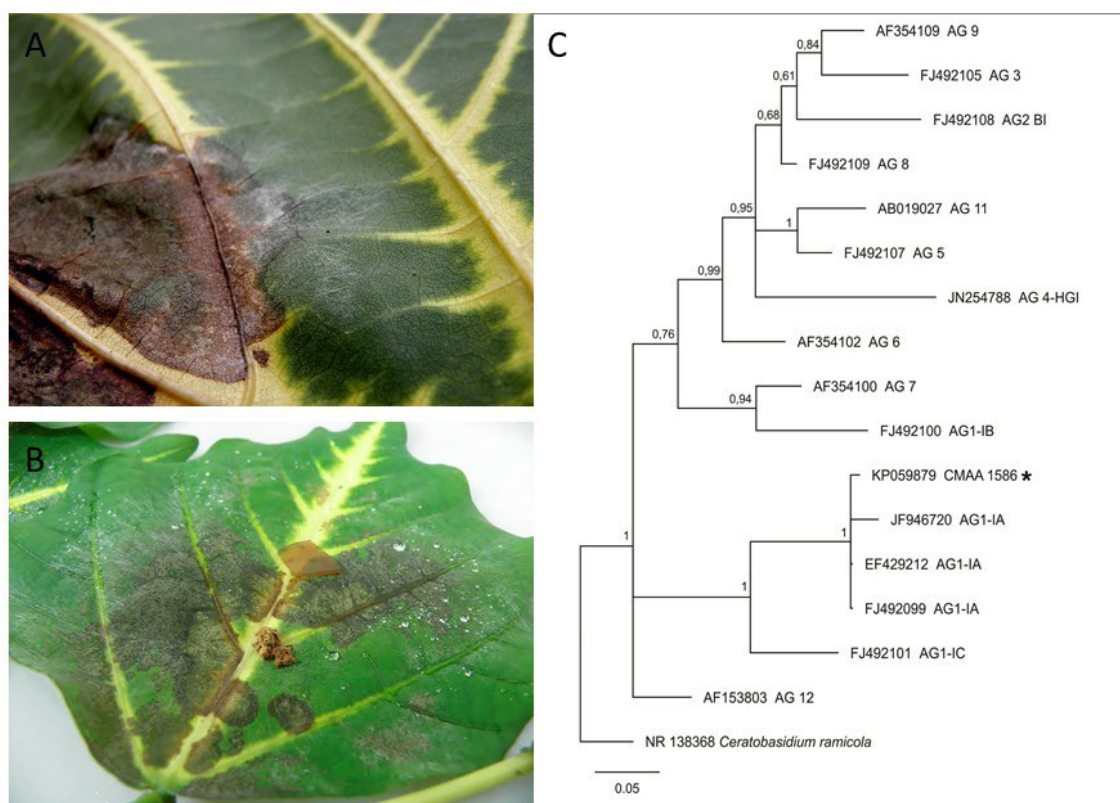

Fig. 1 A. Symptom of leaf blight in *Erythrina indica* var. *picta* in the field caused by *Rhizoctonia solani* AG1-IA; **B**. Leaf blight on *E. indica* var. *picta* five days after inoculation with *R. solani* AG1-IA; **C.** Phylogenetic tree of isolates from different anastomosis group of *Rhizoctonia solani* obtained from GenBank by Bayesian inference based on the ITS sequence. The isolate of *E. indica* var. *picta* CMAA 1586 (KP059879) is marked with an asterisk. Node labels indicate posterior support probability. The sequence of *Ceratobasidium ramicola* was employed as an outgroup.

tem (Promega) kit and the competent *Escherichia coli* cells OneShot® DH5aᵀᴹ (Invitrogen, San Diego), which were then used in the PCR reaction. The sequencing reactions were done in Applied Biosystems® 3500 Genetic Analyzer. The pathogenicity test was performed by inoculating healthy leaves with mycelium discs of the isolate. The control leaves were inoculated with PDA discs. After inoculation, the leaves were covered with plastic bags for 24 h and maintained at 28 ºC. After five days, foliar necrosis was observed only on inoculated leaves (Fig. 1B). The fungus was reisolated fulfilling Koch´s postulates. The isolate sequence (715 bp) was deposited in the GenBank (access: KP059879) with 99% identity with *R. solani* accesses from beet (FJ492099) and rice (EF429212) AG1-IA. In the phylogenetic tree of the ITS-5.8S region, the isolate was clustered with *R. solani* isolates belonging to AG1-IA (Bayesian posterior probability = 1) (Fig. 1C). The isolate was deposited in CMAA (access code CMAA 1586). The results of this study confirmed the fungus *R. solani* AG1-IA as the etiological agent of *E. indica* var. *picta* leaf blight in Brazil. In the Amazon region, the occurrence of *R. solani* AG1-IA has been reported in important cultures, such as soybean (4), rice (5), and cowpea (6). The current studies of genetic population of *R. solani* AG1 IA suggest its potential to emerge as a pathogen in new hosts based on the mixed reproductive system of the pathogen, including both sexual reproduction and long-distance dispersal of adapted clones, its genetic diversity and population size (7). These characteristics can support the origin of the emergence of *R. solani* AG1 IA in *Erythrina indica* var. *picta*.

ACKNOWLEDGMENTS

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