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BREEDING FOR RESISTANCE TO BACTERIAL WILT OF EGGPLANT IN BRAZIL

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Bacterial wilt (BW), caused by *Ralstonia solanacearum*, is one of the most important solanaceous diseases in the tropics and subtropics. In Brazil, this disease is particularly destructive to eggplants when high air humidity and high temperature are prevalent, like in the lowland regions in the southeastern states. As well as for tomato and pepper, eggplant has been infected mainly by biovars I and III, and eventually by biovar II-T.

Control of BW will be more effective if resistant cultivars could be associated with crop management measures, such as crop rotation, soil amendment and proper irrigation. However, there are no BW-resistant cultivars available for Brazilian farmers. Some attempts on this subject have already been done. Screening methodology has been defined and four resistant cultigens were identified by Morgado (1991) in the eggplant working collection of the National Centre for Vegetable Crops Research (Embrapa-*HORTALIÇAS*), where a project for breeding eggplant for BW-resistance was started. The Inbred Line System and the Single Seed Descent are being used and their effectiveness in introgressing such a quantitative trait will be compared.

Resistant sources have been re-evaluated by greenhouse and field trials. In order to establish if their resistance to bacterial wilt is strain or biovar-dependent, a greenhouse trial was carried out including two susceptible controls (line CNPH006 and cv. Florida Market). The cultigens were challenged with a set of 16 strains of biovars I, II-T and III. A completely randomized two-way factorial design (eggplant cultigens and bacterial strains) was used with three replications of eight plants in two pots. Seedlings were inoculated at the two/three-true leaf stage by dipping the roots, which had been washed in tap water and severed at one-third from the lower extremity for 1 min into the bacterial suspension of ca. 10^8 ufc/ml. Seedlings were then transplanted to sterile soil in 0.5-L plastic pots. Disease was individually scored 21 days after inoculation according to a scale from 1 (no symptoms) to 5 (dead plant).

Analysis of variance for disease severity revealed significant differences ($P<0.05$) among cultigens, bacterial strains and the interaction between cultigens and strains. Moreover, it seems that there is no specific resistance to any of the biovars among eggplant cultigens, as shown by cluster analysis. Considering the performance of cultigens for each strain, 'CNPH 171' showed significantly lower scores of disease severity than the susceptible controls for all strains, being then identified as the best resistant source to be used in the breeding project of Embrapa-*HORTALIÇAS*. The same results have been observed when plantlets at the 2-leaf stage were wound inoculated by puncturing the stem with an entomological needle through a 10 µl drop of bacterial suspension of c.a. 10^8ufc/ml. This last inoculation method has been preferred since: (a) it is a quick method, allowing screening of a large number of plants in shorter time; (b) it is more reliable resulting in few escapes, and (c) disease can be recorded sooner (7-10 days after inoculation).