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## RESUMO

Bacterial spot is a disease caused by *Xanthomonas* spp. This disease generates great losses in the cultures of sweet peppers and chilli peppers, and the planting of resistant plants is the most effective form of control. This work aims to identify resistant F7 lines. The segregating population, originated from the cross between sweet pepper susceptible to bacterial stain (UENF 2285) and resistant pepper (UENF 1381), was conducted by the SSD method - Single Seed Descent. Forty F7 lines, with four plant per line, and their parents were evaluated. To evaluate the reaction to the bacterial stain, the ENA 4135 isolate of the pathogen *Xanthomonas euvesicatoria* was used. The inoculation was carried out in the greenhouse in seedlings, with infiltration of bacterial suspension [105 cfu / mL] in the leaf mesophyll. The reaction to the bacterial stain was evaluated using a scale of scores, with values from 1 to 5, evaluated daily for a period of ten days. Values 1 and 2 were considered resistant and 3 to 5 were considered susceptible. The area under disease progress curve (AUDPC) and the inoculation period (IP) were calculated. The components of variance and the predicted genetic values of the lines were estimated by REML / BLUP with the aid of SELEGEN. The estimate of heritability in F7 was 0.80 and 0.73, and accuracy of 0.89 and 0.85 for AUDPC and IP, respectively. These values demonstrate the high level of homozygosity within the lines and high experimental precision. Five lines were classified as resistant to bacterial stain, with the potential to become a new resistant cultivar, with lines 339 and 260 obtaining results similar to parental UENF 1381. These lines are suitable for competition tests in the field and subsequent launch of new cultivars resistant to bacterial stain.

**PALAVRAS-CHAVE:** Pepper, *Xanthomonas* spp, Plant Breeding

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