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Genetic Parameters Estimate for Plant Characters of a Particular Carrot Population in Two Different Agroecologic Cultivation Systems

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The aim of the present work was to estimate genetic parameters that provide a breeding strategy in the search for the development of new varieties of carrot adapted to the conditions of Distrito Federal's agroecology cultivation. Considering data from tests performed in areas of agroecology cultivation (Natural Agriculture-AN and Organic Agriculture-AO), the following characteristics were evaluated: incidence of leaf blight-QDF, incidence of root cracking-RACH, root length-COMP, root diameter-DR, root mass-MASSA, xylem diameter-DX, relation of xylem diameter/root diameter-DX/DR, format of root tip-TP, format of root shoulder-TO, measure of the color of the a* xylem parameter-a*X, measure of the color of the a* phloem parameter-a*F. Traits were evaluated in 100 half-sib progenies derived from Brasília cultivar, using a completely randomized block design. For the characters COMP, a*X, a*F, TP and TO, the treatment X environment interaction was significant according to the results from test F. The values of the individual variance analyses presented significant effect for the following characteristics: COMP, a*X, TP, TO, QDF for AN system, and COMP, a*X, a*F, TP for AO system. In AN system, the values of heritability estimates-ha² for the plant characters fluctuated from 65.66 to 25.52% and, in the AO system, the ha² of the characters a*X, were 81.13%, respectively. Estimates of genetic gain per cycle for the characters a*X and a*F were lower in AN system than the estimates observed in AO system. Breeding studies may be carried out in one place.

Keywords - *Daucus carota*, genetic breeding, heritability