

MORPHOLOGICAL MARKERS OF ROOT IN MAIZE GENOTYPES WHICH CONTRAST FOR DROUGHT TOLERANCE IN RESPONSE TO PHOSPHORUS STRESS

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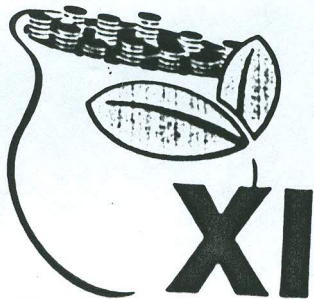
This work was carried out with the objective of evaluating morphological attributes of root system and growth characteristics of root and plant canopy of inbred lines selected for tolerance to drought from the maize breeding program belonging to Embrapa Maize and Sorghum. Two inbred lines tolerant (L1 and L3) and two sensitive (L2 and L4) to drought were seeded in seedling beds with different levels of phosphorus, low (4 mg. dm⁻³) and high (20 mg. dm⁻³). The experiment was seeded manually at space 0,20 m among plants and 0,20 m among lines. The experimental plots were established in 0.8 m² (four lines of 1.2 linear meters being five plants per linear meter). The experimental design used was randomized complete blocks, with six replications. There were three evaluations of root system morphology by using the digital images system, WinRhizo Pro 2007a (Regent Instruments Inc.) and as well as evaluations of characteristics of growth roots and plant canopy at 14, 21, 28 (days after seeding). It was observed significant differences for root morphological attributes root and canopy growth. In general the inbred lines considered tolerant to drought showed root system different from inbred lines sensitive to drought. Those tolerant resulted in a larger root length, surface area, volume, and greater contribution of roots with diameter less than 0.5 mm in plants grown in the condition of low phosphorus availability.

Key words: morphological markers, root, maize, phosphorus, WinRhizo

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