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Evaluation of drought tolerance contrasting cassava varieties under semi-arid environment

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Theme:

Marker development and breeding applications

Cassava varieties are being field evaluated under irrigation and rainfed conditions in the semi-arid environment of Petrolina, Brazil, where the annual average rainfall and potential evapotranspiration are around 560 mm and 1500 mm, respectively. Plants has been submitted to two water status conditions: irrigation and water deficit (irrigated only in the first 3 MAP); and evaluated in different periods using growth and physiological parameters, in order to identify some traits that are most contrasting and can be useful to select genotypes for drought tolerant attributes. From the preliminar analysis of the trials' data (not completed yet), the results have showed significant effect of water deficit treatment on production's parameters such as tuber roots fresh weight, number of tuber roots, dry matter and harvest index, with different responses among varieties. The most contrasting traits that have showed correlation to the varieties performance are leaf retention, leaf conductance, and early bulking. These results have been useful to better grouping the varieties as tolerant or susceptible to drought and then to define the better traits for selecting in the breeding program. Some traits such as ABA, sugars and starch accumulation, are being evaluated in the lab.