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Anatomical alterations due to polyploidy in cassava, *Manihot esculenta* Crantz

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ABSTRACT. Information on anatomical structure is needed by breeders working on improvement for drought tolerance. For studying the effect of polyploidy on cassava anatomy and its significance to tolerance to drought, we induced a polyploidy type of a selected clone (UnB 530) by applying an aqueous solution of 0.2% colchicine on lateral buds for a period of 12 h. The stem identified as tetraploid was propagated to produce the whole plant. Free-hand cross-sections of the median portion between stem internodes were made. They were clarified using 50% sodium hypochlorite solution, stained with 1% safranin-alcian blue, passed through an ethanol series and butyl acetate and mounted in synthetic resin. The tetraploid type showed more prismatic and druse crystals in the cortical parenchyma, and its pericycle fibers had thicker walls. The secondary xylem of tetraploid types was wider than diploid ones, having thinner walls and less starch.

Key words: Anatomy; Cassava; Diploid stems; Tetraploid stems

