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# Origin of a polyploid accession of *Brachiaria humidicola* (Poaceae: Panicoideae: Paniceae)

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**ABSTRACT.** *Brachiaria humidicola*, a species adapted to poorly drained and infertile acid soils, is widely used throughout the tropics. Cytological characterization of 54 accessions of *B. humidicola* for breeding purposes revealed 2n = 36, 42, and 54 chromosomes. One accession (H030), with 2n = 42 chromosomes, showed a different meiotic behavior. In most accessions from the genus *Brachiaria* previously studied, the basic chromosome number is x = 9, but the putative basic number in H030 appears to be x = 6. Since six univalent chromosomes were found in diakinesis and metaphase I, and these behaved as laggards in anaphase I, it was hypothesized that both genitors were derived from x = 6, and that this accession is a heptaploid 2n = 7x = 42. The parental genomes did not have the same meiotic behavior, particularly during anaphase, when one genome consisting of six univalents remained as laggards and underwent sister-chromatid segregation. At telophase, 18 segregated chromosomes were found at each pole. The laggard genome did not reach the poles at telophase I or II in time to be included in the nucleus and was eliminated as micronuclei.

**Key words:** Allopolyploidy; *Brachiaria humidicola*; Chromosome elimination; Genome affinity; Meiotic behavior

 