

Mejoramiento genético en *Brachiaria*: objetivos, estrategias, logros y proyecciones

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Summary

Until five years ago, the *Brachiaria* spp. cultivars available commercially in Colombia, were derived without genetic modification from natural germplasm accessions of three polyploid, apomictic species: cv. Marandu and La Libertad (*B. brizantha*), cv. Basilisk (*B. decumbens*), and cv. Humidicola and Llanero (*B. humidicola*). These cultivars, as a group, are of immense economic value in Colombia and more widely in tropical America. It is estimated that these conventional cultivars of *Brachiaria* together represent 85% of all tropical forage grass seed sold in Brazil.

The hybrid cultivars Mulato and Mulato II are the products of a program of genetic improvement whose objective is to combine, in apomictic cultivars, the edaphic adaptation of cv. Basilisk (*B. decumbens*) with the resistance to spittlebugs (Homoptera: Cercopidae) characteristic of cv. Marandu and other accessions of *B. brizantha*. Given the polyploidy and apomictic (asexual) reproduction characteristic of *B. brizantha* and *B. decumbens*, it was not possible to cross the two species directly, but rather a strategy based on a tetraploidized sexual germplasm of *B. ruziziensis* was adopted. We synthesized a tetraploid, sexual population with a broad genetic base by crossing between the tetraploidized *B. ruziziensis* and selected accessions of *B. brizantha* and *B. decumbens*. The synthetic population has been submitted to recurrent selection to improve its level of resistance to spittlebugs and its edaphic adaptation. The best sexual clones are crossed with apomictic accessions to generate hybrid populations from which apomictic hybrids, candidates for release, are selected. The hybrid cultivars released to date still have defects. As the synthetic sexual population is improved, the probability increases of obtaining apomictic hybrids with outstanding expression of all characters of interest in an ideal cultivar.