3129 - Forage & Grazing Lands

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RECIPROCAL RECURRENT SELECTION: A STRATEGY TO OBTAIN SUPERIOR APOMICTIC HYBRIDS IN BRACHIARIA DECUMBENS

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Embrapa Beef Cattle;

Pastures of Brachiaria decumbens cv. Basilisk radically changed the scenario of central Brazil livestock production from the early 1970s and allowed the development of this vast region. Despite of the reasonable biomass yield and nutritional value, susceptibility to grassland spittlebugs limits its use nowadays. The breeding of B. decumbens was restricted to interspecific crosses using the cultivar Basilisk as pollen donor due to the lack of compatible sexual ecotypes within the species. Recently, with the chromosome duplication of a sexually reproducing diploid accession, it was possible to carry out intraspecific crosses. Four hundred and fifty seven intraspecific hybrids, obtained from crosses between three sexual plants artificially tetraploidized by colchicine and the apomictic tetraploid cv. Basilisk, compose the base population of this work. This paper reports part of the research to obtain superior apomictic hybrids in B. decumbens using reciprocal recurrent selection, a cyclic breeding strategy. The methodology involves progeny production through crosses; evaluation and selection of these progenies for agronomic traits, nutritional value and resistance to spittlebugs; recombination of selected progenies and identification of superior apomictic hybrids. Of the 457 hybrids in the base population, 153 had the mode of reproduction characterized. Of these, 80 were sexual and 73 apomictic, a result that is consistent with a monogenic dominant inheritance of apomixis. Crosses between the 80 sexual tetraploid plants and the apomictic cultivar Basilisk were performed in a crossing block scheme to obtain full sib progenies. These progenies will be evaluated in the next rainy season and selected for further recombination. In each selection cycle superior apomictic hybrids shall be identified to proceed to cultivar development in order to promote grassland diversification through the identification of improved cultivars.