

AUTOTETRAPLOID *UROCHLOA RUZIZIENSIS* BREEDING

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The forage grass *Urochloa ruziziensis* autotetraploid and with sexual mode of reproduction is an important component of the *Urochloa spp.* breeding programs. The intrapopulation breeding objectives are to increase biomass and seed yield, and nutritional forage quality aiming to cross-pollinate with apomictic species. As with other tropical forage grass species, the association between flowering and seed yield components, the mode of inheritance and the effects of population structure on phenotypic breeding are scarce. Twenty-one characteristics evaluated in fifty-nine half-sib progenies of seven subpopulations were analyzed using a mixed model methodology. The genetic variation within subpopulations was higher than among subpopulations for all characteristics, based on the magnitude of heritability. The characteristics index of flowering, number of panicles, seed weight, *seed-set* and all those associated with the production of biomass, excluding regrowth in the dry season, showed additive genetic variation statistically significant between and within populations. The narrow sense heritability within subpopulations varied from 0.08 to 0.30 and from 0.17 to 0.29 for agronomic characteristics evaluated during wet and dry season, respectively. Nutritional quality and reproductive characteristics presented lower magnitude narrow sense heritability within (0.01 to 0.22) and among subpopulations (0.01 to 0.16). The highest magnitudes of heritability among the subpopulations were observed for the total number of panicles (0.16), *seed-set* (0.15), green matter yield (0.22) and DM yield (0.21) during dry season. The genetic variability available in experimental breeding populations is derived from the structuring of subpopulations and progeny and from Mendelian segregation effects within progeny. All three pieces of information can and should be capitalized on genetic improvement programmes based on phenotyping. The null commonality ($Com = 0.01$) evidenced between the filled seed production and biomass production is advantageous for the selection and genetic gain in both characteristics, i.e., there is not causal relationship between them which is useful for selection and breeder decision-making.

PRESENTER BIO: Dr. Simeão is a Researcher with more than 18 years of experience researching tropical forage. She has extensive experience with genetic breeding of apomictic and sexual forage grass as well as *Stylosanthes spp.* and *Arachis spp.* forage legumes.