BREEDING POTENTIAL OF A SEXUAL *Panicum maximum* POPULATION FOR IMPROVING DRY MATTER AND DISEASE RESISTANCE

Santos MF[1]; Jank L[1]; Fernandes CD[1]; Ematne HJ[2]; Resende RMS[1]; Valle CB[1]; Barrios SCL[1].

[1]Embrapa Beef Cattle, Avenida Radio Maia, 830 – 79106-550 – Campo Grande, MS Brazil.[2] Department of Biology, Graduate Program in Plant Genetics and Breeding, University of Lavras, MG, Brazil.

Breeding populations to improve biomass yield and to reduce losses by diseases is mandatory for releasing sustainable forage cultivars. *Panicum maximum* is a highly productive and nutritive tropical forage species that has its potential decreased by the leaf spot (LS), caused by the fungus *Bipolaris maydis,* and by Johnsongrass mosaic virus (JGMV). The objectives of this study were to estimate genetic parameters and selection response for total dry matter, LS and JGMV severities in *P. maximum* sexual population. Thirty plants from twenty different progenies and the check Mombaça were evaluated in spaced plants in a completely randomized block design at Embrapa Beef Cattle Experimental Station in Campo Grande, MS, Brazil, in the rainy season of 2014/2015. Total dry matter (leaf+stem - TDM), in $g.plant^{-1}$, was evaluated in three clippings; LS and JGMV severities were assessed in 35 day intervals, until the end of March/2015, by scores ranging from 0 (absence of symptoms) to 8 (>50% of disease severity) and 1 (without symptoms) to 5 (strong symptoms or dead plant), respectively. Mixed model procedure was applied to estimate variance components and to predict means by best linear unbiased prediction (BLUP). For all traits, there was a significant genetic variance. Narrow sense heritability (h^2) were 0.28, 0.29 and 0.16 for TDM, LS and JGMV, respectively, showing that selection response is possible for all traits. Genetic correlations between traits were -0.82 for TDM vs LS, -0.18 for TDM vs JGMV and 0.41 for LS vs JGMV. These results show a highly negative correlation between dry matter and leaf spot severity. The selection response demonstrated that the truncated selection will improve the mean population by 15.65% for TDM, 9.82% for LS and 8.63% for JGMV comparing with Mombaça cultivar. Therefore, this sexual population can be used as a valuable source of highly productive and resistant parental plants for use in Embrapa's *P. maximum* hybrid Breeding Program.

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Corresponding author: Mateus Figueiredo Santos, mateus.santos@embrapa.br