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STUDY OF THE GENETIC VARIABILITY IN A COLLECTION OF ITALIAN ECOTYPES OF SACCHARUM SPONTANEUM BY SSR MARKERS

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Among other effects, the climate changes that are occurring during our historical period are causing plant species for the first time after millennia to move and spread not only through the same parallel (east-west) but also in different latitudes. This also concerns new crops that are starting to settle in new environments. *Saccharum spontaneum L.*, a wild relative of sugarcane, is a rhizomatous, perennial plant native to India and Great Middle East but it has now spread in many tropical and subtropical regions of the world. Specifically, *S. spontaneum* started to spread in southern Italy in the last decades. It is a tetraploid species with high chromosomal number variability (2n = 40 – 128). The base chromosome number is assumed to be x = 8 unlike the common sugar cane which has x = 10. *S. spontaneum* has been recognized as a promising species for biomass/feedstock production in semi-arid environment, however it has not undergone yet to any tempt of domestication. In this study we characterized a collection of *S. spontaneum* created by 44 plants collected from coastal areas of Sicily, Italy, where this species is spreading vigorously, using molecular markers (SSR markers). We have analysed 40 markers and have found 53 different alleles in our samples. Overall, the species appears to be highly genetic homogenous, suggesting a clonal mechanism of propagation. This observation has implication in the perspective of domestication and

genetic improvement.