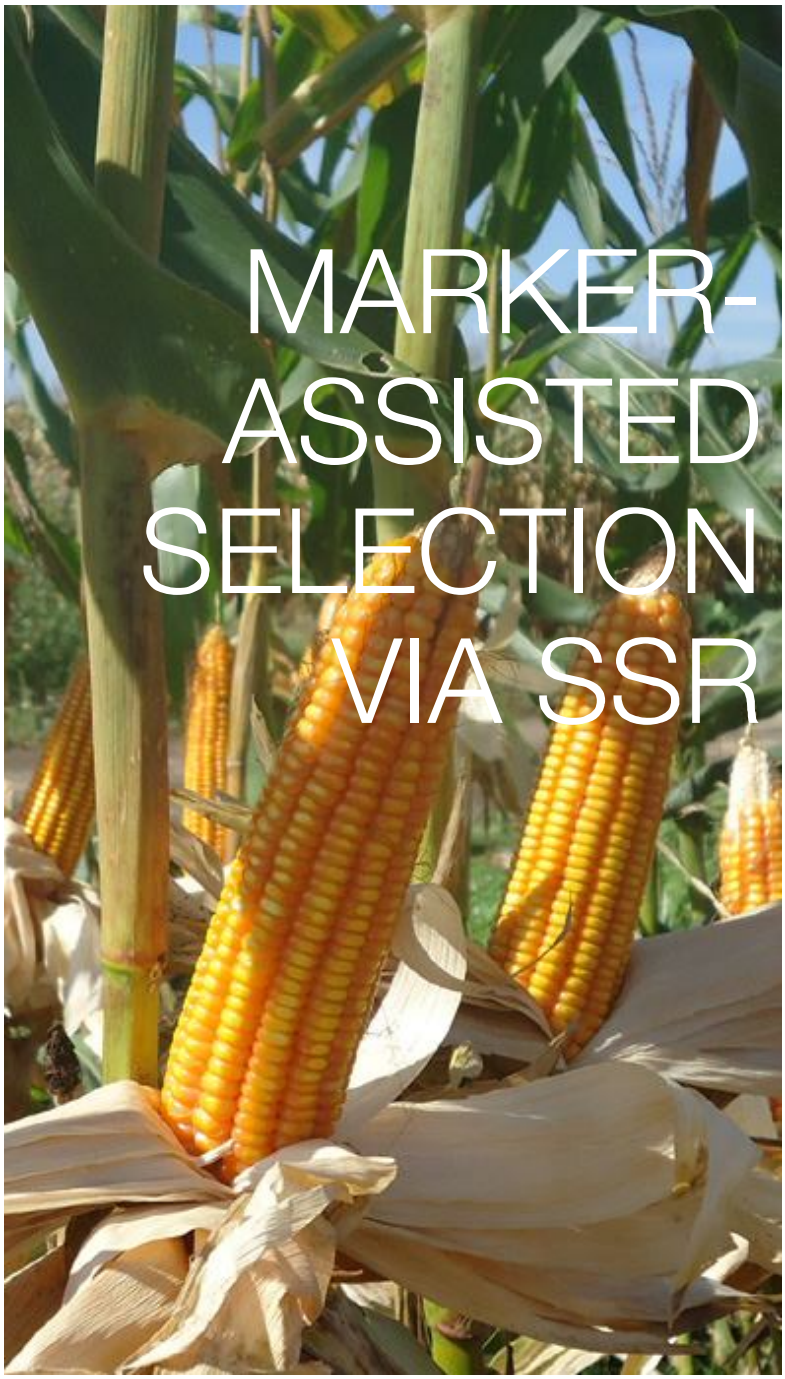

TO IMPROVE DROUGHT TOLERANCE OF HYBRID MAIZE IN SOUTHERN VIETNAM

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Evaluation of 62 maize inbred lines as breeding materials for drought tolerance with 8 PCR-based markers has been undertaken. Phenotype evaluation under field conditions with two water regime treatments indicated the significant differences in important traits among inbred lines such as: grain yield, growth duration, plant height, ear height. Eight SSR markers revealed a total of 21 alleles in 62 inbred lines with an average of 2.63 alleles per locus. Primer umc 1354 on chromosome 1 showed the highest number of alleles in the investigation (5 alleles). The dendogram of genetic clusters diversified 62 inbred lines into 4 distant groups. Based on these 4 distance-genetical groups, 84 single crosses have been developed by crossing between lines of different groups. Phenotyping these crosses under normal and drought stress conditions helped identify one promising cross as VK1 x NK67-2 (named as MN-1) to become a very promising variety. MN-1 obtained higher yield as compared to C919 (from Monsanto, the most important early genotype in Southern Vietnam) under regular and stress conditions. This single cross has been approved after VCU testing and can be applied widely in Southern Vietnam.