Submergence Tolerance in Irrigated Lowland Rice Varieties: Agro-Morphological Basis for Rice Genetic Improvement in Southern Benin

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Abstract

Objective : The study was carried out, on the rice perimeter of Southern Benin, to evaluate the response of irrigated and lowland rice varieties to the complete and partial submergence using agro-morphological traits. ***Method :*** Thus, 15 rice varieties were submerged in the field during 60 days according to split plot experimental design with two factors and three replications. Agro-morphological parameters such as plant height, number of tillers, the distance of internodes and the number of internodes were measured respectively at 13 days and 45 days. After harvest, some traits such as length, width and thickness of grains, panicle length, number of primary and secondary branches, the average number of empty grains and full grains per panicle and 1000-grain weight were recorded. ***Results :*** Very highly significant ($P \leq 0.0001$) differences were identified between agro morphological parameters according to the type of submergence while the factor type of immersion has significant influence on the number of internodes at 45 days after transplanting ($P \leq 0.01$). The submergence was not significant effect on tillering and length of internodes. ***Conclusion*** : The plant height, the weight of thousand grains and the average number of empty grains per panicle constitute key aspects and have been essential for evaluating tolerance to submergence in Benin.

Keys words : Rice, Submergence, Tolerance, Benin