

Analyses of yield related agronomic traits of Malaysian rice varieties

ABSTRACT

Analyses of morphological and agronomic traits not only provide important information in the selection of rice varieties for breeding, these data are also important in deciding plant materials for molecular characterization and analysis of phenotypic traits of interest. The aim of the present study was to collect, analyze and compare the agro-morphological data of 6 upland rice and 17 lowland rice varieties (*Oryza sativa* L.) from the Malaysian rice germplasms grown under the same greenhouse condition. The common factors that contributed to yield per plant in both upland and lowland rice varieties are plant height and percentage of filled grains. Panicle length was positively correlated to grain yield in upland rice varieties while many other agronomic traits could affect the yield per plant in lowland rice varieties such as total number of tillers, total number of panicles per plant, flag leaf width and days-to-flowering. The upland rice varieties have a slightly higher average total grain number per panicle in compensation of a low number of panicles. The compensation in total grain numbers per panicle was not sufficiently significant to affect the total yield per plant most probably due to a low total number of grains per plant. Despite a high 100-grain weight in general, some of these upland rice varieties have more than 50% percentage of unfilled grains. Data on these rice germplasms may offer information on a valuable gene pool which can be utilized in different varietal improvement/development program in future.

Keyword: Lowland; Malaysian rice varieties; Reproductive traits; Upland; Vegetative traits; Yield