



Morphological and phenological variability of Colombian weedy rice (*Oryza sativa*) accessions

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Weedy rice (WR) is considered one of the main weeds in rice cultivation. It can cause high yield losses and reduction of the quality of rice in several countries. Due to the great morphological diversity of weedy rice populations in Colombia, this study aims: (i) to assess the morphological variability of weedy rice and compared with commercial rice varieties and landraces planted in Colombia, (ii) to classify weedy rice accessions into certain morphological groups and to know the distribution into the rice zones; and (iii) to confirm the association between morphological and genetic groups. Seed of 387 WR accessions were collected from different producing areas in Colombia. We characterized 86 samples, 71 WR representative samples of the morphotypes found in the country, five rice commercial cultivars and 10 landraces (local cultivars). Twenty-seven phenotypic traits were evaluated according to descriptors for wild and cultivated rice. Morphological descriptors of seeds and plants were used. Here we found that Cultivars rice and weedy rice accessions have some similar traits; however, each group has unique characteristics. Weedy rice and landraces were taller than the commercial rice varieties, and weedy rice showed flowering overlap with rice varieties. Clustering analysis revealed four major clusters for the Colombian weedy rice. Pigmentation of awn and apiculus, and awn presence and length are the most significant predictors. Nevertheless, the variation was not associated with the geographical areas in Colombia, and there is no association between phenotype and genotype.

Palavras-chave: red rice, phenotype diversity, rice, plant traits, seed traits

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