

Rapid Chemical tests for Identification and Grouping of Rice (*Oryza sativa* L.) Genotypes

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ABSTRACT

Characterization of varieties assumes greater importance with the implementation of Protection of Plant Varieties and Farmer's Right Act (2001) to ensure quality seed. Forty genotypes of rice were subjected to chemical tests using phenol, modified phenol, NaOH, GA₃ and 2, 4-D. Though no individual chemical test was able to distinguish all the genotypes, different chemical tests in conjunction were useful in identification of varieties. For phenol tests the seeds were soaked in distilled water for 18 hrs, then placed in Petri-plates containing filter paper moistened with 5ml of 1% phenol solution and for modified phenol test seeds were soaked in 0.5% copper sulphate (CuSO₄) for 18 hrs instead of distilled water. Based on the colour of the seed coat, genotypes were grouped as dark brown, (18) light brown (16) and no reaction (6). Where as in modified phenol test genotypes were grouped as black (1), dark brown (18) light brown (15) and no reaction (6). For NaOH test seeds were soaked in 2% NaOH solution for 1 hour and then the solution was decanted. Based on the colour of the solution, genotypes were grouped as yellow (7) and light yellow (33). The germination paper towels soaked in 25ppm GA₃ and 5ppm 2, 4-D were used to test the seedling response of these genotypes. Based on the response to GA₃ the genotypes were grouped as high (5) medium (30) and low (5) and based on their sensitivity to 2, 4-D the genotypes were grouped as highly, (4) moderately (4) and least (6) sensitive.

Key words : 2, 4-Dichlorophenoxyacetic acid, Gibberellic acid, Modified Phenol, Phenol, Rice, Seed keys, Sodium hydroxide