



RESEARCH ARTICLE :

Genetic parameter analysis in M_1 and M_2 generation of Rathu Heenati rice (*Oryza sativa* L.) variety

■ SELLAMMAL RAJA AND MAHESWARAN MARAPPAN

ARTICLE CHRONICLE :

Received :

14.07.2017;

Accepted :

29.07.2017

SUMMARY : The present investigation was carried out to study the genetic parameters like phenotypic and genotypic co-efficient of variation (PCV and GCV), broad sense heritability and genetic gain of 167 rice mutants in order to assess the magnitude of variability in photoperiod sensitive rice varieties in M_1 and M_2 generation. The study revealed highly significant differences for all the studied characters, indicating the presence of substantial genetic variability. Comparative study on mean and variance indicated that various quantitative traits observed in M_1 and M_2 generations of Rathu Heenati indicated that considerable shift occurred in the mean for all the traits and increased variability was noticed for all the traits in M_2 generation. The highest heritability was recorded under 300Gy of gamma ray across the treatment. This dose will be serving as effective dose for creating variability in these two varieties. The phenotypic coefficient of variation (PCV) was higher than its corresponding genotypic counterpart (GCV) for all characters studied. Small differences between GCV and PCV were recorded for all the characters studied which indicated less influence of environment on these characters. The highest GCV and PCV were evident in total number of productive tillers per plant and single plant yield and their lowest values for plant height and number of grains per panicle. These characters may serve as effective selection parameter in breeding programme for crop improvement.

KEY WORDS :

Gamma rays,
Mutation, Rice
genotypes,
Variability,
Heritability

How to cite this article : Raja, Sellammal and Marappan, Maheswaran (2017). Genetic parameter analysis in M_1 and M_2 generation of Rathu Heenati rice (*Oryza sativa* L.) variety. *Agric. Update*, 12 (TECHSEAR-4): 1113-1121; DOI: 10.15740/HAS/AU/12.TECHSEAR (4)2017/1113-1121.

Author for correspondence :

SELLAMMAL RAJA

Department of Rice,
Centre for Plant
Breeding and Genetics,
Tamil Nadu Agricultural
University, COIMBATORE
(T.N.) INDIA
Email: agrisellam
@gmail.com

See end of the article for
authors' affiliations