

VARIABILITY AND GENETIC PARAMETERS FOR GRAIN YIELD AND ITS QUALITY ATTRIBUTES IN CMS BASED RICE HYBRIDS (*ORYZA SATIVA* L.)

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Abstract: The present investigation is carried out to the genetic parameters for yield and its quality attributes in eighteen rice hybrids. Analysis of variance revealed significant differences for all traits under study. The characters viz. biological yield per plant(g), grain yield per plant(g), number of unfilled spikelet/plant, number of filled spikelet/plant, productive tiller/plant, spikelet fertility%, pollen fertility %, kernel length breadth ratio and harvest index. High GCV and PCV were recorded for traits viz., followed by biological yield/plant, grain yield/plant, number of unfilled spikelet/plant, number of filled spikelet/plant, productive tiller/plant, spikelet fertility%, pollen fertility%, kernel length breadth ratio and harvest index. High heritability coupled with high genetic advance as percent of mean was registered for grain yield/plant(g), number of unfilled spikelet/panicle, number of filled spikelet/panicle, productive tiller/plant, tiller/plant, spikelet fertility %, pollen fertility %, kernel length breadth ratio, harvest index, brown rice length breadth ratio, flag leaf area(cm²), hundred seed weight(g), plant height(cm), head rice recovery percentage, flag leaf length(cm), kernel length(cm), brown rice(cm), leaf area index, paddy length breadth ratio, paddy breadth(cm) suggesting preponderance of additive gene action in the expression of these characters.

Keywords: Variability, Heritability, Genetic advance, Hybrid rice

REFERENCES

- A.Kundu, B.K.Senapati, A. Bakshi and G.S.Mandal** (2008). Genetic variability of panicle characters in tall indica aman rice. *Oryza*. Vol 45(4):320-323.
- C.L.Sharma, C.H Misra, Kumar Kamales and V.N.Pathak** (2006). Genetic variability for seed yield and its components in rice (*oryza sativa* L.). *International Journal of Plant Science Research*. Vol 33:1-4.
- H.W.Johnson, H.F.Robinson and R.E.Comstock** (1955). Estimation of genetic and environmental variability in soybean. *Agronomy journal*. Vol 47:314-318.
- J.L.Lush** (1940). Intra-sire correlation and regression of offspring in rams as a method of estimating heritability of characters. *Proceedings of American Society of Animal Product*. Vol 33:292-301.
- K.Singh, S.B.Mishra, and P.B. Jha** (2000). Variability studies and interrelationship of some quantitative traits in boro rice. *Oryza*. Vol 37(3):187-190.
- P. Deepa Sankar, A. Sheeba and J. Anbumalarmathi** (2006). Variability and character association studies in rice (*Oryza sativa* L.). *Agricultural Science Digest*. Vol.26(3):182-184.
- P.Venkata Subbaiah, M. Reddi Sekhar, K.H.P.Reddy and N.P.Eswara Reddy** (2011). Variability and genetic parameters for grain yield and its components and kernel quality attributes in CMS based rice hybrids (*Oryza sativa* L.). *International Journal of Applied Biology and Pharmaceutical Technology*. Vol 2(3):603-609.
- P. Veerabhadhiran, M. Umadevi, and R. Pushpam** (2009). Genetic variability, heritability and genetic advance of grain quality in hybrid rice. *Madras Agricultural journal*. Vol 96(1-6):95-99.
- S. Sreedhar, S. Vanisree, N.Kulakarni and M.Ganesh** (2005). Gene effects for certain physical quality traits and grain yield in rice. *Madras Agricultural Journal*. Vol 92(4-6):183-187.
- T Vanaja and C. Luckins and Babu**. 2006. Variability in grain quality attributes of high yielding rice varieties (*Oryza sativa* L.) of diverse origin. *Journal of Tropical Agriculture*. Vol 44(1-2):61-63.
- V.G.Panse and P.V.Sukhatme** (1961). *Statistical methods for agricultural workers*. 2nd Edition ICAR, New Delhi.pp:361.
- V. Ravindra Babu, K. Shreya, Kuldeep Singh Dangi, G.Usharani, P.Nagesh** (2012). General variability studies for qualitative and quantitative traits in popular rice(*Oryza sativa* L.) hybrids in india. *International journal of scientific and research publications*. Vol 12(6):1-5.