

## ANALYSIS OF HERITABILITY AND GENETIC ADVANCE FOR YIELD AND QUALITY CHARACTERS IN AROMATIC ADVANCED BREEDING LINES OF RICE (*ORYZA SATIVA* L.)

**Sujeet Singh Kanwar, Raushan Kumar**

*Department of Genetics and Plant Breeding, Indira Gandhi Agriculture University,  
Raipur, 492006, Chhattisgarh, India  
Email: Sujeetgpb89@gmail.com; Raushan.ogrey@gmail.com*

**Abstract:** The experiment was conducted at Research Farm, Department of Genetics and Plant Breeding, College of Agriculture, Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.) during kharif 2010 to assess the agromorphological characterization, genetic variability, association analysis and genetic divergence among the ninety eight aromatic advanced breeding lines of rice along with popular standard checks namely Indira Sugandhit Dhan-1, Pusa Basmati-1, Badsha bhog, Dubraj, Chinnor, Mahisugandha and Kalanamak. High heritability with high genetic advance was found for number of Total spikelets per panicle and Filled spikelets per panicle. Grain yield per plant was positively and significantly associated with 100 seed weight, Total effective tillers per plant, Filled spikelets per panicle and Total spikelets per panicle.

**Keywords:** Aromatic Rice, Heritability, Genetic Advance

### REFERENCES

- Anonymous** (2011a). World Agricultural Production. *United States Dept. of Agril. Service*. p. 7.
- Anonymous** (2011b). The Hindu Survey of Indian Agriculture. Agril. Statistics Division Directorate of Economics & Statistics Dept. of Agriculture and corporation, p. 125.
- Anonymous** (2011c). Credible Chhattisgarh, Raipur. p. 8.
- Shastry, S.V., Tran, D.V., Nguyen, V.N. and Nanda, J.S.** (2000). Sustainable integrated rice production. In: Nanda, J.S. (Ed) *Rice Breeding and Genetics: Research Priorities and Challenges*. Oxford and IBH Pub., New Delhi. pp. 53-72.
- Juliano, B.O.** (1970). Relation of physic-chemical properties to properties characteristics of rice. Proc. 5<sup>th</sup> Cental and Board Congress, **4**: 21-27.
- Kavitha, S. and Reddy, N.S.R.** (2002). Variability and heritability and genetic advance of some important traits in rice (*Oryza sativa* L.). *Andhra Agric J.*, **49**(3-4): 222-224.
- Chandra, R. and Pradhan, S.K.** (2003). Analysis of genetic variability, heritability and genetic advance for yield and yield components in low land rice. *Indian J. Plant Genetic Resources*, **16**(3): 182-183.
- Hasib, K.M.** (2005). Genetic variability, interrelations and path analysis for panicle characters in scented rice. *Crop Res. J. Hissar*, **30**(1): 37-39.
- Satyanarayan, P.V., Sriniwas, T., Reddy, P.R., Madhavilatha, L. and Suneetha, Y.** (2005). Studies on variability, correlation and path coefficient analysis for restorer lines in rice (*Oryza sativa* L.). *Res. Crops*, **6**(1): 80-84.
- Choudhary, M., Sarawgi, A.K. and Motiramani, N.K.** (2004). Genetic variability of quality, yield and yield attributing traits in aromatic rice (*Oryza sativa* L.). *Adv. Pl. Sci.*, **17**(2): 484-90.
- Bansal, U.K., Saini, R., Rani, N.S. and Kaur, A.** (1999). Genetic divergence in quality rice. *Oryza*, **36**(1): 20-23.
- Amudha, K., Arumugachamy, S. and Thiyyagarajan, K.** (2006). Variability in three different segregating generations in crosses involving drought tolerant genotypes. *Plant Archives*, **6**(1): 127-131.
- Jaiswal, H.K., Shrivastava, A.K. and Dey, A.** (2007). Variability and association studies in indigenous aromatic rice. *Oryza*, **44**(4): 351-353.
- Subudhi, H.N. and Dikshit, N.** (2009). Variability and character association of yield components in rain fed lowland rice. *Indian J. Plant Genetic Resources*, **22**(1): 271-274.
- Chaudhary, M. and Motiramani, N.K.** (2003). Variability and association among yield attributes and grain quality in traditional aromatic rice accessions. *Crop Imp.*, **30**(1): 84-90.
- Kaw, R.N., Aquino, R.C., Mom, H.P., Yae, J.D. and Haq, N.** (1999). Variability and interrelations in rice under cold stress environment. *Oryza*, **36**(1):1-4.
- Chakraborty, R. and Chakraborty, S.** (2010). Genetic variability and correlation of some morphometric traits with grain yield in bold grained rice (*Oryza Sativa* L.). *Gene Pool of Barak Valley American-Eurasian J. of Sustainable Agriculture*, **4**(1): 26-29.
- Chauhan, J.S., Chauhan, V.S. and Variar, M.** (1993). Genetic variations and characters of rice grain in segregating rice (*Oryza sativa* L.). *Oryza*, **20**: 209-215.