

Variability and character association analysis in rice (*Oryza sativa* L.)

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SUMMARY

Five midland rice varieties namely PKY HMT, SYE-2001, SYE 18-12-10, SYE35-4-16-63 and PKY Khamang were undertaken for the study and experiment was carried out during *Kharif* 2008 to study the estimates of phenotypic (PCY) and genotypic (GCY) coefficient of variation for nine yield attributing characters. The results revealed that number of filled spikelets showed highest positive direct effect on seed yield plant⁻¹ followed by hundred seed weight. However, harvest index and biological yield plant⁻¹ exerted high negative direct effect on seed yield. Number of filled spikelets showed positive indirect effect on seed yield via plant height hundred seed weight showed negative and harvest index showed positive indirect effect on seed yield through number of tillers. It can be concluded that characters like number of filled spikelets, hundred seed weight, harvest index and biological yield are of utmost importance as these can be considered for improving the seed yield plant⁻¹.

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Key words : Harvest index, Genotypic (PCY) and Genotypic (GCY) coefficient of variation, Number of tillers, Seed yield plant⁻¹

Rice occupies a pivotal place in Indian agriculture, as it is the staple food for 70 per cent of the population. Rice, *the queen of cereals*, is one of the most important cereals that hold the key for food security. Rice is perhaps the oldest domesticated crop and provides 20 % of global human per capita energy and human consumption accounts of 85 % of its total production. Rice occupies largest area among all food crops in India. It is grown in 45 m ha area with a production of more than 93 m t. Rice contributes to 15 per cent annual GDP of India and provides 43 per cent calorie requirement for more than 70 per cent of Indians. Rice (*Oryza sativa* L.) is the world's most important food crop after wheat. It is the staple food and also a major source of livelihood for more than 250 million households. The bulk of Asian population-the urban poor, landless rural population and the marginal farmers spend more than half of their income on rice, being the dominant food staple (Singh *et al.*, 2000). Although, a marked increase in area and productivity has decades, it is still very far for level of some other countries. The main reason for low productivity is the lack of high yielding rice varieties

adapted to different seasons, cropping systems and agronomic conditions. Thus, there is an urgent need of developing high yielding varieties of rice so that this crop can fulfill its potential in combating the malnutrition prevalent in primarily vegetarian population of our country.

MATERIALS AND METHODS

Five midland rice varieties namely PKV HMT, SYE-2001, SYE 18-12-10, SYE35-4-16-63 and PKV Khamang were undertaken for the study and experiment was carried out at the Zonal Agricultural Research Station, Sindewahi, Distt. Chandrapur (Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola (M.S.) during *Kharif* 2008. The trial was conducted in Randomized Block Design with 3 replications. Observations on five randomly selected plants were recorded on nine yield attributing traits *viz.*, plant height, number of tillers, panicle length, number of filled spikelets, number of unfilled spikelets, hundred seed weight, biological yield plant⁻¹, harvest index and seed yield plant⁻¹.

RESULTS AND DISCUSSION

The estimates of phenotypic (PCV) and genotypic (GCV) coefficient of variation for nine yield attributing characters of midland rice varieties are represented in Table 2. Number of unfilled spikelets showed very high PCV along with high GCV followed by harvest index and seed yield plant⁻¹. Characters like number of filled spikelets, hundred seed weight and plant height also

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