



Relationship between leaf dry weight and root dry weight. 1 = 15 days after sowing (DS), 2 = 30 DS, 3 = 45 DS, 4 = 60 DS, 5 = 75 DS, 6 = 90 DS, 7 = 105 DS.

most balanced in Jhona 349, a reportedly salt-resistant variety. The low-yielding Basmati 320 and Basmati 198 deviated most by producing either low leaf-to-root weights for the former or low root-to-leaf weights for the latter (see figure). IR8, Basmati 6129, and IR6 also showed

moderately good relationships in terms of root-to-leaf weight production. Varietal screening for balanced growth of root-to-leaf weight may be helpful in identifying gene pools suitable for growth in diverse situations. ■

Diallel analysis of plant height, tiller number, and panicle length in rice

Mujibur Rahman Khan, Bangladesh Rice Research Institute, Dacca; and Moharnmad Amin Khan, University of Agriculture, Lyallpur, Pakistan

Genetic information obtained by diallel analysis of some rices revealed additive type of gene action for plant height and tiller number and complete dominance type of gene action for panicle length in a study conducted with some traditional and modern rices and their F_1 progenies. Jhona 349, a traditional type, possessed most of the dominant alleles for plant

height and tiller number, whereas IR6 possessed an excess of the dominant alleles for panicle length. IR6, IR8, and Basmati 320 had most of the recessive alleles for plant height and tiller number, while Jhona 349 had an excess of the recessive alleles for panicle length. Basmati 320 and IR8 had also many dominant alleles for panicle length.

Diallel analysis of the same rices and their F_1 progenies revealed overdominance type of gene action for number of spikelets per panicle, number of grains per panicle, and additive type of gene action for panicle weight. IR6 and IR8 had most of the dominant alleles for number of spikelets per panicle and number of grains per panicle, while Jhona 349 had an excess of dominant alleles for grain weight. Basmati 320 had an excess of the recessive alleles for number of spikelets per panicle and number of grains per panicle. Basmati 320, IR6, and IR8 had most of the recessive alleles for grain weight.

Rice cultivars possessing some desirable floral traits influencing outcrossing

S. S. Virmani, G. S. Khush, and Ran-Cui Yang, Plant Breeding Department, International Rice Research Institute

Although F_1 hybrid rice varieties have been successfully developed and cultivated in China, the ease and cost of the production of hybrid seed would determine to what extent the approach can be employed to develop high yielding hybrids in other rice-growing countries of the world. The floral structure of rice is not well-adapted to cross-pollination and less than 1% natural outcrossing is observed normally. On male-sterile plants, however, up to 33–45% seed set has been obtained in China. Several floral traits – stigma size, stigma exsertion, duration of opening of spikelet, and anther size and filament length – are known to influence outcrossing in rice. In the hybrid rice research program at IRRI, 86 elite breeding lines were studied for stigma length, stigma breadth, stigma exsertion, anther length, anther breadth, and filament length. There was sufficient

The International Rice Research Newsletter (IRRN) invites all scientists to contribute concise summaries of significant rice research for publication. Contributions should be limited to one or two pages and no more than two short tables, figures, or photographs. Contributions are subject to editing and abridgement to meet space limitations. Authors will be identified by name, title, and research organization.