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On Comparison of Some Stability Analysis Models

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The present study was carried out to compare some stability analysis models including safety-first indices empirically and ultimately to searchout stable genotype. For this purpose nine genotypes of pearl millet were screened under four weed management treatments viz. no weeding, hand weeding and herbicide atrazin at two levels (0.75 kg. a.i./ha. and 1.25 kg. a.i./ha.) during the *kharif* season of the years 1990, 1991 and 1992 at Gujarat Agricultural University, Anand Campus, Anand.

The genotypes tested were GHB-27, GHB-30, GHB-32, GHB-181, GHB-183, GHB-184, GHB-229, MH-179 and B. K.-560. The data on grain yield, dry fodder yield, plant stand, plant height, earhead length and weed counts were recorded at harvest and analysed. Three stability analysis models proposed by Eberhart and Russell (1966), Perkins and Jinks (1968a) and Freeman and Perkins (1971) were compared empirically for thier efficiency. Safety-first indices were also attempted for the purpose.

Differential response of genotypes to environment was observed in individual year as well as in pooled analysis for grain and dry fodder yield.

Ranking pattern of genotypes based on stability parameters viz., b_i (Regression coefficient) S_{di} (deviations from regression) was similar under Eberhart and Russell (1966) and Perkins and Jinks (1968a) models; Freeman and Perkins (1971) model deviated from Eberhart and Russell and Perkins and Jinks models in this respect. Eberhart and Russell (1966) model was considered as better from precision and computation convenience.

Safety-first indices studied had limited practical utility.

The environment-wise analysis also showed variable response of genotypes to weed control treatments. GHB-229 was high yielding stable genotypes in no weeding and hand weeding environments but not under herbicide application. MH-179 appeared high yielding and stable under herbicide application for weed control conditions.

"No weeding no herbicide application" practice as cost saving agronomic practice can be advocated if genotype like GHB-229 is made available to the farmers. This hybrid is high yielding and stable in performance.

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