

## Phenotypic Stability In Coriander (*Coriandrum Sativum* L.)

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### ABSTRACT

Stability parameters along with per se performance of 35 genotypes were estimated for 11 yield and yield contributing characters under 4 environments. The non-significant genotype x environment (Linear) interaction for all the 11 traits and significant pooled deviation for plant height, number of primary and secondary branches per plant, day to 50% percent flower, days to maturity, number of umbels per plant, number of umbel lets per umbel, number of grains per umbellet, grain yield per plant, essential oil content (mg/100g) and harvest index indicated the preponderance of non-linear component of g x e interaction. None of the genotypes showed uniform stability for all the characters. Pant Flaritima was found high yielding, highly stable and suitable for unfavourable environments. ATP-77, RD-23, JCO-462 and UD-446 were also stable and suitable for favourable and unfavourable environments.

**Key words :** Genotype x environment interaction, stability parameter.

### INTRODUCTION

Coriander (*Coriandrum sativum* L.) is grown for seed spices as well as green leaves. In order to increase its yield, a sound breeding programme was initiated in 1992-93 through. All India Coordinated Research Project on spices to develop high yielding lines of coriander suitable for sub-humid alfisols of Eastern India. As a result 35 improved genotypes of coriander were selected for present investigation to identify stable genotypes/varieties of coriander.

### MATERIALS AND METHODS

Thirty five improved genotypes, viz., DH-13, DH-36, DH-38, DH-48, DH-52, UD-1, UID-4, UD-20, UD-183, UD-435, UD-436, UD-446, UD-447, UD-684, UD-685, UD-686, Composite-3, Composite-4, GC-43, JCO-52, JCO-64, JCO-72, JCO-123, JCO-462, ATP-77, ATP-102, LCC-15, LCC-31, RD-23, RD-36, RD-41, RD-50. Rajendra Swati and Plant Haritima were grown during Rabi seasons. 1997-98 and 1998-99 at two locations on each centre namely Bihar Agricultural College, Sabour Farm and Tirhut College of Agriculture, Dholi Farm.

The experiment was laid out in randomized block design with three replications. The effective plot size was 3.0 x 1.5 m. where the seeds were sown at the distance of 30 cm. from row to row and 20 cm. from plant to plant within the row.

The usual agronomic practices were adopted uniformly for all the genotypes at all the locations for

raising the crop successfully. Ten plants were selected randomly in each plot for recording observations with respect to yield and yield components. Data with respect to day to 50 percent flowering and maturity were recorded on plot basis. The data were analysed as per method suggested by Eberhart and Russel (1966) to ascertain the stability of seed yield performance.

### RESULTS AND DISCUSSION

The analysis of variance (Table I) revealed significant difference among genotypes for plant height, number of primary branches per plant, number of secondary branches per plant, days to 50 percent flowering, days to maturity, number of umbel per plant, number of umbel lets per umbel, number of grains per umbellet, grain yield per plant, essential oil content and harvest index, indicating the presence of variability for all these characters. The environment mean sum of squares (linear) were highly significant for almost all the characters. High magnitude of environment (linear) effect in comparison to genotype x environment (linear) and pooled deviation were recorded which may be responsible for the adaptation with respect to yield and yield attributes in coriander.

The environment + (Genotype x environment) mean sum of squares were significant for almost all the characters except plant height and days to maturity and essential oil content. Similar results were obtained by Sastry et al. (1989). The deviation from regression mean squares was significant for all the characters indicating that the genotypes differed significantly with respect to

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