

Short Communication

## STABILITY PARAMETERS IN RAINFED WHEAT

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Wheat (*Triticum* sp.) is a sensitive crop to the vagaries of environment, and the yield fluctuates with variations in environments. Hence, a study was conducted to assess genotype  $\times$  environment interactions and stability of 20 genotypes at Dharwad under rainfed cropping system.

Twenty genotypes of wheat selected from National Drought and Heat Tolerance Observation Nursery (NDHTON), were tested over three years (1993-94 to 1995-96) in randomised block design with plot size of 3m  $\times$  4 rows. All the recommended agronomic practices were followed to raise good crop. Data on grain yield/plot (g) was recorded and used for statistical analysis for stability parameters (Eberhart and Russell, 1966). The differences were highly significant among the genotypes for grain yield/plot (Table 1). The environment (linear) was significant, indicating that environments differ markedly and thereby satisfying the requirement of stability analysis. Significant genotype  $\times$  environment (linear) interaction indicated genotypic differences for regression over environmental means (Table 1) and that genotypes behaved differently in different environments during three years of study.

**Table 1. Analysis of variance of stability for grain yield of 20 genotypes wheat in rainfed ecosystems**

SOURCE	D.F.	M.S.
Varieties	19	4240.4*
Environments	2	60855.4*
Variety $\times$ Environment	38	2533.2*
ENV + (Var. *ENV)	40	5449.3*
Environ (Linear)	1	121710.8*
Varxenviron (Linear)	19	3890.0*
Pooled deviation	20	1117.6*

\* = probability at 0.05 level.

For grain yield/plot, Sujata and Bijata Yellow with higher mean value (293.67 and 237.5), unit value (1.37 and 1.53) and non-significant  $S^2d$  value suggests that these genotypes are stable over three years in all the environments tested. Also, genotypes such as C-306 and NI-8223 with higher means (230.5 and 270.0) with significant  $b$  values ( $-0.33$  and  $2.86$ ) and non-significant deviations from  $S^2d$  values may perform better in a favourable environment. RS-491 and RS-626 showed relatively better means with low  $b$  values ( $0.23$  and  $0.65$ ) indicating their better performance in poor environments (Table 2).

**Table 2. Estimates of stability parameters (mean,  $b$  and  $s^2d$ ) for grain yield per plot(g) in wheat under rainfed condition.**

Sl.No.	VAR	SOURCE	MEAN	$b$	$S^2d$
1	A-9-30-1	NDHTON	193.0	0.33	9.3
2	C-306	"	230.5	$-0.33^{**}$	672.4
3	Hindi-62	"	173.2	0.61	253.2
4	Sujata	"	293.7	1.37	469.7
5	CM-59	"	233.3	1.32	117.9
6	Narmada-4	"	170.0	1.11	2628.9
7	NI-8223	"	270.0	$2.86^{**}$	63.2
8	Pissi-local	"	198.8	0.01	61.3
9	K-8027	"	188.0	1.10	867.6
10	Kharchia-65	"	200.5	1.11	131.2
11	Hyb-65	"	172.5	0.14	2816.1
12	B-Yellow	"	237.5	1.53	23.8
13	AKW-407-1	"	204.5	1.43	528.9
14	AKW-1057	"	191.2	1.32	61.4
15	RS-491	"	214.2	0.23	654.9
16	RS-628	"	132.3	$-0.11$	5711.8
17	RS-626	"	258.0	0.65	1748.3
18	21(s)Ad	"	210.33	1.91	3183.5
19	DT-20	"	212.67	1.63	532.9
20	HI-8351	"	188.17	1.77	558.5
Population Mean = 208.61			SEm $\pm$ = 23.6	SEm $\pm$ OF B = 0.42	

\*P = 0.05, \*\*P = 0.01

#### REFERENCE

Eberhart, S.A. and W.A. Russel. 1966. Stability parameters for comparing crop varieties. *Crop Sci.* 6: 36-40