

ANOVA for Environment 1

Source of Variations	df	Sum of Squares	Mean Squares	F Ratio	Probability	η^2	ηp^2	ω^2
REPLICATES	2	65.30390	32.65195	3.569	0.04395 *	0.127	0.229	0.081
VARIETIES	12	228.77090	19.06424	2.084	0.06078	0.445	0.510	0.160
ERROR	24	219.55063	9.14794					
TOTAL	38	513.62544	13.51646					

General Mean	41.0187	C.V.	7.3736
S.E.Diff.Mean	2.4695	Critical Diff.	5.0969

ANOVA for Environment 2

Source of Variations	df	Sum of Squares	Mean Squares	F Ratio	Probability	η^2	ηp^2	ω^2
REPLICATES	2	40.50662	20.25331	2.699	0.08761	0.090	0.184	0.052
VARIETIES	12	231.72424	19.31035	2.574	0.02349 *	0.512	0.563	0.207
ERROR	24	180.06698	7.50279					
TOTAL	38	452.29784	11.90257					

General Mean	42.6879	C.V.	6.4166
S.E.Diff.Mean	2.2365	Critical Diff.	4.6159

ANOVA for Environment 3

Source of Variations	df	Sum of Squares	Mean Squares	F Ratio	Probability	η^2	ηp^2	ω^2
REPLICATES	2	10.53923	5.26962	0.377	0.69006	0.017	0.030	-0.027
VARIETIES	12	282.27637	23.52303	1.682	0.13447	0.449	0.457	0.126
ERROR	24	335.66457	13.98602					
TOTAL	38	628.48017	16.53895					

General Mean	40.6246	C.V.	9.2057
S.E.Diff.Mean	3.0535	Critical Diff.	6.3021

ANOVA for Environment 4

Source of Variations	df	Sum of Squares	Mean Squares	F Ratio	Probability	η^2	ηp^2	ω^2
REPLICATES	2	2.87148	1.43574	0.192	0.82660	0.006	0.016	-0.026
VARIETIES	12	271.48024	22.62335	3.025	0.01013 *	0.598	0.602	0.251
ERROR	24	179.50565	7.47940					
TOTAL	38	453.85737	11.94362					

General Mean	38.8549	C.V.	7.0386
S.E.Diff.Mean	2.2330	Critical Diff.	4.6087

ANOVA for Environment 5

Source of Variations	df	Sum of Squares	Mean Squares	F Ratio	Probability	η^2	ηp^2	ω^2
REPLICATES	2	1.58498	0.79249	0.087	0.91673	0.002	0.007	-0.026
VARIETIES	12	422.77550	35.23129	3.879	0.00229 **	0.658	0.660	0.295
ERROR	24	217.95935	9.08164					
TOTAL	38	642.31984	16.90315					

General Mean	40.3787	C.V.	7.4633
S.E.Diff.Mean	2.4606	Critical Diff.	5.0783

ANOVA for Environment 6

Source of Variations	df	Sum of Squares	Mean Squares	F Ratio	Probability	η^2	ηp^2	ω^2
REPLICATES	2	11.70222	5.85111	1.297	0.29183	0.019	0.098	0.004
VARIETIES	12	495.10772	41.25898	9.146	0.00000 ***	0.805	0.821	0.397
ERROR	24	108.26898	4.51121					
TOTAL	38	615.07892	16.18629					

General Mean	39.7262	C.V.	5.3465
S.E.Diff.Mean	1.7342	Critical Diff.	3.5792

Eberhart & Russe1

DEVIATIONS FROM THEIR REGRESSION

VARIETY	Mean	$\sigma^2 V_i$	β_i	ΣY_{ij}	$\beta_i \# Y_{ij}$	$\Sigma \delta^2_{ij}$	F-Test	Probability	R ²	Probability	S ² Di
1 COGG -2	40.3667	42.7322	1.705	14.2832	24.3518	18.3804	1.5657	0.1861	0.5699	0.0828	1.6602
2 COGG -2*ML -267	40.9289	19.7813	-0.597	-4.9982	2.9820	16.7993	1.4310	0.2262	0.1507	0.4469	1.2649
3 COGG -2*PUSA -10	39.6306	64.0112	2.341	19.6082	45.8944	18.1168	1.5432	0.1923	0.7170	0.0334	1.5943
4 COGG -2*RMG -275	41.2822	51.6496	2.047	17.1525	35.1185	16.5311	1.4082	0.2338	0.6799	0.0435	1.1979
5 COGG -2*PDM -89	39.3950	16.4956	1.063	8.9061	9.4680	7.0276	0.5986	0.6642	0.5740	0.0810	-1.1780
6 COGG -2*LGG -460	40.9289	29.5533	0.456	3.8220	1.7437	27.8096	2.3689	0.0550	0.0590	0.6428	4.0175
7 COGG -2*LGG -410	40.2394	56.3251	-0.157	-1.3184	0.2075	56.1176	4.7802	0.0012	0.0037	0.9091	11.0945 **
8 COGG -2*COGG -22	40.9861	35.3291	1.195	10.0146	11.9716	23.3575	1.9896	0.0987	0.3389	0.2255	2.9045
9 ML -267	39.3950	25.9803	1.403	11.7576	16.5013	9.4790	0.8074	0.5222	0.6351	0.0577	-0.5651
10 ML -267*PUSA -10	41.2828	108.4100	2.599	21.7715	56.5796	51.8304	4.4150	0.0021	0.5219	0.1049	10.0227 **
11 ML -267*RMG -275	41.8122	117.9587	-0.295	-2.4704	0.7285	117.2302	9.9859	0.0000	0.0062	0.8824	26.3727 ***
12 ML -267*PDM -89	40.2489	58.9847	0.513	4.2973	2.2043	56.7805	4.8367	0.0011	0.0374	0.7136	11.2602 **
13 ML -267*LGG -460	40.6339	84.4339	0.722	6.0516	4.3715	80.0624	6.8199	0.0000	0.0518	0.6646	17.0807 ***
Total		711.6450	12.996	108.8777	212.1224	499.5225					
Population Mean	40.5485		Std.Err. Mean			1.3861					
Bi Mean	1.0000		Std.Err. Bi			1.0708					

Comparisons Between Different Stability Models

Variety	Eberhart and Russel Bi	Dev.MS/ (MSE/R)	TAI α Alpha	λ lambada	Hansen Di	Shukla s ²	Ecovalence Wricke W ²
COGG -2	1.705	1.566	0.848	1.239	7.922	4.454**	22.539
COGG -2*ML -267	-0.597	1.431	-1.921	1.484	4.099	8.144**	38.150
COGG -2*PUSA -105	2.341	1.543	1.613	1.117	9.508	6.966**	33.168
COGG -2*RMG -275	2.047	1.408	1.260	1.063	8.666	5.205**	25.717
COGG -2*PDM -89 -	1.063	0.599	0.076	0.515	5.487	0.795	7.056
COGG -2*LGG -460	0.456	2.369	-0.654	2.191	6.091	6.284**	30.282
COGG -2*LGG -410	-0.157	4.780	-1.393	4.734	7.598	15.042**	67.335
COGG -2*COGG -22	1.195	1.990	0.235	1.683	7.090	4.722**	23.673
ML -267	1.403	0.807	0.486	0.665	6.557	1.688	10.838
ML -267*PUSA -105	2.599	4.415	1.924	3.073	11.721	16.438**	73.240
ML -267*RMG -275	-0.295	9.986	-1.558	10.035	10.863	30.155**	131.272
ML -267*PDM -89 -	0.513	4.837	-0.586	4.443	8.191	13.016**	58.763
ML -267*LGG -460	0.722	6.820	-0.334	6.113	9.728	18.202**	80.703

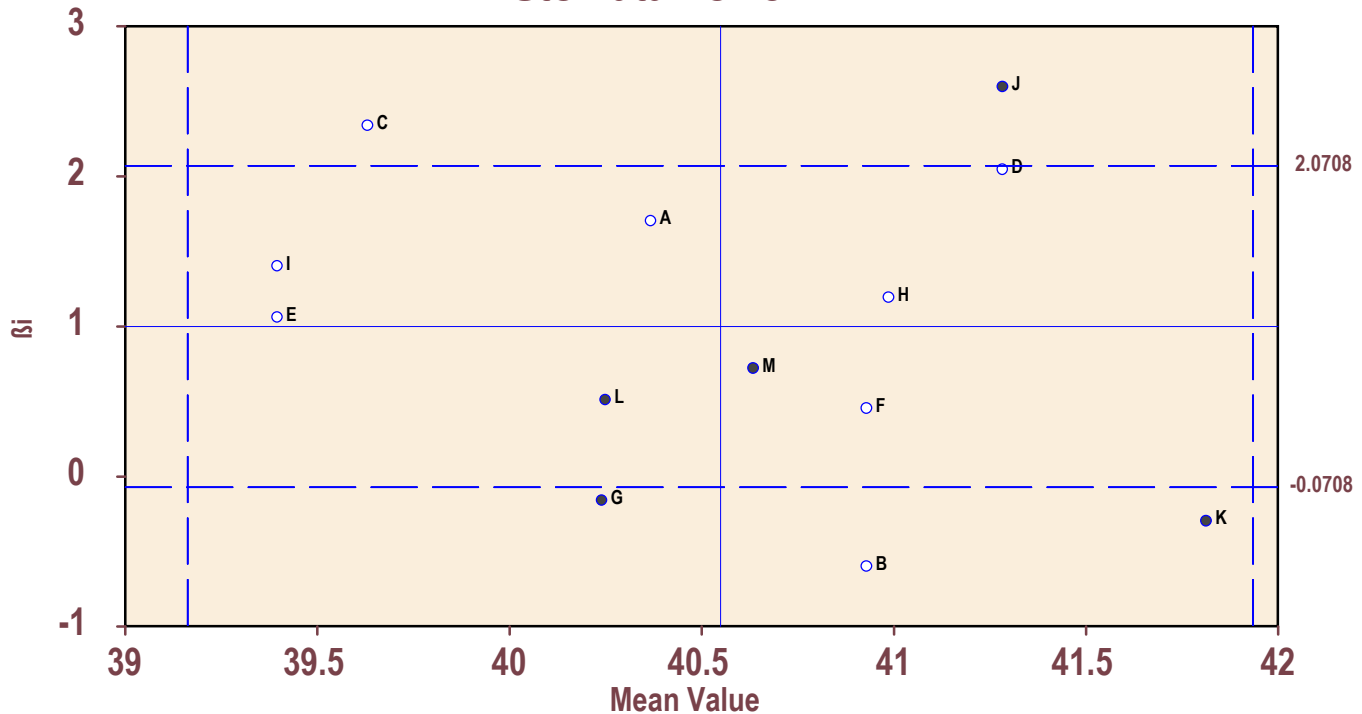
ANOVA for Stability (Stomata Lower mm²)

Source of Variations	df	Sum of Squares	Mean Squares	F Ratio	Probability
Rep within Env.	12	44.16948	3.68079	0.383	0.96378
Varieties	12	41.30872	3.44239	0.358	0.97217
Env.+ (Var.* Env.)	65	711.64496	10.94838	1.140	0.31418
Environments	5	108.87766	21.77553	2.267	0.06128
Var.* Env.	60	602.76731	10.04612	1.046	0.43645
Environments (Lin.)	1	108.87766	108.87766	11.334	0.00144 **
Var.* Env.(Lin.)	12	103.24479	8.60373	0.896	0.55695
Pooled Deviation	52	499.52252	9.60620	3.344	0.00000 ***
Pooled Error	144	413.67205	2.87272		
Total	77	752.95370	9.77862		

Means table for Stomata Lower mm²

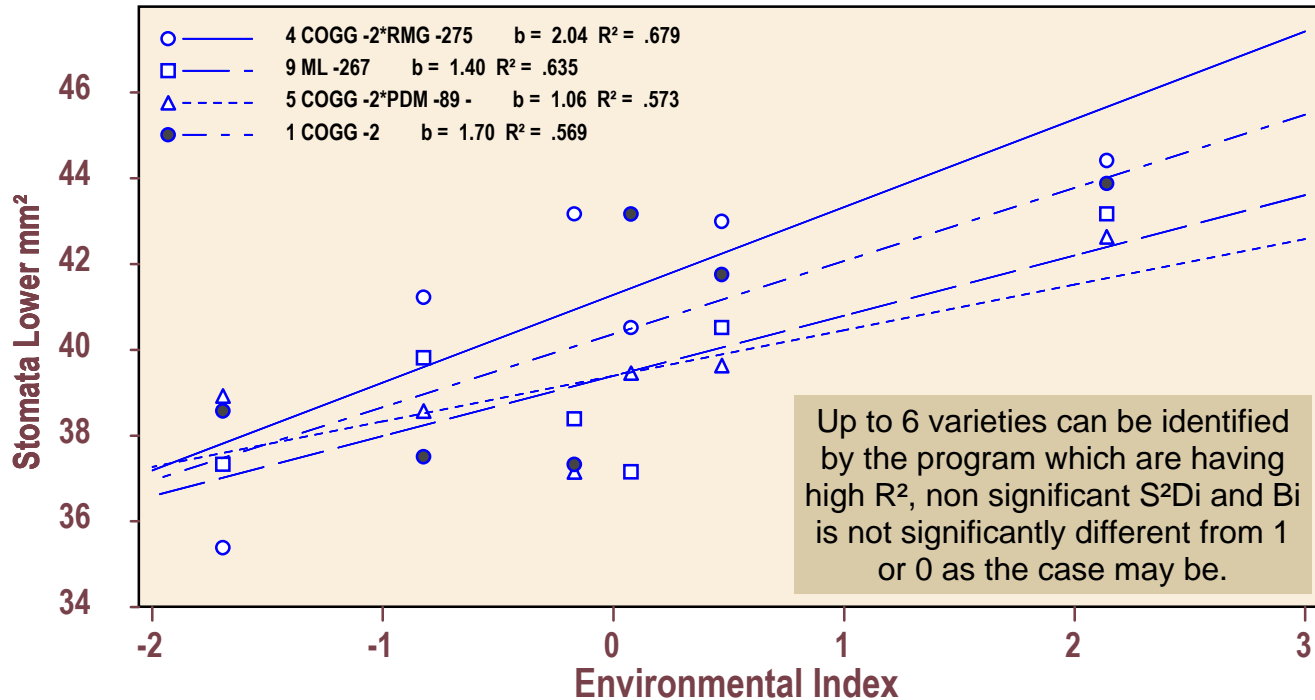
Variety	Env. 1	Env. 2	Env. 3	Env. 4	Env. 5	Env. 6	Gen.μ	S ² Di Rank	β _i Rank		
A COGG -2	41.753	43.877	43.167	38.570	37.327	37.507	40.367	1.660	6	1.705	7
B COGG -2*ML -267	38.570	41.223	42.110	43.880	38.923	40.867	40.929	1.265	4	-0.597	12
C COGG -2*PUSA -1	40.517	45.470	41.400	37.860	36.623	35.913	39.631	1.594	5	2.341	11
D COGG -2*RMG -27	42.990	44.410	40.517	35.383	43.170	41.223	41.282	1.198	3	2.047	8
E COGG -2*PDM -89	39.630	42.637	39.457	38.923	37.153	38.570	39.395	-1.178	2	1.063	1
F COGG -2*LGG -46	41.577	39.630	42.817	37.507	44.233	39.810	40.929	4.018	8	0.456	6
G COGG -2*LGG -41	43.167	38.680	35.917	39.987	45.117	38.570	40.239	11.095	10	-0.157	9
H COGG -2*COGG -2	38.217	44.050	44.230	38.390	39.983	41.047	40.986	2.904	7	1.195	2
I ML -267	40.517	43.170	37.153	37.330	38.390	39.810	39.395	-0.565	1	1.403	4
J ML -267*PUSA -1	41.223	46.000	40.693	36.093	47.240	36.447	41.283	10.023	9	2.599	13
K ML -267*RMG -27	42.813	38.393	44.760	35.913	39.630	49.363	41.812	26.373	13	-0.295	10
L ML -267*PDM -89	36.270	45.117	38.037	41.753	37.680	42.637	40.249	11.260	11	0.513	5
M ML -267*LGG -46	46.000	42.287	37.863	43.523	39.453	34.677	40.634	17.081	12	0.722	3
Environmental Index	0.470	2.139	0.076	-1.694	-0.170	-0.822					
Mean	41.019	42.688	40.625	38.855	40.379	39.726					
C. V.	7.374	6.417	9.206	7.039	7.463	5.347					
F Prob.	0.006	0.002	0.020	0.001	0.000	0.000					
SE of Difference	2.470	2.236	3.054	2.233	2.461	1.734					
CD 95%	5.097	4.616	6.302	4.609	5.078	3.579					
CD 99%	6.907	6.255	8.540	6.246	6.882	4.850					

Stomata Lower mm²



Varieties with hollow dots are to be selected for stability
 Filled dots represents varieties which are having significant S²Di

Stomata Lower mm²



Estimation of Mean and Stability Parameters

Genotypes	Days to Flowering			Stomata Lower mm ²			Peduncle Volume			Spikes/Main Earhead			Grain Yield/Plant g		
	μ Mean	β_i	σ^2_{di}	μ Mean	β_i	σ^2_{di}	μ Mean	β_i	σ^2_{di}	μ Mean	β_i	σ^2_{di}	μ Mean	β_i	σ^2_{di}
1 COGG -2	67.244	0.85	-0.27	40.367	1.70	1.66	3.382	1.85	0.20	17.633	0.97	-0.06	23.837	-0.25	2.96
2 COGG -2*ML -267	69.722	1.12	4.35	40.929	-0.60	1.26	3.051	0.98	0.21	17.789	1.23	0.58	23.941	0.30	-3.48
3 COGG -2*PUSA -1	66.128	0.80	4.06	39.631	2.34	1.59	3.206	0.61	0.01	17.611	0.86	1.49	24.793	1.45	6.33
4 COGG -2*RMG -27	68.900	0.92	7.09	41.282	2.05	1.20	3.313	0.33	0.05	18.389	1.10	1.29	25.164	0.02	9.93
5 COGG -2*PDM -89	67.822	0.98	1.37	39.395	1.06	-1.18	3.438	1.44	0.18	17.689	0.93	0.19	25.275	2.21	22.38
6 COGG -2*LGG -46	70.067	1.01	2.17	40.929	0.46	4.02	3.317	1.27	0.28	18.261	1.16	1.20	23.020	-0.34	24.73
7 COGG -2*LGG -41	68.972	0.91	9.73	40.239	-0.16	11.09	3.125	1.01	0.07	18.194	0.73	0.31	22.223	0.58	4.37
8 COGG -2*COGG -2	68.339	1.05	18.85	40.986	1.20	2.90	3.211	1.20	-0.07	17.478	1.07	1.28	22.423	1.53	-7.84
9 ML -267	69.300	0.88	-2.10	39.395	1.40	-0.57	3.393	0.57	-0.02	17.867	0.90	0.73	22.832	2.46	16.85
10 ML -267*PUSA -1	72.028	1.42	-0.82	41.283	2.60	10.02	3.394	0.83	0.52	18.156	1.34	2.28	20.723	-0.08	-3.37
11 ML -267*RMG -27	70.222	1.28	34.66	41.812	-0.29	26.37	2.799	1.18	0.05	17.333	0.96	1.13	23.597	0.30	11.33
12 ML -267*PDM -89	70.739	0.97	11.49	40.249	0.51	11.26	3.078	0.77	0.09	18.017	1.06	0.42	21.485	2.41	12.90
13 ML -267*LGG -46	67.789	0.81	7.75	40.634	0.72	17.08	3.610	0.95	0.43	17.867	0.68	0.55	24.054	2.41	0.36
Population Mean	69.021			40.549			3.255			17.868			23.336		

Stability Anova (Summary)

	DF	Days to Flowering	Stomata Lower mm ²	Peduncle Volume	Spikes/ Main Earhead	Grain Yield/ Plant g
Rep within Env.	12	7.103	3.681	0.099	0.643	24.051
Varieties	12	15.031	3.442	0.262	0.617	11.552
Env.+ (Var.* Env.)	65	39.978 ***	10.948	0.377	3.827 ***	19.993
Environments	5	398.115 ***	21.776	1.963 ***	36.523 ***	44.280 *
Var.* Env.	60	10.134	10.046	0.245	1.103	17.969
Environments (Lin.)	1	1990.576 ***	108.878 **	9.815 ***	182.613 ***	221.400 ***
Var.* Env.(Lin.)	12	5.105	8.604	0.122	0.500	20.852
Pooled Deviation	52	10.515 ***	9.606 ***	0.255 ***	1.157 ***	15.921 ***
Pooled Error	144	2.604	2.873	0.102	0.250	7.122
Total	77	36.090	9.779	0.359	3.327	18.677