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Research Article

CORRELATION IN BARLEY (*HORDEUM VULGAR L.*) ON SALT AFFECTED SOIL.

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ABSTRACT
Yield is a complex character and is dependent of a number of components studies on the correlation of component characters and their relative contribution are of immense value in the selection of superior genotypes. Correlation measures the mutual relationship between different characters positive correlation indicates that selection on the basis of one character results in the simultaneous improvement in the other trait
In the I year grain yield pr plant showed positive and significant phenotypic association with no. of ear bearing tiller per plant, flag leaf length, second leaf length, second leaf width and no. of grains per spike. Grain yield per plant showed positive genotypic correlation with plant height, no of ear bearing tillers per plant, length of spike, width of flag leaf, length and width of second leaf, peduncle length and grains per spike.
In the II year grain yield positive and significant correlated with plant height, ear bearing tiller per plant, second leaf length, peduncle length, spike length and no of grain/spike days to flowering is an important character for the selection of short duration crops and it showed negative correlation with all the characters at genotypic and phenotypic both level, except number of tillers and other traits.
On the basis of above discussion early flowering with tall plants bearing maximum ear length with higher number of grains/ spike and bold grain are desirable to select out the superior genotypes for the further crop Improvement.

INTRODUCTION
Hordeumvulgare L. is an important cereal crop of India which plays a major role in the barley producing countries? Barley contains beta glucon which reduces blood plasma cholesterol and provides natural care for heart. Presence of digestible and water soluble grain and its easy digestibility is attributed to the fibres vitamins like thiamin and riboflavin, higher biological value and low gluten content (Bade *et al*., 2002) studied 32 winter barley hap loid lines and 3 cultivars in Romania. They reported that starch content had a strong positive correlation with flour content. Production ability had negative correlation with starch and flour content. Zofajova and uzik, (2003) observed significant correlation between height and protein content (r=0.723**). Gulor, (2003) observed positive correlations between beta- glucon and protein content in both years. A negative correlation between beta-glucon content and 1000- grain weight was significant in 1999, while a negative correlation between beta-glucon content and sieve analysis was significant in 2000. He concluded that increased nitrogen is desirable for high grain beta-glucon content in barley but not irrigation. Smiaowski and Bichonski, (2003) observed highly significant positive coefficients of genotypic correlation as well as highly significant direct effect between fine grains extract and malt frafility.
Yadav *et al*., (2004) reported that husk content in barley was significantly and positively correlated with effective tillers per m^2 row length, ear length, number of grains per ear, weight of grains per ear head and test weight, Ozturk *et at.,* (2007) studied six barley cultivars in turkey and observed a significant and positive correlation between grain yield and days to maturity and 1000- grain weight. Schreiber *et al.,* (2009) observed positive correlation with absolute expression levels presumbly on genes coding for protein presentmalt and grain yield, where as protein content was significantly and positively associated with whole nitrogen content. Mohammadi *et al.,* (2006) observed significant correlation of grain yield with peduncle length, extrusion of spike, day to maturity, number of kernels per spike and 1000- kernel weight in both locations. Devaraja and Rajendra, (2006) found that grain yield had positive and significant correlation with

at high levels in addition; the results indicate the presence of a correlation between sequence and expression conservation within the Triticeae.

MATERIALS AND METHODS

The experiment was conducted in two years on saline al kali soil under late sown conditions at the Agricultural research farm of shridurgaji post graduate college, chandeshwar, azamgarh. The material for present investigation were go varieties/strains selected from germplasm available in the Department of genetics and plant breeding Banaras Hindu University, Varanasi. Experiment was conducted in a Randomized block design with three replications. In the experiment row to row spacing was 30 cm and plant to plant was 10 cm.

Statistical Analysis

Correlation co-efficient were calculated from variance and covariance (cov.xy) Components according to the methods given by Panes and Sukhatme, (1967) Following were the formulae and method for the computation of simple correlation co-efficient.

Table 1: Analysis of Covariance

S.No.	Source of variation	Degree of freedom	Sum of product	Mean sum of product (M.S.P.)
1	Black (b)	(b-1)	A	A/(b-1)
2	Treatment(t)	(t-1)	B	B/(t-1)
3	Error	(b-1)(t-1)	C	c/(b-1)(t-1)

Error covariance (cov.^{e}xy) = M.S.P. Error

$$\text{Cov.}^{g}xy = \frac{\text{(M.S.P. Treatment- M.S.P. Error)}}{\text{No.of replications}}$$

Genotypic covariance (cov.^{p}xy)= cov.^{g}xy+cov^{e}.xy

Genotypic correlation coefficient (r^{g}xy)Cov.^{g}xyr^{g} xy =(gx)x(gy)

Where,

gx = Genotypic variance of character x.

gy = Genotypic variance of charactery.

cov.^{g}xy = Genotypic covariance of character x and y.

Phenotypic correlation coefficient (r^{p}xy)

covpxyrpxy=(px)x(py)

Where,

px = Phenotypic variance of character X.

py = phenotypic variance of character Y.

Cov.Pxy = phenotypic covariance of character X and Y.

Test of Significant Of Phenotypic Correlation

Was tested by comparing the correlation coefficients with the table value at "n-2" degree of freedom. Here "n" represent the paired observations i.e. nember of varieties/ genotypes (snedecor, 1931; Hays *et al*., 1955)

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Table2: Estimates of correlation coefficients among different characters in barley (HordeumVulgareL.) in year-1 (2007-08)

S. N.	Source	DF	DM	PH	NTP	NEBT	LFL	WFL	LSL	WSL	PL	LS	LA	NGS	LG	WG	100 GW	GYP
1.	Days to 50% Flowering	r^e	0.724	-0.80	-0.083	-0.170	-0.130	-0.090	-0.071	-0.143	-0.174	-0.042	-0.129	-0.006	-0.226	-0.032	-0.060	-0.034
		r^g	-0.608	-0.50	0.269	-0.045	-0.381	-0.090	-0.601	-0.302	-0.323	-0.088	-0.081	-0.597	-0.089	-0.283	-0.104	-0.622
		r^p	0.603**	-0.052	0.225	-0.056	-0.359**	-0.090	-0.536**	-0.288*	-0.305*	-0.083	-0.084	-0.576**	-0.101	-0.229	-0.102	-0.585**
2.	Days to Maturity		r^e	-0.033	-0.067	-0.11	-0.010	0.014	0.0050	-0.062	-0.136	0.083	-0.075	0.003	0.205	-0.031	0.092	-0.080
			r^g	0.064	0.287	0.016	-0.232	0.046	-0.350	-0.120	-0.141	-0.220	-0.183	-0.567	0.180	-0.152	0.066	-0.643
			r^p	0.050	0.213	-0.007	-0.195	0.041	-0.280*	-0.110	-0.139	-0.167	-0.156	-0.497**	0.108	-0.122	0.067	-0.561**
3.	Plant height			r^e	0.086	0.160	0.117	0.217	0.277	0.108	0.340	0.199	-0.064	-0.011	0.001	0.022	0.074	0.225
				r^g	0.164	0.170	0.144	0.173	0.144	0.240	0.471	0.013	0.040	0.053	0.069	0.019	0.132	0.207
				r^p	0.152	0.168	0.141	0.175	0.159	0.227	0.454**	0.033	0.031	0.050	0.060	0.019	0.128	0.208
4.	Total tillers /plant				r^e	0.468	-0.133	0.069	0.040	-0.057	-0.043	-0.069	0.098	0.153	0.086	0.037	0.005	0.166
					r^g	0.84	-0.218	-0.231	-0.272	-0.268	-0.242	0.044	0.116	-0.297	-0.043	0.214	0.061	-0.011
					r^p	0.776**	-0.204	-0.194	-0.214	-0.235	-0.208	0.026	0.112	-0.257*	-0.020	0.172	0.054	0.008
5.	Ear bearing Tillers /plant					e	0.176	0.212	0.093	-0.016	0.025	0.074	0.205	0.191	0.154	0.133	0.198	0.377
						r^g	-0.057	-0.162	-0.019	-0.085	-0.197	0.186	0.178	-0.027	-0.059	0.235	0.156	0.245
						r^p	-0.027	-0.127	-0.001	-0.076	-0.163	0.170	0.181	-0.016	-0.026	0.211	0.158	0.254*

6.	Length of flag leaf	r^e	0.386	0.306	0.362	0.302	0.225	0.153	0.040	0.037	0.237	0.108	0.107
		r^g	0.678	0.767	0.540	0.199	0.183	-0.023	0.402	0.359	-0.150	0.064	0.343
		r^p	0.652**	0.699**	0.520**	0.212	0.188	-0.004	0.378**	0.315*	-0.078	0.067	0.322*
7.	Width of flag leaf	r^e	0.295	0.279	0.323	0.225	0.123	0.009	0.065	0.202	-0.042	0.216	
		r^g	0.483	0.810	-0.034	-0.031	-0.321	0.348	0.291	-0.358	-0.141	0.064	
		r^p	0.455**	0.766**	0.002	-0.009	-0.288*	0.337**	0.266*	-0.271*	-0.135	0.072	
8.	Length of second leaf	r^e	0.275	0.439	0.371	0.209	0.007	0.041	0.201	0.061	0.089		
		r^g	0.483	0.417	0.330	0.177	0.48	0.249	-0.085	0.154	0.502		
		r^p	0.452**	0.421**	0.336**	0.180	0.440**	0.214	-0.021	0.142	0.452**		
9.	Width of Second leaf	r^e	0.256	0.298	0.142	0.003	0.024	0.026	-0.014	0.055			
		r^g	-0.036	-0.175	-0.433	0.604	0.174	-0.257	-0.224	0.271			
		r^p	0.001	-0.118	-0.374**	0.567**	0.154	-0.201	-0.207	0.254*			
10.	Peduncle Length	r^e	0.348	0.130	-0.006	0.143	0.249	0.097	0.097				
		r^g	0.184	0.446	0.035	0.360	0.172	0.549	0.263				
		r^p	0.207	0.406**	0.032	0.327*	0.186	0.500**	0.245				
11.	Length of Spike	r^e	0.143	-0.059	-0.048	0.125	0.148	-0.003					
		r^g	0.581	0.063	-0.166	-0.139	0.012	0.206					
		r^p	0.53**	0.055	-0.148	-0.086	0.024	0.186					
12.	Length of awn	r^e	-0.117	0.214	0.068	0.035	-0.143						
		r^g	-0.118	-0.084	0.189	0.498	0.261						
		r^p	-0.115	-0.047	0.164	0.462**	0.231						

13.	Number of	r^e	0.115	0.042	0.085	0.450
	Grains/spike	r^g	-0.158	-0.091	-0.279	0690
		r^p	-0.139	-0.074	-0.267*	0.679**
			r^e	0.085	-0.097	0.041
14.	Length of		r^g	-0.003	0.349	-0.108
	grain		r^p	0.016	0.302*	-0.093
				r^e	0.106	0.109
15.	Wight of			r^g	0.572	0.72
	grain			r^p	0.484**	0.239
16.	100-grain				r^e	0.029
	Weight				r^g	0.115
					r^p	0.148

*r^e=Environmental correlation *Significant at 0.05 P level*
*rg=Genotypic correlation **Significant at 0.01 P level*
r^p=Phenotypic correlation

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Table 3: Estimates of correlation coefficients among characters in barley (HordeumVulgare L.) in year-2 (Environment-2) (2008-09)

S. N.	Source	DF	DM	PH	NTP	NEBT	LFL	WFL	LSL	WSL	PL	LS	LA	NGS	LG	WG	100 GW	GYP
1.	Days to 50%	r^e	0.207	-0.066	0.124	0.113	-0.104	0.123	-0.065	0.210	0.068	0.043	0.02	0.166	-0.038	0.083	0.008	0.097
	Flowering	r^g	0.725	-0.086	-0.030	-0.129	-0.016	-0.123	-0.219	-0.072	0.418	-0.070	0.202	-0.449	-0.001	-0.381	-0.020	-0.425
		r^p	0.666**	-0.085	-0.002	-0.092	-0.027	-0.100	-0.201	-0.043	-0.376**	-0.059	0.182	-0.422**	-0.005	-0.285	-0.018	-0.397*
2.	Days to		r^e	-0.039	-0.022	0.072	-0.057	-0.083	-0.030	0.114	-0.095	-0.028	-0.053	-0.063	0.116	-0.020	-0.096	0.031
	Maturity		r^g	-0.004	-0.059	-0.165	-0.016	0.006	-0.229	0.004	-0.340	-0.068	0.247	-0.549	0.066	-0.332	0.051	-0.556
			r^p	-0.008	-0.049	-0.121	-0.022	-0.004	-0.201	0.018	-0.312*	-0.063	0.206	-0.509**	0.072	-0.257*	0.043	-0.508**
3.	Plant height			r^e	0.028	0.094	-0.057	0.231	-0.058	0.170	0.328	0.006	0.089	0.055	0.053	0.137	-0.237	-0.075
				r^g	-0.099	-0.058	-0.120	0.236	0.152	0.346	0.585	0.219	0.150	0.262	0.305	0.195	0.073	0.299
				r^p	-0.073	-0.036	-0.112	0.235	0.130	0.328*	0.564**	0.200	0.143	0.254*	0.278	0.176	0.063	0.282*
4.	Total tillers				r^e	0.768	0.035	0.024	-0.159	0.083	0.150	0.004	0.38	0.126	-0.003	-0.114	-0.005	0.267
	/plant				r^g	0.976	-0.077	-0.063	0.043	-0.187	-0.194	0.155	0.207	-0.009	-0.108	0.013	0.004	0.279
					r^p	0.910**	-0.049	-0.041	-0.002	-0.125	-0.0124	0.120	0.164	0.000	-0.083	-0.029	0.003	0.247
5.	Ear bearing					r^e	0.033	0.101	0.171	0.044	0.095	0.061	0.032	0.149	-0.012	-0.005	0.122	0.280
	Tillers /plant					r^g	-0.091	-0.054	0.043	-0.172	-0.124	0.103	0.147	0.088	-0.106	0.084	0.003	0.372
						r^p	-0.066	-0.030	0.004	-0.134	-0.090	0.095	0.126	0.084	-0.088	0.045	0.008	0.342**

6.	Length of flag leaf	r^e	0.189	0.439	0.083	0.054	0.054	-0.052	-0.024	0.215	0.002	0.056	
		r^g	0.704	0.764	0.472	0.086	-0.001	-0.259	0.311	0.357	-0.120	-0.182	-0.054
		r^p	0.636**	0.714**	0.416**	0.082	0.006	-0.237	0.282*	0.336**	-0.090	-0.163	0.108
7.	Width of flag leaf		r^e	0.113	0.307*	0.233	0.178	-0.002	0.154	-0.066	0.080	-0.062	0.094
			r^g	0.710	0.858	0.297	-0.128	-0.457	0.597	0.397	0.144	-0.133	0.188
			r^p	0.639**	0.797**	0.291*	-0.097	-0.404**	0.569**	0.343**	0.126	-0.128	0.244
8.	Length of second leaf			r^e	0.109	-0.042	0.083	-0.061	-0.053	0.210	-0.022	0.028	0.238
				r^g	0.571	0.365	0.119	-0.230	0.545	0.375	0.077	-0.087	-0.064
				r^p	0.510**	0.318*	0.114	-0.207	0.501**	0.300*	0.049	-0.079	0.528
													0.297*
9.	Width of				r^e	0.035	0.014	0.065	0.013	-0.075	0.004	-0.262	0.019
	Second leaf				r^g	0.338	-0.055	-0.414	0.601	0.304	0.217	-0.157	0.268
					r^p	0.306*	-0.047	-0.352**	0.560**	0.0255*	0.167	-0.156	0.249
10.	Peduncle					r^e	0.200	0.118	0.123	-0.023	0.031	-0.024	0.083
	Length					r^g	0.044	0.045	0.363	0.501	0.221	0.281	0.373
						r^p	0.059	0.053	0.348**	0.443**	0.179	0.266*	0.356**
11.	Length of						r^e	0.258	0.342	-0.243	-0.163	0.024	0.189
	Spike						r^g	0.460	0.138	-0.257	0.073	-0.027	0.282
							r^p	0.436**	0.141	-0.255*	0.0274	-0.025	0.273*
12.	Length of							r^e	0.252	-0.032	0.228	0.067	-0.058
	awn							r^g	-0.456	-0.119	-0.077	0.462	-0.107
								r^p	-0.413**	-0.108	-0.011	0.430**	-0.102

13.	Number of	r^e	0.020	0.044	0.098	0.327
	Grains/spike	r^g	0.040	0.334	-0.239	0.655
		r^p	0.036	0.276*	-0.236	0.649**
			r^e	0.190	0.114	-0.156
14.	Length of		r^g	0.115	0.366	0.064
	grain		r^p	.127	0.343**	0.050
				r^e	0.233	-0.211
15.	Wight of			r^g	0.444	0.141
	grain			r^p	0.377**	0.096
16.	100-grain				r^e	-0.025
	Weight				r^g	-0.084
					r^p	-0.083

*r^e=Environmental correlation *Significant at 0.05 P level*
*rg=Genotypic correlation**Significant at 0.01 P level*
r^p=Phenotypic correlation

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Table 4: Estimates of correlation coefficients pooled over (environments) among different characters of barley (Hordeumvulgare L.)

S. N.	Source	DF	DM	PH	NTP	NEBT	LFL	WFL	LSL	WSL	PL	LS	LA	NGS	LG	WG	100 GW	GYP
1.	Days to 50% Flowering	r^e	0.448	-0.073	0.042	0.007	-0.117	0.026	-0.068	0.053	-0.068	-0.008	-0.057	0.083	-0.131	0.060	-0.037	0.062
		r^g	0.873	-0.072	0.102	-0.255	-0.230	-0.082	-0.467	-0.132	-0.0438	-0.052	0.115	-0.580	-0.090	-0.975	-0.102	-0.706
		r^p	0.783**	-0.072	0.072	-0.178	-0.208	-0.073	-0.386**	-0.111	-0.392**	-0.046	0.095	-0.550**	-0.094	-0.439**	-0.097	-0.656**
2.	Days to Maturity	r^e	-0.036	-0.038	0.008	-0.034	-0.041	-0.013	0.040	-0.115	0.034	-0.034	-0.033	-0.035	-0.025	0.023	-0.027	
		r^g	0.111	0.204	-0.169	-0.254	0.082	-0.413	-0.079	-0.233	-0.110	0.048	-0.697	0.169	-0.632	0.194	-0.729	
		r^p	0.084	0.097	-0.104	-0.198	0.060	-0.300*	-0.054	-0.207	-0.079	0.031	-0.595**	0.122	-0.274	0.163	-0.613**	
3.	Plant height	r^e	0.050	0.115	0.035	0.223	0.131	0.140	0.333**	0.122	0.006	0.022	0.026	0.084	-0.022	0.094		
		r^g	0.287	0.171	0.014	0.240	0.140	0.262	0.512	0.040	0.106	0.129	0.258	-0.041	0.064	0.272		
		r^p	0.186	0.144	0.017	0.239	0.134	0.246	0.486**	0.051	0.092	0.122	0.221	0.006	0.057	0.258*		
4.	Total tillers /plant	r^e	0.682	-0.033	0.040	-0.068	0.034	0.056	-0.029	0.062	0.134	0.032	-0.063	0.000	0.211			
		r^g	0.935	0.035	-0.170	0.120	-0.200	-0.435	0.387	0.445	-0.294	-0.121	-0.688	-0.023	0.206			
		r^p	0.795**	0.007	-0.094	0.035	-0.108	-0.237	0.217	0.280*	-0.175	-0.058	-0.256*	-0.014	0.164			
5.	Ear bearing Tillers /plant	r^e	0.085	0.137	-0.057	0.024	0.059	0.061	0.097	0.160	0.048	0.003	0.135	0.302				
		r^g	0.031	-0.134	0.270	-0.0524	-0.314	0.407	0.325	0.020	-0.188	-0.355	-0.148	0.548				
		r^p	0.048	-0.065	0.145	-0.030	-0.195	0.290*	0.246	0.028	-0.109	-0.124	-0.082	0.438**				
		r^e	0.280	0.364	0.210	0.197	0.155	0.059	0.008	0.125	0.104	0.087	0.036					

6.	Length of flag leaf	r^g	0.828	0.965	0.702	0.284	0.072	-0.409	0.557	0.509	-0.205	-0.292	0.500
		r^p	0.729**	0.802**	0.603**	0.265*	0.088	-0.316*	0.483**	0.424**	-0.042	-0.235	0.429**
			r^e	0.202	0.296	0.274	0.197	0.059	0.089	-0.007	0.128	-0.044	0.199
7.	Width of flag leaf		r^g	0.810	0.990	0.135	-0.190	-0.534	0.604	0.439	-0.018	-0.288	0.262
			r^p	0.678	0.922**	0.151	-0.140	-0.459**	0.574**	0.372**	0.026	-0.268*	0.257*
				r^e	0.188	0.253	0.266	0.094	-0.021	0.118	0.081	0.050	0.027
8.	Length of second leaf			r^g	0.700	0.369	0.210	-0.299	0.686	0.339	0.053	-0.096	0.617
				r^p	0.580**	0.339**	0.219	-0.210	0.569**	0.283*	0.060	-0.071	0.506**
9.	Width of				R^e	0.145	0.162	0.101	0.009	-0.031	0.013	-0.095	0.036
	Second leaf				r^g	0.095	-0.271	-0.588	0..677	0.442	0.078	-0.279	0.379
					r^p	0.103	-0.203	-0.483**	0.620**	0.359**	0.039	-0.258*	0.344**
10.	Peduncle					r^e	0.298	0.125	0.051	0.070	0.135	0.063	0.091
	Length					r^g	0.034	0.276	0.113	0.538	0.432	0.651	0.250
						r^p	0.077	0.252	0.105	0.453**	0.239	0.582**	0.231
11.	Length of						r^e	0.185	0.107	-0.125	-0.011	0.116	0.066
	Spike						r^g	0.566	0.008	-0.313	-0.003	0.033	0.156

		r^p	0.505**	0.012	-0.278*	-0.005	0.041	0.145
12.	Length of	r^e	0.062	0.097	0.152	0.043	-0.107	
	awn	r^g	-0.425	-0.175	0.479	0.749	0.001	
		r^p	-0.385**	-0.127	0.266*	0.669**	-0.008	
13.	Number of	r^e	0.044	0.042	0.083	0.390		
	Grains/spike	r^g	-0.019	0.301	-0.412	0.704		
		r^p	-0.014	0.149	-0.393**	0.692**		
14.	Length of grain	r^e	0.142	-0.028	-0.048			
		r^g	0.275	0.505	0.049			
		r^p	0.175	0.433**	0.038			
15.	Wight of grain	r^e	0.138	-0.055				
		r^g	0.585	0.608				
16.	100-grain Weight	r^p	0.305*	0.277*				
		r^e	0.013					
		r^g	0.039					
		r^p	0.037					

*re = Environmental correlation * Significant at 0.05 P level*
*rg= Genotypic correlation **Significant at 0.01 P level*
rp= Phenotypic correlation

RESULTS AND DISCUSSION

Phenotypic correlation in year I grain yield per plant showed positive and significant association with no of earbaring tiller per plant (r^p=o.254) flag leaf length (r^p = o.322), second leaf length (r^p = 0.452) second leaf width (r^p = 0.254) and no. of grains per spike (r^p = 0.679). Negative and significant association of grain yield was recorded days to flowering (r^p = -0.585) and days to maturely (r^p = -0.561). 585) and days to maturity (r^p = 0.561). 50% flowering was positively correlated with maturity (r^p=0.603) and negatively correlated with flag leaf length (r^p=-0.359), length of second leaf (r^p=-0.536) and other day's to maturity positively correlated with total tiller per plant,

Width of flag leaf, length of grain, 100 grain weight and negatively correlated with flag leaf length (r^p=-0.359) second leaf length (r^p=-0.536) and other. Plant height was positively correlated with peduncle length (r^p= 0.454), No. of tiller per plant positively correlated with ear bearing tillers/ plant (r^p=0.776) while negative and significant with grainear (r^p = - 0.257). ear bearing tiller positively correlated with grain yield/plant (r^p = 0.254) length of flag leaf was positively correlated with width of flag leaf (r^p = 0.652) length of second leaf (r^p=0.699) and other and width of flag leaf was positively correlated with length of flag leaf (r^p = 0.652), length of second leaf (r^p = 0.456) and other and length of second leaf positively with flag leaf length (r^p = 0.699) and other width of second leaf positively correlated with grain/ spike (r^p = 0.567) and other peduncle length was positively correlated with awn length (r^p = 0.406), grain length (r^p = 0.327) and other. Length of spike positively related with no of grain/spike, 100 grain weight and other length of awn positively with 100 grain weight r^p = 0.462) no of grains per spike positively with grain yield (r^p = 0.679), second leaf width (r^p = 0.567) and other. Length of grain positively with 100 grain weight (r^p = 0.303) flag leaf length (r^p = 0.315) and other and width of grain positively and highly correlated with 100 grain weight (r^p=0.484) and 100 grain weight was positively with peduncle length (r^p = 0.500), awn length (r^p = 0.462) and negative correlated with grains per spike (r^p = -0.267)

In the year II grain yield per plant was positively and significant correlated with plant height (r^p = 0.282), earbearing tiller per plant (r^p = 0.342) and other and negatively correlated with days to flowering (r^p = -0.397) positively with days to maturity (r^p = 0.666) and negatively with peduncle length and plant height positively with width of second leafGenotypic correlation in year I grain yield / plant positively correlated with plant height, no of car bearing tiller per plant and other. Days to flowering negative genotypic correlation with most of the character days to maturity showed strong and negative correlation with grain/ spike (r^g = - 0.567) and grain yield/ plant (r^g = - 0.643) and plant height positively with no of total tiller per plant, no. of earbearing tiller per plant, no. of total tiller per plant positively with ear bearing tillers per plant (r^g = 0.841) length of flag leaf positive correlated with flag leaf (r^g = 0.678) second leaf length (r^g =

0.767), width of flag leaf positively with length of second leaf (r^g = 0.483) width of second leaf (r^g=0.810) and other. Length of second leof positively correlated with grain yield per plant (r^g = 0.502), width of second leaf (r^g = 0.483). Width of second leaf positively genotypic correlated with second leaf with grains/spike (r^g = 0.604), width of flag leaf (r^g=0.810) and length of spike positively correlated with awn length (r^g = 0.581) and length of awn positively correlated with grain yield, width of grain and peduncle length. Length of grain positively correlated with 100 grain weight r^g = 0.349), flag leaf length (r^g = 0.359) and width of grain positively correlated with grain width and 100-grain weight (r^g=0.572). 100 grain weight positively correlated with peduncle length (r^g = 0.549) awn length (r^g = 0.498) and in the last in the year I (2007-2008), seed yield was found positively and significantly correlated with number of ear bearing tillers per Plant (r^p = 0.254), length of flag leaf (r^p = 0.322), length of second leaf (rp = 0.452), width of second leaf (r^p = 0.254) and number of grains/spike (r^p = 0.679), Grain yild showed significant and, negative correlation with days to flowing (r^p = 0.585) and days to maturity (r^p = - 0.561).

In the year II (2008 -2009) correlation of seed yield was positive and significant with plant height (r^p = 0.282), no of ear bearing tiller per plant (r^p = 0.382), length of second leaf (r^p = 0.297), peduncle length (r^p = 0.356), length of spike (r^p = 0.273), no of grains /spike (r^p = 0.649). Length of grain and widlth of grain seed yiedle showed negative correlation with days to flowering and days to maturity.

Pooled analysis showed that seed yield was positively and significantly carrelated with number of grains per spike (r^p = 0.692 , rg = 0.704), grain width (r^p = 0.277 , r^g = 0.608) second leaf width (r^p = 0.344, r^g = 0.379 second leaf length (r^p = 0.506 , r^g = 0.617) , flag leaf width (r^p = 0.257, r^g = 0.262), flag leaf length (r^p = 0.429, r^g = 0.500), earbearing tillers (r^p = 0.438, r^g = 0.548), and plant height (r^p = 0.258, rg = 0.272).

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