

**Supplementary Table S2** | ANOVA for combined ABD data from 18 morpho-physiological and yield contributing traits recorded in 96 accessions of bread wheat under non-stressed and heat-stressed environments during two crop seasons of years 2018-19 and 2019-20.

Trait / Source of variation →	Non-stressed Environment				Heat-stressed Environment			
	Year	Genotype	G × Y	Model	Year	Genotype	G × Y	Model
Degree of freedom	1	95	95	191	1	95	95	191
Chlorophyll Content	6.89	39.67**	12.87	26.14**	0.53	44.72**	1.26	22.92**
CTD	191.49**	8.26	7.49	8.47	241.42**	4.44	3.21	5.18
NDVI	0.144**	0.003**	0.002*	0.003**	0.187**	0.008**	0.003**	0.007**
MSI (%)	585.30**	45.12	6.17	28.06	1016.06**	93.24**	5.97	54.17**
Plant Waxiness (0-10 scale)	8.53**	8.03**	0.59	4.35**	0.01	6.03**	0.06	3.03**
Leaf Rolling (0-10 scale)	0.72	3.57**	0.56	2.05**	0.03	3.56**	0.17	1.86**
Days to 50% Anthesis	320.25**	51.69**	6.44	30.34**	277.15**	35.72**	2.92	20.59**
GFD (days)	255.12**	13.46**	2.90	9.92**	484.91**	8.16**	2.26	8.02**
Plant Height (cm)	1252.37**	341.14**	32.67	193.41**	371.49**	309.45**	24.63**	168.12**
Peduncle Length (cm)	26.89	78.09**	7.25	42.68**	171.44**	60.86**	8.66**	36.06**
Flag Leaf Area (cm <sup>2</sup> )	749.86**	157.87**	44.25	104.00**	1736.81**	83.14**	22.88	61.59**
Spike Length (cm)	39.66**	2.87**	0.50	1.97**	1.51*	2.47**	0.67**	1.57**
Spikelets per Spike	2.56	4.52**	1.28	2.90**	0.56	4.63**	0.96	2.78**
Grain Length (mm)	0.72**	0.33**	0.03	0.18**	0.24**	0.32**	0.03**	0.18**
Grain Width (mm)	3.56**	0.08**	0.02	0.07**	3.31**	0.07**	0.02	0.06**
1000-Grain Weight (g)	138.41**	55.58**	11.32*	33.70**	1395.47**	46.04**	11.43	37.05**
Harvest Index (%)	1.91	53.49**	21.30	37.20	33.56	44.40**	20.05	32.36**
Grain Yield per Plot (g)	2600.86	36292.57**	563.68	18341.37**	6215.54	27016.67**	271.41	3598.04**

\*\*, \* significant at 0.01 and 0.05 probability level, respectively.