

1 Supplementary Table 1: List of different blackgram genotypes along with their accession number

2

G. no.	Accession no.	G. no.	Accession no.	G. no.	Accession no.
G1	Ru-7 GP/11	G36	DHL-12 GP/11	G71	DH-10 GP/11
G2	Ru-13 GPB/11	G37	BG Gaz 07	G72	DH-12 GP/11
G3	Ru-75 GP/11	G38	DHL-13 GP/11	G73	DH-13 GP/11
G4	Ru-79 GP/11	G39	BG Gaz 08	G74	DH-14 GP/11
G5	Ru-81 GP/11	G40	DHL-14 GP/11	G75	DH-15 GP/11
G6	Gaz Mash 01	G41	BG Gaz 09	G76	DH-17 GP/11
G7	Ru-85 GP/11	G42	DHL-16 GP/11	G77	DH-18 GP/11
G8	Ru-111 GPB/11	G43	BG Gaz 010	G78	DH-20 GP/11
G9	Ru-115 GPB/11	G44	BBLX-020001-4 GP/11	G79	E-86142 GP/11
G10	RU-126	G45	BBLX-02002-3 GP/11	G80	E-86143 GP/11
G11	Gaz Mash 02	G46	BBLX-02002-8 GP/11	G81	E-86144 GP/11
G12	Ru-127 GPB/11	G47	BBLX-02002-10 GP/11	G82	E-86160 GP/11
G13	BG Gaz 03	G48	BBLX-02003-2 GP/11	G83	E-86161 GP/11
G14	RU130	G49	BBLX-02003-10 GP/11	G84	E-86162 GP/11
G15	RU-162(H)	G50	BG Gaz 11	G85	E-86163 GP/11
G16	Ru-170 GPB/11	G51	BBLX-02004-1 GP/11	G86	BG Gaz 12
G17	Ru-179 GPB/11	G52	BBLX-02004-10 GP/11	G87	E-86165 GP/11
G18	MH-85-5 GPB/11	G53	BBLX-04001-1 GP/11	G88	E-86166 GP/11
G19	BG Gaz 04	G54	BBLX-04002-6 GP/11	G89	E-86167 GP/11
G20	MH-85-41 GPB/11	G55	BBLX-04002-8 GP/11	G90	E-86168 GP/11
G21	MH-85-45 GPB/11	G56	BBLX-04002-9 GP/11	G91	E-86169 GP/11
G22	MH-85-48 GPB/11	G57	BBLX-04002-14 GP/11	G92	E-86170 GP/11
G23	MH-85-50 GPB/11	G58	BBLX-04002-15 GP/11	G93	E-86191 GP/11
G24	MH-85-51 GPB/11	G59	BBLX-04002-19 GP/11	G94	E-86192 GP/11
G25	MH-85-59 GPB/11	G60	BBLX-04003-1 GP/11	G95	E-86193 GP/11
G26	MH-85-69 GPB/11	G61	BBLX-04003-2 GP/11	G96	E-86197 GP/11
G27	MH-85-75 GPB/11	G62	BBLX-04003-6 GP/11	G97	MB-85-71 GP/11
G28	DHL-4 GP/11	G63	BBLX-K2-05001-8 GP/11	G98	MB-85-73 GP/11
G29	DHL-5 GP/11	G64	BBLX-05001-4 GP/11	G99	MB-85-74 GPB/11
G30	BG Gaz 05	G65	BBLX-05001-9 GP/11	G100	Shirajgonj local
G31	BG Gaz 06	G66	BBLX-05002-18 GP/11	G101	Balia Kandi GP/98
G32	DHL-6 GP/11	G67	BBLX-05002-19 GP/11	G102	BARI Mash-1
G33	DHL-7 GP/11	G68	BBLX-05005-6 GP/11	G103	BARI Mash-2
G34	DHL-8 GP/11	G69	DH-4 GP/11	G104	BARI Mash-3
G35	DHL-11 GP/11	G70	DH-5 GP/11	G105	BARI Mash-4

Here, G. = genotype; all the genotypes were collected from Biotechnology division of Bangladesh Agricultural Research Institute (BARI), Gazipur.

3 Supplementary Table 2. Mean performance of 105 blackgram genotypes for 18 quantitative characters across four *Kharif* environments

Genotype	DFrF	DFrF	DFrPM	PH	PL	TLL	TLW	GN	NBP	NCP	NPPC	PodL	NSPP	SPW	BYPP	SYPP	FHTH	TSW
G1	39.0	45.3	56.7	79.98	13.71	8.09	5.62	60	7.2	19.5	2.8	4.27	6.3	0.244	12.766	7.065	32.6	31.481
G2	33.5	37.5	54.9	44.63	9.38	7.77	8.74	57	5.8	17.8	3.4	4.08	5.8	0.329	17.869	10.523	23.2	34.954
G3	40.5	45.6	59.2	65.36	11.46	8.27	5.64	60	7.1	15.7	2.8	4.16	6.1	0.368	15.974	8.164	45.2	32.302
G4	35.0	39.2	53.2	47.76	10.35	7.26	4.57	57	5.8	16.6	3.3	4.21	6.6	0.355	20.659	11.900	32.9	43.438
G5	34.3	36.8	50.6	46.91	9.53	8.13	5.26	58	5.4	19.6	2.8	4.39	5.9	0.337	16.290	8.906	42.7	38.218
G6	36.1	41.2	50.1	58.12	9.74	7.41	4.82	60	5.5	17.0	3.1	4.33	6.0	0.341	18.023	8.729	47.7	40.685
G8	42.5	48.8	62.3	73.20	9.51	7.48	4.61	56	6.3	14.9	2.6	3.76	6.4	0.249	11.163	6.143	83.8	29.198
G7	35.2	38.7	54.4	42.29	10.47	8.13	5.09	58	5.2	21.7	3.3	3.69	6.0	0.271	19.704	9.811	44.4	39.412
G9	35.3	39.1	55.9	39.36	9.02	6.60	4.83	57	5.3	17.3	3.1	4.03	6.0	0.289	13.783	7.123	35.7	36.259
G10	34.3	38.3	58.2	49.11	8.88	7.43	4.74	59	4.8	20.7	2.9	3.94	5.2	0.334	20.376	11.647	36.6	38.889
G11	32.2	37.2	52.1	49.04	9.46	7.51	4.73	57	5.0	22.6	3.0	4.31	5.7	0.297	20.582	11.365	31.5	41.907
G12	31.6	35.7	52.5	42.56	9.56	7.42	4.68	60	6.2	18.7	2.9	4.02	6.1	0.305	15.219	8.436	61.9	39.444
G13	35.9	39.8	55.6	43.15	9.61	8.11	5.32	60	4.9	16.5	2.8	4.03	5.1	0.326	14.784	5.377	47.0	39.572
G14	39.7	47.2	57.1	74.23	13.48	8.09	5.73	59	6.2	19.1	3.3	4.06	5.9	0.281	18.611	10.328	43.7	33.890
G15	41.8	46.3	61.1	78.35	12.32	8.21	5.69	59	6.3	21.9	2.4	3.92	6.4	0.297	16.283	8.121	54.4	33.046
G16	35.3	38.3	58.4	48.91	9.21	7.62	4.58	58	6.5	15.6	3.1	4.41	5.5	0.372	16.974	8.440	30.3	39.320
G17	37.1	46.1	56.4	97.76	12.16	8.14	5.41	58	6.9	21.0	2.7	4.03	5.5	0.212	13.243	7.335	41.9	41.308
G18	36.5	37.8	53.5	48.61	10.81	6.88	4.58	60	6.0	20.9	3.0	4.14	6.2	0.301	19.358	9.617	24.6	40.335
G19	36.6	40.1	55.7	54.70	10.22	7.83	4.80	57	5.1	19.1	2.9	4.06	5.5	0.349	20.680	10.619	43.8	43.135
G20	34.6	39.3	58.2	53.39	10.40	8.71	5.42	54	6.5	20.7	3.1	4.44	5.7	0.326	20.537	11.139	31.9	44.634
G21	35.7	38.2	56.1	63.72	11.30	8.61	5.25	58	6.1	20.4	2.9	4.47	6.0	0.360	18.968	9.166	54.4	43.350
G22	36.3	39.4	54.4	71.28	11.27	7.61	5.24	56	5.8	18.8	2.8	4.36	5.9	0.312	15.870	8.773	25.8	40.376
G23	37.3	39.8	57.6	81.56	11.46	8.84	6.38	60	6.8	19.1	2.9	4.52	6.0	0.333	15.945	8.310	26.3	39.927
G24	35.9	41.5	53.2	74.60	10.87	7.92	5.40	54	6.4	23.7	3.0	4.22	5.6	0.303	22.560	12.686	18.2	43.436
G25	33.6	37.8	56.9	49.51	9.48	7.65	4.83	61	5.9	19.2	2.7	4.41	5.9	0.336	17.944	11.175	30.0	42.527
G26	35.0	39.0	58.4	58.79	11.19	8.51	5.59	57	6.1	18.7	3.1	4.34	6.5	0.373	21.495	11.642	45.1	42.923
G27	36.3	39.2	55.7	68.04	10.41	8.34	5.48	61	5.6	21.1	2.6	4.45	6.1	0.356	18.433	10.022	39.9	38.837
G28	36.0	38.9	58.4	63.25	10.39	8.35	5.94	58	5.8	23.2	2.8	4.50	6.8	0.340	22.605	12.658	37.2	42.506
G29	35.3	39.8	54.7	39.66	9.79	8.05	4.37	57	5.9	18.5	3.1	3.90	5.7	0.328	19.024	10.414	43.3	38.580
G30	34.4	37.8	54.4	58.12	10.11	8.93	5.59	58	5.7	23.7	2.9	4.13	5.8	0.322	22.163	12.485	44.3	46.198
G31	32.0	34.7	51.7	38.40	7.87	6.49	3.82	59	5.1	15.2	3.1	4.08	5.5	0.252	11.636	6.661	53.9	39.016
G32	33.9	36.7	54.2	47.30	10.10	7.91	5.28	59	4.7	15.4	2.9	4.16	6.0	0.335	14.080	7.621	44.5	42.296
G33	33.4	36.3	55.3	51.60	9.05	8.45	5.28	61	4.9	21.1	2.9	4.35	5.6	0.374	21.934	13.100	50.2	45.276
G34	33.0	36.3	52.7	47.69	10.31	8.66	5.46	58	5.2	19.1	3.2	4.30	6.2	0.334	19.784	10.840	56.5	42.332
G35	34.2	37.8	53.9	43.28	9.58	7.97	4.78	59	4.8	21.0	3.2	3.89	6.1	0.260	17.713	11.148	36.3	39.719
G36	33.0	36.8	55.0	47.11	10.37	8.14	5.12	56	4.7	22.6	3.6	3.82	5.9	0.294	23.265	13.810	48.4	41.683
G37	31.0	35.3	52.0	47.84	9.73	7.17	3.76	57	4.8	18.9	3.0	4.10	6.2	0.244	14.122	9.003	53.2	35.701
G38	34.5	38.3	58.2	57.57	10.34	7.05	4.30	61	5.6	18.6	3.7	4.21	6.2	0.279	16.259	10.298	60.8	38.150
G39	37.2	39.4	55.9	50.81	9.21	7.24	4.76	58	4.4	20.3	2.8	4.03	5.7	0.291	16.524	10.091	43.5	38.979

Genotype	DFrF	DFF	DFrPM	PH	PL	TLL	TLW	GN	NBP	NCP	NPPC	PodL	NSPP	SPW	BYPP	SYPP	FHTH	TSW
G40	36.4	39.1	61.5	48.40	9.02	7.14	4.66	56	4.6	17.7	3.5	4.13	6.8	0.309	17.256	11.253	34.2	37.482
G41	34.1	38.4	57.5	48.04	9.25	7.41	4.57	65	5.4	20.2	3.3	4.12	6.1	0.333	22.488	14.246	49.8	44.215
G42	34.4	38.3	59.0	50.26	8.70	6.37	3.83	59	5.5	21.8	3.3	4.12	6.7	0.354	24.327	15.761	40.7	40.070
G43	34.5	37.4	59.9	46.60	8.37	6.94	3.72	61	5.0	19.6	2.8	4.06	5.6	0.325	17.415	10.199	55.8	42.135
G44	35.3	38.5	56.3	51.81	9.10	7.24	4.66	60	5.5	20.6	2.9	3.91	5.4	0.288	17.421	10.218	47.2	41.270
G45	33.1	37.8	55.7	44.83	9.99	7.79	4.96	61	5.0	23.8	3.1	4.26	6.2	0.356	25.418	14.977	40.1	43.344
G46	35.8	38.1	57.5	51.62	11.36	8.38	5.36	65	5.2	21.7	3.7	4.49	6.3	0.362	26.962	16.406	45.1	41.916
G47	31.6	35.7	53.4	44.35	9.62	7.34	4.12	62	4.9	18.2	3.0	4.51	6.4	0.360	18.409	10.356	53.0	39.519
G48	36.0	39.8	54.5	53.46	10.52	7.53	4.23	59	6.0	16.1	3.4	4.48	6.1	0.372	20.645	13.135	42.8	44.465
G49	34.2	38.3	58.4	42.93	8.67	7.68	4.18	56	5.0	18.3	3.2	4.01	6.2	0.342	19.253	11.922	49.8	45.174
G50	34.6	38.2	54.1	47.68	8.33	7.69	4.09	60	5.6	19.7	2.8	4.20	6.2	0.300	16.607	9.454	55.6	32.575
G51	35.8	38.4	54.3	56.35	10.87	8.05	4.86	63	5.8	23.7	2.6	4.54	6.4	0.346	21.357	11.815	44.2	41.222
G52	33.1	37.8	55.9	40.62	10.22	7.80	4.20	61	6.3	21.0	3.0	4.15	5.7	0.318	19.052	11.586	47.2	38.139
G53	33.9	37.7	55.0	41.96	9.13	6.87	4.46	62	6.2	19.7	3.5	4.10	5.5	0.340	21.609	12.661	46.3	37.556
G54	34.5	39.8	60.5	48.86	8.84	7.05	4.14	61	5.3	17.4	3.1	4.38	6.4	0.360	17.373	10.578	48.4	43.894
G55	35.1	39.2	58.7	49.52	9.27	7.23	4.70	62	6.1	16.9	2.8	4.31	6.4	0.266	11.398	6.005	61.3	29.830
G56	35.0	38.8	56.9	49.65	8.67	6.90	4.23	54	6.0	17.0	2.9	4.41	6.5	0.379	17.282	10.799	45.2	37.355
G57	33.6	37.2	54.0	55.01	10.06	7.31	4.72	62	5.3	17.9	3.0	4.68	6.9	0.420	23.064	13.473	57.2	47.118
G58	34.1	38.4	57.9	46.55	10.52	7.53	4.50	63	5.5	19.8	2.8	4.45	6.6	0.360	19.700	11.644	43.5	39.348
G59	34.0	37.7	54.8	48.94	10.18	7.38	4.77	64	5.7	16.8	3.5	4.60	6.8	0.393	21.313	12.983	42.2	42.940
G60	35.9	39.2	57.8	41.38	10.00	6.84	4.06	54	5.8	21.0	3.3	4.10	6.4	0.333	20.988	13.279	47.2	40.506
G61	34.7	37.0	57.0	45.48	9.73	7.75	4.38	61	4.8	16.6	3.0	4.23	6.0	0.317	13.632	7.452	44.1	37.179
G62	35.5	38.1	60.8	52.63	10.13	7.56	4.50	66	5.8	19.4	3.5	4.50	6.7	0.381	22.885	12.365	59.6	39.746
G63	35.6	37.2	58.5	43.04	11.55	8.55	5.21	61	6.5	24.5	3.4	9.21	6.0	0.339	27.352	16.914	37.7	40.991
G64	33.8	36.6	54.3	53.41	9.02	6.84	3.87	57	6.0	17.6	3.1	4.08	6.1	0.351	17.451	10.946	36.6	40.026
G65	35.0	40.5	54.8	46.70	8.20	6.31	3.69	62	6.4	23.7	3.3	4.26	6.3	0.353	26.163	16.268	36.0	40.566
G66	34.3	38.5	52.8	46.81	9.74	7.85	4.36	59	6.5	21.0	3.4	4.35	5.7	0.356	24.409	14.329	46.5	40.262
G67	34.2	38.8	54.7	39.15	8.51	7.40	3.79	59	6.8	14.8	2.8	4.19	6.0	0.364	12.946	8.183	45.4	41.542
G68	35.0	39.3	55.0	45.87	10.16	7.59	4.35	63	7.3	21.9	2.6	4.19	5.9	0.327	19.038	10.708	34.4	37.144
G69	33.7	37.7	54.7	57.90	9.40	9.60	5.10	63	5.9	21.9	2.6	4.40	5.6	0.372	21.112	13.072	32.0	39.187
G70	35.8	38.8	54.1	52.39	9.90	7.43	4.94	62	6.7	20.1	2.7	4.38	5.0	0.375	17.803	9.768	36.4	39.689
G71	35.0	38.8	55.7	40.00	8.67	9.07	5.04	63	5.3	24.7	3.0	4.48	6.6	0.391	27.304	15.644	49.4	41.916
G72	32.5	36.0	53.2	45.53	9.42	8.37	5.26	57	4.8	19.3	3.0	4.43	6.4	0.374	20.286	11.125	61.6	41.391
G73	33.4	37.5	55.5	45.15	7.69	6.15	4.02	57	4.5	18.0	2.6	4.45	6.0	0.368	15.789	8.931	44.4	47.311
G74	33.5	35.9	54.8	46.37	7.63	6.30	4.24	63	5.8	21.4	2.9	4.51	6.2	0.345	20.661	12.480	40.9	42.829
G75	34.5	38.3	57.5	49.33	8.83	8.39	5.12	68	4.9	18.9	3.3	4.12	6.6	0.361	20.240	12.165	53.1	38.720
G76	33.5	37.6	54.4	51.80	8.96	7.98	4.99	63	6.1	25.2	3.0	4.08	6.0	0.342	26.203	14.142	49.6	42.244
G77	34.1	37.1	54.0	45.97	9.90	7.63	4.98	60	5.3	22.9	3.1	4.45	6.5	0.345	23.231	13.427	45.0	44.067
G78	34.0	38.2	55.5	49.63	10.33	8.16	5.38	58	4.5	20.7	3.2	4.29	6.8	0.369	22.651	12.523	41.4	40.745
G79	31.8	36.8	54.3	39.32	9.29	7.08	4.47	54	4.7	12.3	2.5	4.81	6.7	0.392	10.776	7.511	63.9	42.553
G80	31.7	36.8	51.9	54.02	7.99	7.84	5.05	56	4.8	17.1	3.0	4.43	6.0	0.357	17.795	10.201	53.8	40.846

Genotype	DfrF	DFF	DfrPM	PH	PL	TLL	TLW	GN	NBP	NCP	NPPC	PodL	NSPP	SPW	BYPP	SYPP	FH/TH	TSW
G81	36.9	40.9	63.3	49.83	8.95	7.67	5.39	57	5.5	19.5	2.8	4.28	6.1	0.338	17.453	9.451	68.3	42.865
G82	35.0	38.0	64.4	61.31	10.88	8.13	5.07	59	5.1	15.6	2.5	4.49	6.8	0.408	15.215	8.854	36.5	42.421
G83	33.6	36.3	55.1	43.45	9.83	8.50	5.08	61	4.3	20.7	2.6	4.39	6.4	0.397	20.686	13.223	57.3	44.130
G84	33.3	37.3	57.0	47.74	9.21	6.71	4.32	57	4.7	16.5	2.7	4.16	6.8	0.359	14.742	8.769	56.3	43.983
G85	35.3	39.8	57.2	47.38	9.24	7.21	5.49	61	4.7	18.8	2.7	4.62	6.6	0.355	17.672	10.254	65.3	43.938
G86	35.0	39.9	56.8	57.56	9.14	7.85	4.70	57	4.5	19.8	2.4	4.32	5.8	0.413	20.382	11.284	75.2	45.193
G87	36.1	39.8	56.8	67.17	7.66	6.68	4.00	53	5.4	18.6	2.9	4.77	6.5	0.305	14.124	8.178	40.5	42.011
G88	34.9	37.0	55.6	44.28	7.62	6.99	4.29	57	5.4	16.9	2.7	4.66	7.0	0.389	16.233	8.827	63.5	40.679
G89	33.7	37.1	56.1	51.08	8.85	8.23	5.19	57	4.7	18.0	2.7	4.51	6.7	0.325	14.956	8.271	67.6	37.423
G90	35.5	39.7	60.7	59.57	10.83	8.77	5.37	54	5.3	17.8	2.9	4.68	5.5	0.321	15.436	8.755	54.7	37.587
G91	33.0	37.3	54.8	53.53	7.88	6.69	4.14	60	3.6	15.9	2.5	4.04	6.3	0.321	12.548	7.486	79.2	40.188
G92	35.9	39.3	56.3	45.89	7.80	7.04	4.16	56	5.0	17.6	2.6	4.36	5.7	0.339	14.185	7.597	84.1	36.585
G93	40.4	42.7	64.7	78.41	9.47	7.90	4.90	56	5.9	21.5	2.7	3.99	6.2	0.383	21.355	11.168	37.5	44.731
G94	35.5	39.6	57.9	67.34	10.43	8.43	5.14	63	5.0	16.4	2.2	4.60	6.5	0.285	9.998	6.194	78.4	39.350
G95	37.3	40.5	59.6	81.78	9.52	7.25	4.57	60	5.3	22.9	3.1	4.48	6.6	0.340	22.227	13.505	58.2	40.090
G96	35.5	40.0	55.3	86.32	11.09	8.46	5.22	55	5.5	16.7	2.8	4.27	6.6	0.299	12.691	6.934	70.9	35.612
G97	34.9	39.0	65.7	54.41	11.07	7.79	5.15	58	5.6	21.5	3.1	4.32	6.3	0.274	17.204	9.847	64.3	45.928
G98	36.7	38.7	61.1	62.30	10.30	8.29	5.15	60	6.4	22.1	3.1	4.27	5.7	0.321	21.754	11.677	60.2	47.779
G99	36.6	39.8	64.3	61.94	10.64	8.70	5.74	67	5.9	17.5	3.1	4.06	5.7	0.208	10.966	6.676	75.1	48.903
G100	37.3	40.7	58.7	90.85	11.72	6.72	4.68	61	5.9	11.1	2.4	3.61	5.3	0.239	7.063	4.136	47.9	27.247
G101	33.4	38.0	55.3	78.23	10.59	8.52	5.51	55	5.7	18.3	2.7	4.33	5.7	0.364	17.537	10.559	74.3	45.111
G102	34.0	37.5	59.0	43.65	10.84	8.04	4.69	66	5.6	17.3	2.6	4.20	6.4	0.374	16.969	10.256	69.5	43.580
G103	35.0	38.0	58.2	41.51	10.54	8.52	4.25	54	5.8	17.6	3.1	4.38	6.4	0.339	16.981	9.589	76.9	38.007
G104	33.6	37.3	54.7	45.43	9.95	13.15	4.72	58	6.0	16.8	3.0	4.47	6.3	0.394	18.838	10.544	75.8	41.344
G105	34.2	37.9	56.6	46.45	8.91	7.76	4.89	57	5.9	15.7	3.2	4.18	6.7	0.345	15.885	9.655	70.7	46.134

Here, DfrF = days to first flowering, DFF = days to 50% flowering, DfrPM = days to first pod maturity, PH = plant height (cm), PL = petiole length (cm), TLL = terminal leaf length (cm), TLW = terminal leaf width (cm), GN = greenness (SPAD), NBP = number of branch per plant, NCP = number of cluster per plant, NPPC = number of pods per cluster, PodL = pod length (cm), NSPP = number of seeds per pod, SPW = single pod weight (g), BYPP = biological yield per plant (g), SYPP = seed yield per plant (g), FH/TH = % of first harvest over total harvest, TSW = thousand seed weight (g)