

Figure S1. Graphical genotypes of Pusa Basmati 1 near isogenic lines showing recovery of carrier chromosome of *qDTY1.1* (Chromosome 1). The recombinant selection using the nearest flanking marker, RM3825 shows a complete recovery, excepting the target QTL.

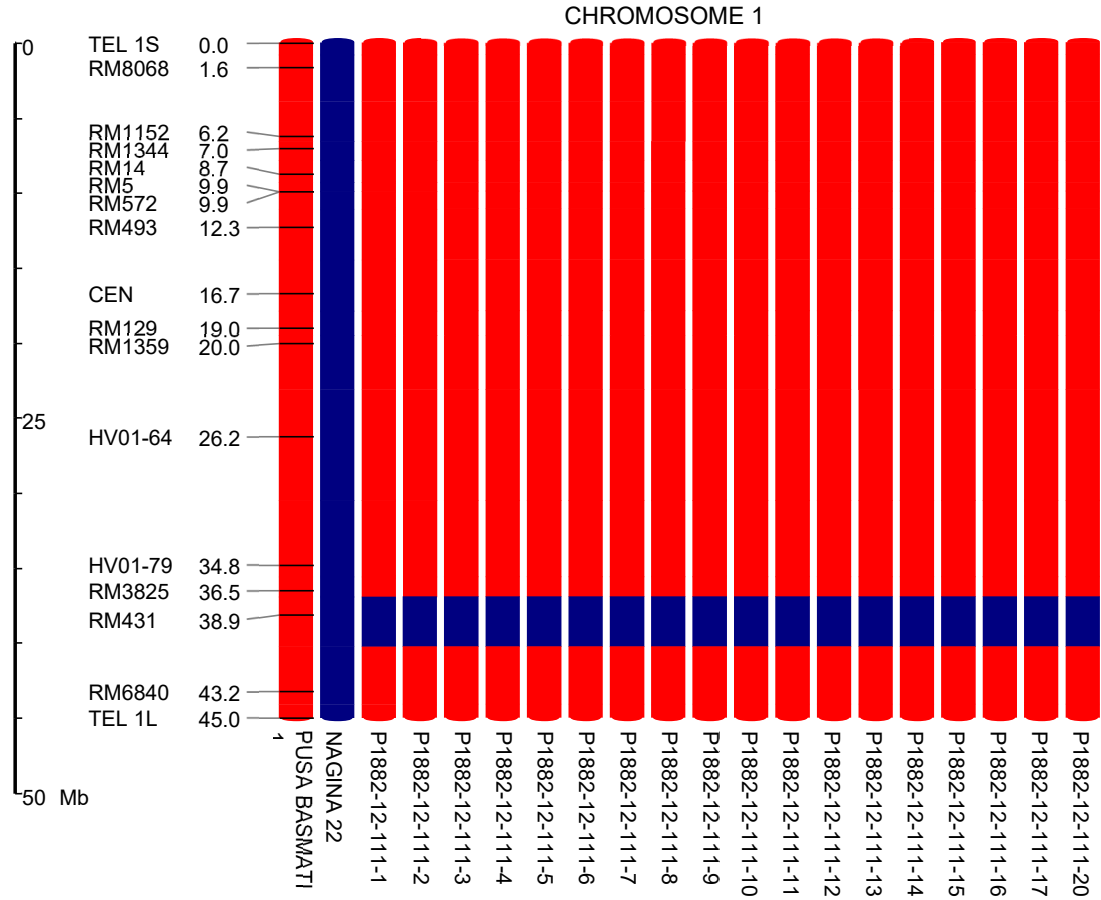


Table S1. List of markers used for foreground and background selection in the present study.

Sl.	Marker	Chrom	Position (Mb)	Forward Marker	Reverse Marker
Foreground Marker					
1	RM431	1	38.89	tcctgcgaactgaagagttg	agagcaaaacctggttcac
Background Marker					
2	RM3825	1	36.46	ccactagcagatgatcacagacg	gagcacctcataagggtttcagc
3	RM14	1	8.67	ccgaggagaggagttcgac	gtgccaatttctcgaaaaa
4	RM5	1	9.87	tgcaactttagctgctcga	gcatccgatcttgatggg
5	RM572	1	9.86	cgcggttaatgtcatctgattgg	ccatactcgagatccaagactgacc
6	RM8068	1	1.65	gtgtcatatgcaagcaacaactcc	agtatgtacgtctctccgttgc
7	RM129	1	19	cactccacgcatctctctcg	ctcagactcggagctcatcttc
8	HV01-64	1	27.83	cgataggctaataatccac	gtagtgggaagatgtgtggt
9	RM1152	1	30.08	tgtctttataccgttcacatcc	tcaaactaaccttctgagagc
10	RM493	1	12.26	gtacgtaaacgcggaaggtgacg	cgacgtacgagatgccgatcc
11	RM1344	1	7.02	aatgttcctgcaatccgagtagg	cacagaatgtgagcattcactcc
12	HV01-79	1	37.91	aatgtatgggaatatcgtgc	tcttcaccacattgctgtta
13	RM6840	1	43.16	cgactggaagaaggatcatgg	cacactaccaagactccgctatgg
14	RM499	1	0.38	ccgtaccaaacaccaactgc	cggccgatcatctaataatctacc
15	RM495	1	0.21	atgatgatggagcagcacaacg	tgaatccaaggtgcagagatgg
16	HV02-68	2	27.05	tgctactcctagctgtctacc	ttacaggcggaatctgtaat
17	RM110	2	1.32	aaattcgaagccatccaccaacg	gccgacgaggtcgagtagaagg
18	RM5460	2	33.79	acaaccacagctgctgaattgc	agaggaaccactgccttgc
19	RM71	2	8.7	ctagaggcgaaaacgagatg	gggtggcgaggttaataatg
20	RM13263	2	18.18	aagattgcacactggtgtctcc	agaagagccggtctttgtctcc
21	RM166	2	34.35	ggtccttggtcaataattgggttacc	ttgctgcatgatcctaaaccgg
22	RM12476	2	2.79	gacgagtgatgtcagcacataaacc	actatccacagcagccattgtcg
23	RM5916	2	34.05	gctataagaatcgtattaag	tactgtattaaagtcagaa
24	HV02-10	2	4.29	gaactggagttgcagatttc	gttcatgatgctgttgcta
25	HV02-80	2	32.69	tgatggatatagagcgacct	aatatgtttcatcaaaccg
26	RM6247	2	5.79	ctcgtctctcatgcatatcagc	tgctctgctctgtctttactcc
27	RM138	2	35.68	agcgcaacaaccaatccatccg	aagaagctgcctttgacgctatgg
28	RM520	3	30.71	acgataacgccgacatcactgg	gctaagcatccacggtttctctcc
29	RM186	3	28.8	tcttccatctctcgcctccg	gggcgtggtggccttctctgc
30	OSR-13	3	7.1	catttgtcgctcacggagta	agccacagcgcccatctctc
31	RM489	3	4.31	gaacaggacacaaatgatgagg	gacgatcggacacctaattacagc
32	RM14639	3	6.94	ataagaggactacgccaacaacacc	atggctggaatccattcttgg
33	RM3864	3	5.82	ttcctccgccgagtcaccc	agaaccgcaagacgaaatcacagc
34	RM55	3	36.41	ccgtcgccgtagtagagaag	tcccggtatttttaaggcg
35	HV03-93	3	36	gactgacttcggtgttcatt	tgcgttcttatatagggt
36	HV03-2	3	1.01	tagcggagttggaataacac	ctgcactgcatacctcataa
37	RG1140	3	13.86	atatgcgcttctctctggt	aaattcacaactctcgctatt
38	HV03-12	3	4.92	ttgtacttcttccctgaaa	gtcaggatgttacaaagcg
39	RM22	3	1.5	ggtttgggagcccataatct	ctgggcttcttctactctgc
40	RM551	4	0.16	cttactccattgggctggaacc	tgtagggtggtgaagatccactcc
41	RM470	4	28.24	ccctcccgtagacctgtaccc	ccacagctaaccaatcttctcc
42	RM1153	4	33.06	tggaggagcgggtgtactcg	ccggtggacctaacaattacgc
43	RM1155	4	20.52	gacagggagtggtgcaactatgc	gatcacagacaatcatgggttgg
44	RM280	4	35.2	gtgctctcatgtcggattatgc	caaggcaacaagattggttagtgg
45	HV04-15	4	11.31	taggtttgggtccttaaatg	gccattcaagcaattgtaa

Sl.	Marker	Chrom	Position (Mb)	Forward Marker	Reverse Marker
46	HV04-21	4	16.41	attctctgttgcctcatt	ccctgtcttgttagtgtcttt
47	NKSSR04-11	4	30.9	ccatcagttgaagggctctc	cttttatggcatgggcaact
48	NKSSR04-19	4	31.26	ctggaatcacaaaccacgac	gctacctcaagctccaagac
49	RM1359	4	20.04	cgacttgccaaggtcaacg	gattctacgggccacaagtcc
50	RM13	5	28.6	tccaacatggcaagagagag	ggtaggcattcgattccag
51	RM31	5	28.61	gatcacgatccactggagct	aagtcattactctctccc
52	RM3476	5	23.76	tgatagttgacaatgcaggagagg	tcgatccggaagtatttctgc
53	RM538	5	25.88	cagtttgacacaagcagcaagc	ctccacagcttgagggaatgc
54	RM122	5	0.31	gagtcgatgtaatgtcatcagtc	gaaggaggtatcgcttggtagc
55	RM7588	5	9.3	gcaatttccgaagcccatacag	gccccgggtacgtgctatgatcc
56	RM18371	5	14.23	gtgtgatgtgtagtgagacc	ctgtggacattggtagatgtgg
57	RM159	5	0.45	atcaacaagatggcctcttacc	gcacccttgaatgacttgg
58	HV05-64	5	27.77	gagtaccctgttccaccata	cacaacaacagcatttcac
59	RM162	6	23.65	ttgttccagttcaggctctgtgc	ccctacaacaccataagaagcaacc
60	RM19268	6	0.81	ctgatttgacgatgagaactacc	cttcatctccttgtgcagaagc
61	RM19291	6	1.21	cacttgacgtgtcctctgtacg	gtgtttcagttcacctgcatcg
62	RM589	6	1.38	gtggcttaaccacatgagaaactacc	tcacatcattaggtggcaatcg
63	HVSSR06-40	6	16.47	ctcttccgtggtaaagaaa	cactgggtatgatctccgact
64	RM469	6	0.56	ttacgtgatcacacaggctctcc	aagctgaacaagccctgaaagg
65	RM527	6	9.87	cggtttgtacgtaagtagcatcagg	tccaatgccaacagctatactcg
66	RM528	6	26.17	ggaggagaaccatatttgcaagg	agcttggaccactttcaactaagc
67	RM21384	7	10.75	ctctcccattgttcaccactcc	aggaggatggaagggcactagc
68	RM5436	7	9.1	tgagctgcacaagacagacaagc	accatttgaacaggatggactgg
69	RM2	7	16.02	acgtgtcaccgcttct	atgtccgggatctcatcg
70	RM7	7	9.83	ttcgccatgaagtctctcg	cctcccatcatttctgtgtt
71	HV7-22	7	7.11	tagctacctcaacaagagc	cccttacctcacatcaccta
72	RM432	7	18.9	ctttctgtctcacgctggattgg	tgcgtacgtgatgaatggtagc
73	RM5499	7	10.02	ggacgaaaggtatttgattgg	cctcaaggtggtctccttctcc
74	RM1132	7	23.93	tcaaggtcgacatgttaggtatgc	aacctatcacctgagaacatcc
75	RM21930	7	24.51	tagctgttgcgatgatgttcg	gctggactccttctgatctctcc
76	RM3691	7	19.17	ccaaatgcctcataatgtgtctgc	tggagggtacaggtagagctgatgg
77	HVSSR7-01	7	0.15	tgtctcaagagacttgatct	gagtaccaattcagcgacat
78	HVSSR7-12	7	2.41	gcctctagctaaacctcaaa	acagtagcagtgaaaggtgct
79	RM21800	7	22	gtgaaattgcctcgctgtaacg	catctaaccctgcttggactgg
80	RM25	8	4.38	ggaaagaatgatcttttcatgg	ctaccatcaaaaccaatgttc
81	RM1308	8	27.89	aaaccaagcatccagtgacc	ggaaccgttcttcatacagtc
82	RM404	8	15.43	ggagcagctaaggcagataagagg	gccttcatgcttcagaagacagc
83	RM80	8	24.47	ctcatctccgcccgtgattcc	gccccatcaacctcgtcttcacc
84	RM5637	8	21.23	ttgcttcctaccttctccttc	gcaccacctctccaactcc
85	HVSSR8-24	8	9.27	cgactacgtacttcttcca	atgaacggagggtgtacttgt
86	RM22832	8	12.17	acgccacacctctcctcatctcc	agatcgatccatgccgctagtgc
87	RM22825	8	11.75	agcacatcacaacctaccctacc	cctaattaatcccggaacc
88	RM22804	8	11.3	ggaccaacctaaagcagtgactcg	ctgaagagcgatcacaagtgtgg
89	RM257	9	17.66	ccgtgcaactaaatccaacagg	ggaatcctatatgagccagtgatgg
90	RM571	9	33.2	ggagggtgaaagcgaatcatg	cctgctgctcttcatcagc
91	RM285	9	20.52	ctgtgggccaatatgtcac	ggcgggtgacatggagaaag
92	HV09-25	9	14.78	gtcgatcgaggagtaaactg	gggtgctactggttgtttct
93	RM3283	10	11.86	agcgggaatcagattgtgacgaactcc	ctcctgcccgatgagcaagtatcg
94	RM467	10	13.04	tgttgtcacatgagatggctatgc	gctgacctgtgagacgtttagacc

Sl.	Marker	Chrom	Position (Mb)	Forward Marker	Reverse Marker
95	RM1937	10	17.48	ttaactcctctgctctgcacaacc	gcgtgtgtgtcttctgtgtaatcg
96	RM258	10	17.57	ctccctggcctttaagctgtcg	gacgaacagcagcagaagagaagc
97	RM304	10	18.21	tcaaaccggcacatataagacc	cgtttagtgtcagcaagataggg
98	RM1812	11	2.39	cctacctccagtgtgagctaac	acgtgcatttgtgtggttagg
99	RM552	11	4.81	cgcagttgtggatttcagtgc	tcatgtcaacgtttgactgtcc
100	RM7226	11	14.51	gcggcgtattagcgtgttac	ccataagggtctagcccatg
101	RM287	11	16.61	ggctacacctacacgcgagaacc	agatgcatggaatgcctgtttgg
102	RM7221	11	26.42	ggatgccacatgtcgatttagg	ctccctccgtttcacaataaagg
103	RM209	11	17.8	atatgagttgctgtcgtgcg	caacttgcatcctccctcc
104	RM26323	11	7.37	acacgccttgacgaggtgtctcc	cgccgtgttcagttacagagg
105	RM2197	11	27.42	agcatgaaagtagcggcagacc	gcttcttctcgtgtgtcatttgg
106	RM144	11	28.17	catgttgtgtgtctactgc	agctagaggagatcagatggtagtgc
107	RM1227	12	27.37	catgacatgtggaccactcc	gcctgagacaagtccatgtagc
108	RM519	12	19.97	aatttccgcgaaatcagcatcc	tcatctggacagtcgaggtacgc
109	RM1261	12	17.57	atggtagagacacaagtccatgc	gacaaattgggtgtaggtgaagg
110	RM1246	12	19.15	ggctcacctcgttctcgatcc	cataaataaataggcgccacacc
111	RM491	12	3.58	cacatgatgcgtagcgagttgc	ttatgcctctccctcccaattcc
112	RM247	12	3.18	aaggcgaactgtcctagtgaagc	caggatgttcttgccaagttgc
113	RM313	12	27.53	tgctacaagtgttcttcaggac	gtcaccttttgtgtccac
114	RM20	12	0.97	tgtatgcacagctgctctactcc	gcacgaccagaaattaacaagg

Chrom, chromosome

Table S2. Agro-morphological parameters indicating the relative performance PB1 NILs and parents under stressed (S) and unstressed (NS) conditions during 2017, 2018 and 2019.

Genotypes	Season	DF		PH		NT		PL		SF	
		S	NS	S	NS	S	NS	S	NS	S	NS
P1882-12-111-1	2017	100.5 ^{b-e}	99.5 ^{a-d}	74.1 ^{cd}	107.5 ^b	9.1 ^{bc}	12.4 ^{a-e}	24.2 ^{bc}	29.0 ^a	52.5 ^{abc}	85.7 ^{a-d}
	2018	109.0 ^a	102.5 ^a	85.1 ^b	112.8 ^c	11.0 ^{abc}	15.4 ^{abc}	23.2 ^a	29.1 ^a	45.4 ^b	82.4 ^{a-d}
	2019	116.0 ^a	109.0 ^a	75.3 ^{ef}	103.8 ^c	15.8 ^a	16.0 ^{ab}	25.0 ^a	28.5 ^a	52.4 ^{de}	72.3 ^f
P1882-12-111-2	2017	99.5 ^{b-e}	97.5 ^{bcd}	70.6 ^{cd}	102.3 ^{bc}	10.6 ^{abc}	12.3 ^{a-e}	28.6 ^a	28.6 ^a	51.5 ^{abc}	90.1 ^{ab}
	2018	101.0 ^{abc}	99.5 ^a	91.4 ^b	107.5 ^c	12.7 ^{abc}	13.9 ^c	25.4 ^a	28.7 ^a	71.1 ^{ab}	82.5 ^{a-d}
	2019	110.0 ^b	105.5 ^a	80.7 ^{cde}	104.9 ^c	13.8 ^a	15.7 ^{ab}	25.7 ^a	28.1 ^a	64.3 ^{a-e}	78.6 ^{c-f}
P1882-12-111-3	2017	98.0 ^{de}	96.0 ^{cd}	70.6 ^{cd}	99.5 ^{bc}	10.6 ^{abc}	11.6 ^{a-e}	26.6 ^{ab}	28.4 ^a	48.7 ^{abc}	91.4 ^{ab}
	2018	101.5 ^{abc}	99.5 ^a	88.2 ^b	108.5 ^c	12.4 ^{abc}	15.4 ^{abc}	25.0 ^a	28.0 ^{ab}	61.9 ^{ab}	79.1 ^{bcd}
	2019	111.5 ^b	105.0 ^a	81.0 ^{cde}	101.6 ^c	12.5 ^{ab}	14.1 ^{ab}	25.4 ^a	28.2 ^a	69.8 ^{a-d}	77.9 ^{def}
P1882-12-111-4	2017	100.5 ^{b-e}	100.5 ^{ab}	73.6 ^{cd}	103.9 ^{bc}	11.2 ^{abc}	11.3 ^{a-e}	26.5 ^{ab}	28.3 ^a	50.3 ^{abc}	86.7 ^{a-d}
	2018	104.0 ^{ab}	104.5 ^a	91.8 ^b	112.0 ^c	12.1 ^{abc}	15.1 ^{bc}	24.8 ^a	28.7 ^a	75.6 ^a	86.4 ^{ab}
	2019	109.5 ^b	108.5 ^a	76.4 ^{ef}	103.8 ^c	11.3 ^{ab}	18.3 ^a	24.6 ^a	27.6 ^{ab}	66.4 ^{a-d}	74.8 ^f
P1882-12-111-5	2017	98.5 ^{cde}	98.5 ^{a-d}	73.1 ^{cd}	100.0 ^{bc}	9.6 ^{abc}	11.1 ^{b-e}	26.4 ^{ab}	29.0 ^a	60.6 ^{ab}	88.1 ^{a-d}
	2018	101.0 ^{abc}	101.5 ^a	89.4 ^b	109.6 ^c	12.0 ^{abc}	14.5 ^c	25.1 ^a	29.7 ^a	62.0 ^{ab}	85.3 ^{abc}
	2019	110.5 ^b	107.5 ^a	79.7 ^{cde}	105.3 ^c	12.2 ^{ab}	16.3 ^{ab}	25.1 ^a	28.3 ^a	72.8 ^{ab}	81.7 ^{b-f}
P1882-12-111-6	2017	97.0 ^e	95.5 ^d	73.4 ^{cd}	102.6 ^{bc}	10.2 ^{abc}	11.6 ^{a-e}	27.2 ^a	28.6 ^a	51.4 ^{abc}	91.1 ^{ab}
	2018	100.5 ^{a-d}	100.5 ^a	87.0 ^b	111.0 ^c	12.7 ^{abc}	15.3 ^{abc}	24.4 ^a	28.7 ^a	54.6 ^{ab}	83.8 ^{a-d}
	2019	109.0 ^b	107.5 ^a	79.5 ^{cde}	104.0 ^c	11.9 ^{ab}	17.1 ^{ab}	24.9 ^a	28.3 ^a	67.2 ^{a-d}	85.3 ^{a-d}
P1882-12-111-7	2017	98.5 ^{cde}	97.5 ^{bcd}	69.9 ^{cd}	102.5 ^{bc}	12.9 ^{ab}	13.6 ^{abc}	28.2 ^a	28.7 ^a	42.4 ^c	87.2 ^{a-d}
	2018	102.0 ^{abc}	101.0 ^a	89.1 ^b	111.4 ^c	14.5 ^a	16.5 ^{abc}	24.8 ^a	29.7 ^a	61.2 ^{ab}	83.9 ^{a-d}
	2019	107.5 ^b	105.0 ^a	86.3 ^c	103.0 ^c	13.1 ^{ab}	16.9 ^{ab}	26.1 ^a	28.8 ^a	69.7 ^{a-d}	83.2 ^{a-d}
P1882-12-111-8	2017	100.5 ^{b-e}	100.5 ^{ab}	70.4 ^{cd}	106.1 ^{bc}	11.1 ^{abc}	12.2 ^{a-e}	27.2 ^a	28.7 ^a	49.1 ^{abc}	83.1 ^{b-e}
	2018	105.0 ^{ab}	100.5 ^a	86.8 ^b	109.0 ^c	12.2 ^{abc}	16.1 ^{abc}	24.5 ^a	28.1 ^{ab}	63.1 ^{ab}	76.6 ^{cd}
	2019	109.5 ^b	107.0 ^a	81.3 ^{cde}	101.9 ^c	13.5 ^a	15.3 ^{ab}	25.2 ^a	28.8 ^a	67.5 ^{a-d}	80.0 ^{c-f}
P1882-12-111-9	2017	102.5 ^{bc}	99.5 ^{a-d}	74.9 ^{cd}	108.6 ^b	8.6 ^c	10.7 ^{b-e}	27.0 ^{ab}	28.8 ^a	48.3 ^{abc}	79.7 ^{de}
	2018	98.5 ^{a-d}	101.5 ^a	90.7 ^b	111.2 ^c	12.9 ^{abc}	14.6 ^{bc}	25.0 ^a	29.2 ^a	64.7 ^{ab}	89.1 ^a
	2019	110.0 ^b	108.0 ^a	75.1 ^{ef}	101.0 ^c	13.3 ^a	16.1 ^{ab}	24.3 ^a	28.2 ^a	65.5 ^{a-e}	80.9 ^{b-f}
P1882-12-111-10	2017	103.5 ^b	99.0 ^{a-d}	74.5 ^{cd}	99.0 ^{bcd}	9.4 ^{abc}	10.4 ^{cde}	27.3 ^a	28.7 ^a	52.5 ^{abc}	79.0 ^{de}
	2018	102.5 ^{abc}	102.0 ^a	86.3 ^b	110.1 ^c	11.6 ^{abc}	14.7 ^{bc}	22.9 ^a	28.7 ^a	71.6 ^{ab}	86.4 ^{ab}
	2019	110.5 ^b	109.0 ^a	75.2 ^{ef}	100.8 ^c	11.7 ^{ab}	17.3 ^{ab}	24.6 ^a	27.8 ^{ab}	65.9 ^{a-d}	83.9 ^{a-e}
P1882-12-111-11	2017	100.0 ^{b-e}	102.0 ^a	73.5 ^{cd}	101.8 ^{bc}	9.2 ^{abc}	13.9 ^{ab}	27.4 ^a	29.1 ^a	49.8 ^{abc}	75.4 ^e
	2018	103.5 ^{ab}	100.0 ^a	85.5 ^b	111.8 ^c	10.6 ^{bc}	18.2 ^{ab}	23.1 ^a	29.9 ^a	52.8 ^{ab}	86.8 ^{ab}
	2019	110.0 ^b	107.5 ^a	77.9 ^{def}	101.1 ^c	12.0 ^{ab}	14.3 ^{ab}	25.4 ^a	29.5 ^a	68.9 ^{a-d}	82.1 ^{b-f}
P1882-12-111-12	2017	99.5 ^{b-e}	99.5 ^{a-d}	76.3 ^{bcd}	101.2 ^{bc}	8.5 ^c	9.7 ^{de}	28.2 ^a	28.6 ^a	54.7 ^{abc}	80.1 ^{cde}
	2018	102.0 ^{abc}	101.0 ^a	88.9 ^b	112.1 ^c	11.6 ^{abc}	16.2 ^{abc}	24.9 ^a	29.5 ^a	62.5 ^{ab}	81.0 ^{a-d}
	2019	108.5 ^b	105.5 ^a	81.4 ^{cde}	105.9 ^c	11.8 ^{ab}	14.3 ^{ab}	24.7 ^a	30.1 ^a	70.2 ^{a-d}	81.1 ^{b-f}
P1882-12-111-13	2017	98.5 ^{cde}	96.5 ^{bcd}	75.8 ^{bcd}	96.2 ^{bcd}	8.1 ^c	10.3 ^{de}	28.7 ^a	27.9 ^a	51.5 ^{abc}	79.1 ^{de}
	2018	104.0 ^{ab}	102.0 ^a	86.7 ^b	114.7 ^c	12.3 ^{abc}	14.8 ^{bc}	24.5 ^a	29.7 ^a	56.0 ^{ab}	84.1 ^{a-d}
	2019	108.5 ^b	106.0 ^a	81.5 ^{cde}	102.3 ^c	11.5 ^{ab}	15.2 ^{ab}	25.8 ^a	29.3 ^a	63.4 ^{b-e}	77.1 ^{def}
P1882-12-111-14	2017	98.5 ^{cde}	96.5 ^{bcd}	74.3 ^{cd}	92.2 ^{cd}	9.9 ^{abc}	11.3 ^{a-e}	27.8 ^a	28.4 ^a	64.8 ^a	89.1 ^{abc}
	2018	102.0 ^{abc}	100.5 ^a	83.1 ^b	107.8 ^c	12.0 ^{abc}	15.8 ^{abc}	23.0 ^a	29.4 ^a	54.2 ^{ab}	81.7 ^{a-d}
	2019	108.5 ^b	105.0 ^a	74.8 ^{ef}	100.2 ^c	11.5 ^{ab}	14.7 ^{ab}	25.6 ^a	28.7 ^a	62.0 ^{cde}	75.9 ^{ef}
P1882-12-111-15	2017	97.5 ^{de}	97.0 ^{bcd}	77.6 ^{bc}	101.2 ^{bc}	9.5 ^{abc}	9.2 ^e	27.5 ^a	29.2 ^a	65.5 ^a	87.7 ^{a-d}
	2018	100.0 ^{a-d}	101.0 ^a	86.5 ^b	109.7 ^c	10.7 ^{bc}	16.9 ^{abc}	22.9 ^a	28.0 ^{ab}	63.4 ^{ab}	74.6 ^d
	2019	109.5 ^b	106.0 ^a	80.4 ^{cde}	101.8 ^c	13.5 ^a	13.2 ^b	25.0 ^a	28.5 ^a	67.5 ^{a-d}	79.2 ^{c-f}
P1882-12-111-16	2017	101.5 ^{bcd}	99.5 ^{a-d}	77.4 ^{bc}	103.8 ^{bc}	9.2 ^{abc}	11.3 ^{a-e}	26.9 ^{ab}	30.0 ^a	57.3 ^{abc}	86.1 ^{a-d}
	2018	101.0 ^{abc}	103.5 ^a	89.1 ^b	110.3 ^c	12.2 ^{abc}	14.6 ^{bc}	23.7 ^a	28.7 ^a	51.8 ^{ab}	80.1 ^{a-d}

Genotypes	Season	DF		PH		NT		PL		SF	
		S	NS	S	NS	S	NS	S	NS	S	NS
P1882-12-111-17	2019	109.0 ^b	108.0 ^a	75.9 ^{ef}	104.1 ^c	11.4 ^{ab}	12.5 ^b	24.4 ^a	29.5 ^a	62.9 ^{b-e}	79.9 ^{c-f}
	2017	99.0 ^{cde}	100.0 ^{abc}	77.4 ^{bc}	105.4 ^{bc}	9.9 ^{abc}	12.8 ^{a-d}	27.4 ^a	29.6 ^a	61.1 ^{ab}	85.7 ^{a-d}
	2018	103.5 ^{ab}	101.5 ^a	89.0 ^b	111.3 ^c	14.2 ^a	18.8 ^a	24.5 ^a	30.2 ^a	55.0 ^{ab}	81.1 ^{a-d}
P1882-12-111-20	2019	109.0 ^b	106.5 ^a	77.9 ^{def}	104.6 ^c	12.1 ^{ab}	13.9 ^{ab}	25.3 ^a	28.9 ^a	74.6 ^a	85.6 ^{abc}
	2017	100.5 ^{b-e}	100.0 ^{abc}	79.4 ^{bc}	103.7 ^{bc}	11.0 ^{abc}	12.3 ^{a-e}	28.4 ^a	28.9 ^a	56.7 ^{abc}	86.7 ^{a-d}
	2018	104.5 ^{ab}	105.0 ^a	85.0 ^b	112.5 ^c	10.3 ^c	15.8 ^{abc}	23.3 ^a	28.7 ^a	61.4 ^{ab}	80.2 ^{a-d}
PB1	2019	109.0 ^b	107.0 ^a	81.5 ^{cde}	102.4 ^c	11.2 ^{ab}	13.3 ^b	26.4 ^a	29.4 ^a	67.1 ^{a-d}	78.3 ^{def}
	2017	97.5 ^{de}	95.5 ^d	70.3 ^{cd}	93.0 ^{cd}	10.3 ^{abc}	11.4 ^{a-e}	26.9 ^{ab}	28.2 ^a	45.9 ^{bc}	76.5 ^e
	2018	100.0 ^{a-d}	101.0 ^a	86.7 ^b	112.9 ^c	12.5 ^{abc}	15.7 ^{abc}	22.7 ^a	29.5 ^a	47.1 ^{ab}	75.2 ^d
N22	2019	109.5 ^b	105.5 ^a	84.2 ^{cd}	105.8 ^c	7.9 ^b	15.8 ^{ab}	26.1 ^a	29.6 ^a	59.6 ^e	81.2 ^{b-f}
	2017	84.5 ^f	84.0 ^e	88.3 ^{ab}	126.1 ^a	13.4 ^a	11.7 ^{a-e}	18.1 ^d	23.4 ^b	61.5 ^{ab}	93.4 ^a
	2018	84.0 ^{de}	82.0 ^b	119.4 ^{ab}	130.3 ^b	13.5 ^c	14.5 ^c	17.0 ^b	23.5 ^c	57.5 ^{ab}	87.0 ^{ab}
IR86918-B-B-305	2019	84.0 ^d	81.0 ^c	101.9 ^b	123.1 ^b	13.3 ^a	16.7 ^{ab}	19.5 ^b	22.1 ^c	68.1 ^{a-d}	84.9 ^{a-d}
	2017	75.5 ^g	74.5 ^f	96.9 ^a	123.5 ^a	11.9 ^{abc}	11.1 ^{b-e}	22.4 ^c	23.3 ^b	53.3 ^{abc}	84.0 ^{b-e}
	2018	80.5 ^e	80.5 ^b	130.6 ^a	153.5 ^a	11.4 ^c	15.8 ^{abc}	20.5 ^a	25.4 ^{bc}	61.9 ^{ab}	83.9 ^{a-d}
IR64	2019	82.5 ^d	81.5 ^c	117.6 ^a	131.6 ^a	13.2 ^a	15.3 ^{ab}	20.8 ^b	24.1 ^{bc}	70.7 ^{abc}	91.4 ^a
	2017	112.5 ^a	87.5 ^e	63.8 ^d	85.0 ^d	10.4 ^{abc}	14.5 ^a	21.7 ^c	22.6 ^b	48.5 ^{abc}	79.4 ^{de}
	2018	90.0 ^{b-e}	86.5 ^b	87.0 ^b	96.8 ^d	12.3 ^c	14.1 ^c	23 ^a	25.7 ^{bc}	66.4 ^{ab}	81.0 ^{a-d}
SE	2019	93.5 ^c	89.0 ^b	71.0 ^f	87.9 ^d	10.7 ^{ab}	14.4 ^{ab}	20.9 ^b	23.4 ^c	67.3 ^{a-e}	87.1 ^{abc}
	2017	1.47	1.36	1.42	1.89	0.29	0.28	0.55	0.44	1.30	1.09
	2018	1.43	1.43	2.41	2.26	0.23	0.26	0.40	0.35	1.62	0.82
LSD (5%)	2019	1.80	1.76	2.14	1.77	0.32	0.31	0.38	0.44	1.00	0.98
	2017	2.08		8.58		3.23		1.41		6.96	
	2018	3.91		2.0		3.67		2.21		9.61	
	2019	2.34		3.69		2.94		1.82		4.63	

DF, days to 50% Flowering; PH, plant height in cm; NT, number of reproductive tillers; PL, panicle length in cm; SF, spikelet fertility %; SE, standard error; LSD, least significant difference

Means followed by same letters are statistically at par based on the least significant difference test at 95% confidence level.

Table S3. Drought tolerance indices and grain yield of PB1 NILs along with checks and parents under stressed and unstressed conditions during 2017, 2018 and 2019.

Genotypes	Year	Grain Yield (Kg/ha)		%R	DYI	STI	SSI
		Stressed	Unstressed				
P1882-12-111-1	2017	645.8 ^{ab}	5803.5 ^a	88.9 ^{ab}	1.57 ^{ab}	0.11 ^a	1.11 ^{ab}
	2018	325.8 ^j	5216.6 ^{c-f}	93.8 ^a	2.79 ^b	0.05 ⁱ	1.17 ^a
	2019	745.4 ^{lm}	5614.8 ^{bc}	86.7 ^a	1.31 ^a	0.13 ^{kl}	1.08 ^{ab}
P1882-12-111-2	2017	581.7 ^{ab}	5933.8 ^a	90.2 ^{ab}	1.78 ^{ab}	0.11 ^a	1.12 ^{ab}
	2018	1300.7 ^{b-g}	5404.5 ^{c-f}	75.9 ^{cde}	0.73 ^b	0.22 ^{b-f}	0.95 ^{cde}
	2019	1389.3 ^{g-j}	5932.8 ^{ab}	76.6 ^{b-f}	0.75 ^{b-g}	0.25 ^{f-i}	0.95 ^{c-f}
P1882-12-111-3	2017	689.8 ^{ab}	5922.1 ^a	88.4 ^{ab}	1.50 ^{ab}	0.13 ^a	1.10 ^{ab}
	2018	1526.2 ^{a-f}	5955.3 ^{bcd}	74.4 ^{cde}	0.68 ^b	0.28 ^{bc}	0.93 ^{cde}
	2019	1671.4 ^{fg}	5953.9 ^{ab}	71.9 ^{f-i}	0.62 ^{e-i}	0.30 ^{ef}	0.90 ^{fgh}
P1882-12-111-4	2017	440.3 ^{ab}	5848.2 ^a	92.5 ^{ab}	2.32 ^{ab}	0.08 ^a	1.15 ^{ab}
	2018	1210.5 ^{b-h}	5023.8 ^{ef}	75.9 ^{cde}	0.72 ^b	0.19 ^{d-g}	0.95 ^{cde}
	2019	1054.1 ^{kl}	5754.7 ^{ab}	81.7 ^{ab}	0.95 ^b	0.19 ^{ik}	1.02 ^{abc}
P1882-12-111-5	2017	598.7 ^{ab}	6355.0 ^a	90.6 ^{ab}	1.85 ^{ab}	0.12 ^a	1.13 ^{ab}
	2018	1497.3 ^{a-f}	5366.1 ^{c-f}	72.1 ^{de}	0.63 ^b	0.25 ^{b-e}	0.90 ^{cde}
	2019	1613.7 ^{fgh}	5798.2 ^{ab}	72.2 ^{e-i}	0.63 ^{e-i}	0.29 ^{efg}	0.90 ^{e-h}
P1882-12-111-6	2017	673.5 ^{ab}	6089.8 ^a	88.9 ^{ab}	1.58 ^{ab}	0.13 ^a	1.11 ^{ab}
	2018	1377.2 ^{b-g}	5548.3 ^{c-f}	75.2 ^{cde}	0.70 ^b	0.23 ^{b-e}	0.94 ^{cde}
	2019	2175.8 ^{cd}	5885.0 ^{ab}	63.0 ^{kl}	0.47 ^{hij}	0.39 ^c	0.79 ^{ij}
P1882-12-111-7	2017	518.4 ^{ab}	5798.9 ^a	91.1 ^{ab}	1.95 ^{ab}	0.09 ^a	1.13 ^{ab}
	2018	1555.2 ^{a-e}	5766.8 ^{b-e}	73.0 ^{cde}	0.65 ^b	0.27 ^{bcd}	0.91 ^{cde}
	2019	2106.2 ^d	6049.7 ^{ab}	65.2 ^{jkl}	0.50 ^{g-j}	0.39 ^c	0.81 ^{ij}
P1882-12-111-8	2017	423.2 ^{ab}	6315.5 ^a	93.3 ^{ab}	2.60 ^{ab}	0.08 ^a	1.16 ^{ab}
	2018	914.2 ^{f-j}	5059.2 ^{ef}	81.9 ^{bcd}	0.97 ^b	0.14 ^{fgh}	1.02 ^{bcd}
	2019	1301.5 ^{h-k}	5594.9 ^{bc}	76.7 ^{b-f}	0.75 ^{b-f}	0.22 ^{g-j}	0.96 ^{c-f}
P1882-12-111-9	2017	504.2 ^{ab}	5541.5 ^a	90.9 ^{ab}	1.92 ^{ab}	0.09 ^a	1.13 ^{ab}
	2018	793.3 ^{g-h}	4733.1 ^f	83.2 ^{a-d}	1.04 ^b	0.11 ^{ghi}	1.04 ^{a-d}
	2019	1123.1 ^{ijk}	5698.7 ^{ab}	80.3 ^{bc}	0.89 ^{bcd}	0.20 ^{ij}	1.00 ^{bcd}
P1882-12-111-10	2017	463.3 ^{ab}	6167.1 ^a	92.5 ^{ab}	2.32 ^{ab}	0.09 ^a	1.15 ^{ab}
	2018	630.0 ^{h-j}	5273.6 ^{c-f}	88.1 ^{ab}	1.46 ^b	0.10 ^{hi}	1.10 ^{ab}
	2019	1084.4 ^{kl}	5855.9 ^{ab}	81.5 ^{ab}	0.94 ^{bc}	0.19 ^{ij}	1.02 ^{a-d}
P1882-12-111-11	2017	666.9 ^{ab}	5947.1 ^a	88.8 ^{ab}	1.56 ^{ab}	0.12 ^a	1.11 ^{ab}
	2018	1150.0 ^{b-i}	5204.3 ^{def}	77.9 ^{bcd}	0.79 ^b	0.18 ^{e-h}	0.97 ^{bcd}
	2019	1550.1 ^{fgh}	5882.9 ^{ab}	73.7 ^{d-h}	0.66 ^{d-i}	0.28 ^{e-h}	0.92 ^{efg}
P1882-12-111-12	2017	859.7 ^{ab}	5939.5 ^a	85.5 ^{ab}	1.21 ^{ab}	0.16 ^a	1.07 ^{ab}
	2018	1109.5 ^{c-i}	5465.2 ^{c-f}	79.7 ^{bcd}	0.86 ^b	0.19 ^{e-h}	0.99 ^{bcd}
	2019	1794.5 ^{ef}	5761.8 ^{ab}	68.9 ^{h-k}	0.56 ^{e-j}	0.32 ^{de}	0.86 ^{ghi}
P1882-12-111-13	2017	541.4 ^{ab}	5892.7 ^a	90.8 ^{ab}	1.90 ^{ab}	0.10 ^a	1.13 ^{ab}
	2018	821.9 ^{g-j}	5083.3 ^{ef}	83.8 ^{abc}	1.08 ^b	0.13 ^{ghi}	1.04 ^{abc}
	2019	1235.3 ^{ijk}	5771.1 ^{ab}	78.6 ^{bcd}	0.82 ^{b-e}	0.22 ^{hij}	0.98 ^{cde}
P1882-12-111-14	2017	942.1 ^{ab}	5999.9 ^a	84.3 ^{ab}	1.11 ^b	0.17 ^a	1.05 ^{ab}
	2018	958.9 ^{e-i}	4982.1 ^{ef}	80.8 ^{bcd}	0.91 ^b	0.15 ^{fgh}	1.01 ^{bcd}
	2019	1249.0 ^{ijk}	5661.8 ^{bc}	77.9 ^{b-e}	0.79 ^{b-e}	0.22 ^{ij}	0.97 ^{c-f}
P1882-12-111-15	2017	797.0 ^{ab}	6094.4 ^a	86.9 ^{ab}	1.33 ^{ab}	0.15 ^a	1.08 ^{ab}
	2018	1136.8 ^{b-i}	5625.9 ^{cde}	79.8 ^{bcd}	0.86 ^b	0.20 ^{c-g}	0.99 ^{bcd}
	2019	1782.5 ^{ef}	5919.5 ^{ab}	69.9 ^{g-j}	0.58 ^{e-j}	0.32 ^{de}	0.87 ^{ghi}
P1882-12-111-16	2017	786.8 ^{ab}	6206.7 ^a	87.3 ^{ab}	1.38 ^{ab}	0.15 ^a	1.09 ^{ab}
	2018	1028.6 ^{d-i}	5631.9 ^{cde}	81.7 ^{bcd}	0.96 ^b	0.18 ^{e-h}	1.02 ^{bcd}

Genotypes	Year	Grain Yield (Kg/ha)		%R	DYL	STI	SSI
		Stressed	Unstressed				
P1882-12-111-17	2019	1052.0 ^{kl}	5976.6 ^{ab}	82.4 ^{ab}	0.99 ^b	0.19 ^{ik}	1.03 ^{abc}
	2017	1007.9 ^{ab}	6136.9 ^a	83.6 ^{ab}	1.06 ^b	0.19 ^a	1.04 ^{ab}
	2018	1654.8 ^{a-d}	6041.5 ^{bc}	72.6 ^{cde}	0.64 ^b	0.31 ^{ab}	0.90 ^{cde}
P1882-12-111-20	2019	2484.8 ^{bc}	6190.4 ^a	59.9 ^l	0.43 ^{ij}	0.47 ^{ab}	0.75 ^j
	2017	1015.6 ^a	5719.4 ^a	82.2 ^b	0.98 ^b	0.18 ^a	1.02 ^b
	2018	867.4 ^{g-j}	5371.3 ^{c-f}	83.9 ^{abc}	1.08 ^b	0.14 ^{fgh}	1.04 ^{abc}
PB1	2019	1432.5 ^{ghi}	5777.5 ^{ab}	75.2 ^{c-g}	0.70 ^{c-h}	0.25 ^{f-i}	0.94 ^{d-g}
	2017	309.9 ^b	5581.7 ^a	94.5 ^a	3.14 ^a	0.05 ^a	1.18 ^a
	2018	573.4 ^{g-j}	5291.7 ^{c-f}	89.2 ^{ab}	1.61 ^b	0.09 ^{hi}	1.11 ^{ab}
Nagina 22	2019	709.8 ^m	5553.5 ^{bc}	87.2 ^a	1.37 ^a	0.12 ^l	1.09 ^a
	2017	926.5 ^{ab}	5458.3 ^a	83.0 ^{ab}	1.03 ^b	0.15 ^a	1.03 ^{ab}
	2018	1795.9 ^{ab}	5033.8 ^{ef}	64.3 ^e	0.49 ^b	0.28 ^{bcd}	0.80 ^e
IR86918-B-B-305	2019	2596.1 ^{ab}	5193.6 ^c	50.0 ^m	0.35 ^j	0.41 ^{bc}	0.62 ^k
	2017	549.5 ^{ab}	4633.2 ^b	88.1 ^{ab}	1.47 ^{ab}	0.08 ^a	1.10 ^{ab}
	2018	1748.7 ^{b-h}	6896.6 ^{ab}	74.6 ^{bcd}	0.69 ^b	0.37 ^{b-e}	0.93 ^{a-d}
IR64	2019	2820.6 ^a	5715.9 ^{ab}	50.7 ^m	0.35 ^j	0.49 ^a	0.63 ^k
	2017	388.0 ^{ab}	5790.6 ^a	93.3 ^a	2.60 ^{ab}	0.07 ^a	1.16 ^a
	2018	1197.0 ^{abc}	6484.6 ^a	81.5 ^{cde}	0.95 ^b	0.24 ^a	1.02 ^{cde}
LSD (0.05)	2019	1981.7 ^{de}	6052.5 ^{ab}	67.3 ^{ijk}	0.53 ^{f-j}	0.37 ^{cd}	0.84 ^{hi}
	2017	704.4	980.9	11.6	1.13	0.13	0.13
	2018	552.6	863.3	11.6	1.40	0.10	0.15
	2019	318.8	541.5	6.2	0.39	0.06	0.09

%R, percentage reduction in yield; DYL, drought yield index; STI, stress tolerance index; SSI, stress susceptibility index. Means followed by same letters are statistically at par based on the least significant difference test at 95% confidence level.