

Supplementary Table 1. List of SSR markers used for parental polymorphism studies between MTU 3626 and BM 71

Sl.No.	CH 1	CH 2	CH 3	CH 4	CH 5	CH 6
1	RM 472	RM250	RM6881	RM280	RM161	RM564
2	RM490	RM251	RM426	RM185	RM162	RM510
3	RM8278	RM138	RM15524	RM252	RM163	RM400
4	RM8368	RM240	RM15539	RM348	RM421	RM5330
5	RM9	RM324	RM15528	RM335	RM5	RM225
6	RM11841	RM211	RM15488	RM281	RM17990	RM253
7	RM11312	RM263	RM15466	RM282	RM18471	RM340
8	RM11069	RM13893	RM520	RM283	RM4674	RM589
9	RM6887	RM7288	RM231	RM284	RM5844	RM3476
10	RM10655	RM12569	RM203	RM16569	RM289	RM2229
11	RM10864	RM6933	RM251	RM261	RM548	RM8101
12	RM84	RM3865	RM7	RM551	RM5454	RM412
13	RM128	RM5430	RM338	RM8213	RM2585	RM20634
14	RM10000	RM8017	RM5924	RM252	RM1182	RM5509
15	RM6464	RM3501	RM489	RM124	RM5592	RM190
16	RM12184	RM5578	RM14434	RM2530	RM18204	
17	RM104	RM13584	RM15583	RM6006	RM3777	
18	RM8135		RM15554	RM5047	RM3853	
19	RM10344		RM15441	RM16433	RM169	
20	RM495		RM15561	RM518	RM2010	
21	RM259		RM15848	RM16266	RM3351	
22	RM237		RM5924	RM17492	RM6024	
23	RM3412			RM3423	RM18384	
24	RM8094			RM3335	RM18004	
25	RM10694			RM7313	RM18608	
26	RM10793			RM3892	RM17780	
27				RM17483	RM18215	
28				RM1667	RM3160	
29					RM18939	
30					RM3529	
31					RM437	
32					RM19199	
33					RM6320	
34					RM3068	
35					RM2998	
36					RM5693	
37					RM18941	
38					RM18919	
39					RM18959	

Sl.No.	CH 7	CH 8	CH 9	CH 10	CH 11	CH 12
1	RM336	RM210	RM122	RM258	RM7443	RM247
2	RM234	RM8271	RM3909	RM222	RM286	RM3455
3	RM2	RM8040	RM5122	RM1240	RM254	RM2972
4	RM6697	RM5485	RM257	RM25648	RM229	RM2844
5	RM4986	RM6032	RM278	RM216	RM4844	RM5338
6	RM5426	RM23099	RM2855	RM5373	RM187	RM6953
7	RM22168	RM8058	RM23877	RM496	RM27186	RM6052
8	RM8033	RM23645	RM524	RM25643	RM6334	RM6037
9	RM320	RM22506	RM3912	RM244	RM26870	RM7018
10	RM7161	RM4153	RM3209	RM484	RM6499	RM3331
11	RM21950	RM23310	RM105	RM6364	RM26459	RM28130
12	RM2191	RM23251	RM23865	RM25809	RM26190	RM1584
13	RM21661	RM44	RM219		RM6440	RM5746
14	RM8044	RM42	RM1099		RM3721	RM313
15	RM21320	RM8019	RM23854		RM26860	RM28731
16	RM134	RM3496	RM23915		RM26616	RM1226
17	RM125	RM502	RM1553		RM6094	RM558
18	RM295	RM344	RM464		RM1233	RM1246
19	RM182	RM404	RM23668		RM5766	RM1296
20	RM8006	RM152	RM23869		RM332	RM28073
21	RM1335	RM8266	RM23788		RM4069	RM28759
22	RM418	RM1235	RM5515		RM6293	RM17
23	RM455	RM3215	RM24336		RM26182	RM28102
24	RM1048	RM2910	RM23800		RM26440	RM27520
25	RM500	RM264	RM5899		RM25982	RM6296
26		RM23146	RM24791		RM27373	RM101
27		RM22891	RM23916		RM3701	RM2854
28		RM5485	RM23998		RM26187	RM6265
29		RM22230	RM553		RM202	RM3483
30					RM27369	RM6396
31					RM552	RM4552
32					RM224	RM2529
33					RM5926	
34					RM26658	
35					RM144	
36					RM3701	
37					RM26187	

Supplementary Table 2. Scoring criteria of BPH screening

Score	Criteria	Reaction
0	No injury	Immune (I)
1	Very slight injury	Highly resistant (HR)
3	First and 2 nd leaves of most plants partially yellowing	Resistant (R)
5	Pronounced yellowing and stunting or about 10-25% of the plants wilting or dead and remaining plants severely stunted or dying	Moderately resistant (MR)
7	More than half of the plants wilting or drying	Moderately susceptible (MS)
9	All plants dead	Susceptible (S)

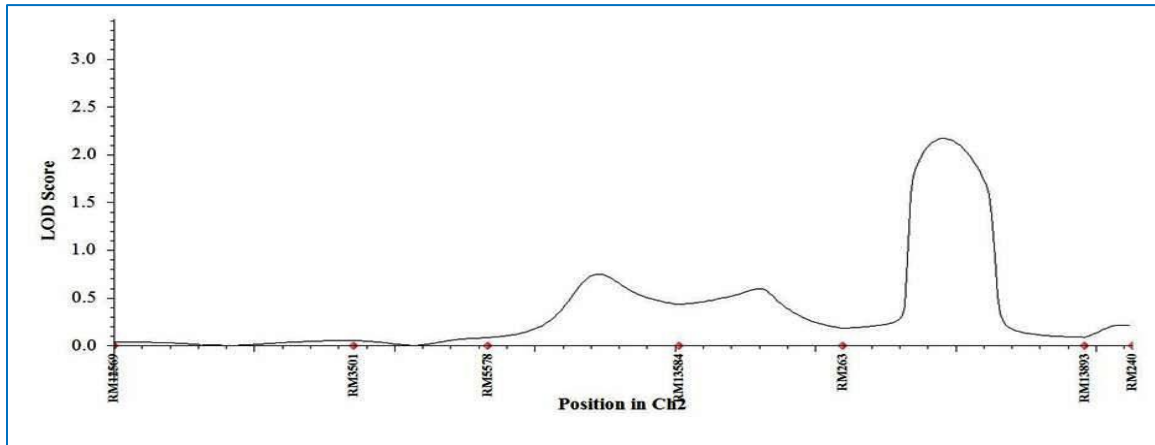
Supplementary Table 3. Polymorphic markers between MTU 3626 and BM 71 with their physical positions (Mbp) on respective chromosomes

SL. No.	Marker Name	Ch. No	Position	S. No	Marker Name	Ch. No	Position
1	RM6887	1	0.20	40	RM3160	5	19.98
2	RM495	1	0.21	41	RM18959	5	25.16
3	RM3412	1	11.58	42	RM589	6	1.38
4	RM10793	1	12.56	43	RM190	6	1.76
5	RM11069	1	19.37	44	RM225	6	3.41
6	RM8278	1	23.81	45	RM253	6	5.42
7	RM472	1	37.88	46	RM400	6	28.43
8	RM12569	2	4.28	47	RM340	6	28.59
9	RM3501	2	10.18	48	RM500	7	15.91
10	RM5578	2	18.73	49	RM336	7	21.87
11	RM13584	2	23.90	50	RM8044	7	24.19
12	RM263	2	25.86	51	RM234	7	25.47
13	RM13893	2	29.72	52	RM134	7	26.63
14	RM240	2	31.49	53	RM1335	7	28.29
15	RM231	3	2.45	54	RM152	8	0.68
16	RM14434	3	3.43	55	RM23146	8	20.66
17	RM7	3	9.82	56	RM3496	8	27.53
18	RM251	3	9.94	57	RM8266	8	28.44
19	RM15466	3	23.57	58	RM23877	9	6.40
20	RM15488	3	23.81	59	RM5515	9	7.09
21	RM15524	3	24.34	60	RM524	9	12.92
22	RM15528	3	24.41	61	RM24336	9	15.10
23	RM15539	3	24.58	62	RM244	10	5.00
24	RM426	3	27.58	63	RM5373	10	18.72
25	RM203	3	29.16	64	RM25648	10	18.77
26	RM551	4	0.17	65	RM484	10	21.06
27	RM8213	4	4.44	66	RM222	10	23.20
28	RM16433	4	4.62	67	RM202	11	9.00
29	RM261	4	6.57	68	RM26870	11	19.41
30	RM16569	4	9.66	69	RM206	11	22.01
31	RM185	4	18.57	70	RM5766	11	28.24
32	RM252	4	35.50	71	RM27373	11	28.25
33	RM3529	5	0.11	72	RM7102	12	13.21
34	RM17990	5	4.68	73	RM28130	12	16.70
35	RM18004	5	5.03	74	RM6396	12	25.03
36	RM169	5	7.49	75	RM28759	12	26.44
37	RM18384	5	14.78	76	RM4552	12	26.94
38	RM6024	5	17.75	77	RM1226	12	27.31
39	RM163	5	19.18				

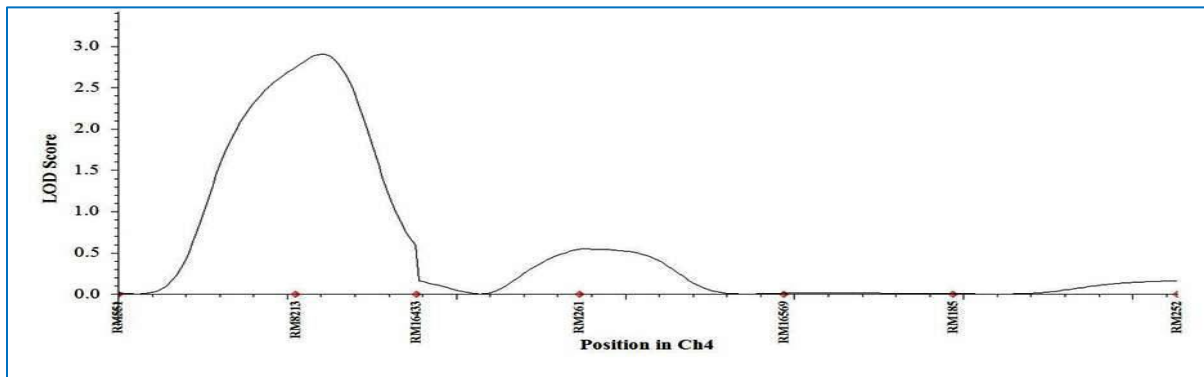
Supplementary Table 4. Respective flanking markers of five QTLs identified with their positions and sequence

Sl.No	QTL Name	Marker interval	Ch. No.	Position	Forward primer	Reverse primer
1	<i>Qmbph 2.1</i>	RM263	2	25.86	AATCTATGGACCTGGGAGGAACC	TGACGAGAGTGCTACGTTTGAGC
		RM13893	2	29.72	CAGTCTCATTTGATGCAGTGACG	CCTCTACCTATATGATGCACAACACG
2	<i>Qmbph 4.1</i>	RM8213	4	4.44	TGTTGGGTGGGTAAAGTAGATGC	CCCAGTGATACAAAGATGAGTTGG
		RM16433	4	4.62	TTGCAAGTCTAAAGAGGGAGTGG	GTAGAGCCCATCTACCTAATTACCG
3	<i>Qmbph 12.1</i>	RM4552	12	26.94	GTTGAGTGATGTAGGACGGACACAGC	AGAGTTAGGCCAATTCGACGATGG
		RM1226	12	27.31	TCATCTTGTTGCTTGTGTCTCC	GCTACCACCACACATCCTTACTCG
4	<i>Qmbph 5.1</i>	RM163	5	19.18	ATCCATGTGCGCCTTTATGAGGA	CGCTACCTCCTTCACTTACTAGT
		RM3160	5	19.98	GTGAGGTGGGATGGAAATTAGG	ACTTCCTTTGGCCATTAACC
5	<i>Qmbph 7.1</i>	RM500	7	15.91	AGAAGTGCAGTTGGCTCTGC	CACGAATCTCGGAGTGTCTAGGG
		RM336	7	21.87	GTATCTTACAGAGAAACGGCATCG	GGTTTGTTCAGTTTCGTCTATCC

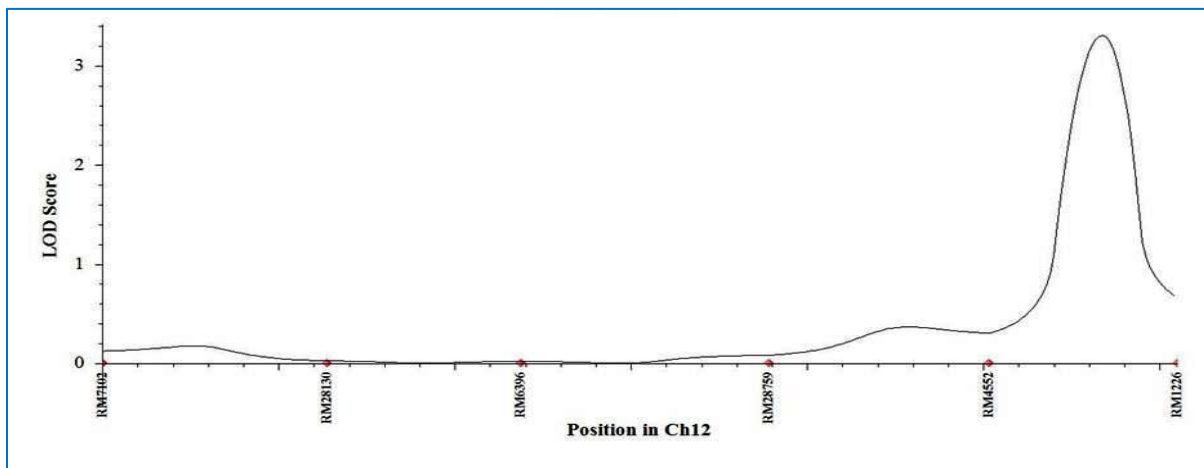
Supplementary Fig. 1. Novel QTLs identified on Ch2, Ch4 and Ch12 for BPH tolerance



LOD curve of composite interval mapping of ch.2 for BPH tolerance QTL *qmbph2.1*



LOD curve of composite interval mapping of ch.4 for BPH tolerance QTL *qmbph4*.



LOD curve of composite interval mapping of ch.12 for BPH tolerance QTL *qmbph12.1*

Supplementary Fig. 2. Linkage map construction for 12 chromosomes

