

Introgression of low phytic acid locus (*lpa2-2*) into an elite Maize (*Zea mays* L.) inbred through marker assisted backcross breeding

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Supplementary Table 1. List of background SSR markers and their chromosomal location.

S.No.	Chr	Marker	Forward primer (5' to 3')	Reverse primer (5' to 3')
1	1	bnlg1803*	GTATGCGTCGCTAGTCGTGA	TGTTGTCTATTGGCAACCGA
2		umc2083	CAGGTGGTACGCCATGAACC	GATGCTCAAGGAGCAGCGAC
3		umc1396	TTCGATTATTCCATTGAGCCTCTG	CTCCTAACGCAGGAGACAAGAGAG
4		umc2100	TGACGTGCAAACAACCTTCATTAC	AAAGGCATTATGCTCACGTTGATT
5		umc1737	ATGCTTCTCTCAGAAGCCATCC	TAGCTAGGTAGTGATGTGCGTGCT
6		bnlg1014	CACGCTGTTTCAGACAGGAA	CGCCTGTGATTGCACTACAC
7	2	phi251315	CCAGTCCAATGGAGAGGG	GAGATTCCCCTGCAGGACT
8		umc1535	GGCAGAGAGATGAAAAAGAATGGA	CAAGGCACCCACACACATACATA
9		umc1704	TTCACCGGGTAGTCCTTCTTACTG	AAGTACGCTGTACGCAGGCAG
10		phi083	CAAACATCAGCCAGAGACAAGGAC	ATTCATCGACGCGTCACAGTCTACT
11		umc1185	AGTAAAAGAGGCAAGGACTACGGC	GCGGCGATATATACGAGGTTGT
12		umc1552	CTCGATAGCTCTGCTGCTTCCTC	CAACACCAGCCCTACCCAGA
13	3	umc2258	GAGGAGGAGAGGGACAGGGAAG	GGCTCGACTTCGAGGACACC
14		umc1273	AAACACCAAACGTCACGTGG	GGCGACGAGATACAGGATGT
15		umc2002	TGACCTCAACTCAGAATGCTGTTG	CACAAAATCCTCGAGTTCTTGATTG
16		umc2050	CTCCTGCTGTGATTCTAGGACGA	CTGGATCTCGGCATGGTCTT
17		umc1717	ACGACGAATTCATAACACAACGA	TTATCAGAGGAAGGGTTACGTTGG

18		umc1404*	GTTGGCCTTCCTCTCTACCCC	CCAGTTCATCAGGTCATCAACCTT
19	4	umc1775	GAGGACAACGCTGCTATTCTCG	GGAACTCCGTCAAAATCCCATC
20		umc2137	CACTTGGGTTGTTCCACAGGAG	ACCACTGCAACCTAGAGCTGTACC
21		dupssr34	TCAGTGCTTTCATTGTAACGA	ATAAACATCTTGCCAGCAAA
22		umc2360	CAGATCGGACTACTGGTGGCTAAG	TAGCAGCTAGCTTCAGTCACAGGC
23	5	umc 1373	ATGATGATGACGACGACGAAGAT	CGTCAGGTCTGTTGCATATCTGTT
24		umc 1597	ACAACCGCTGCGTAAACGAAT	AGAGATTAGGCGAGCGAGGG
25		umc2373	TATGGTACAGGCACAGCAGCAGTA	ACCCAAGTGAGGTGAAGTGAAGC
26		phi113	GCTCCAGGTCCGAGATGTGA	CACAACACATCCAGTGACCAGAGT
27		phi 087	GAGAGGAGGTGTTGTTTGACACAC	ACAACCGGACAAGTCAGCAGATTG
28	6	nc 012	TAATTTAAACACCACACCACCG	ACACACGCCAAAAGAAAAACC
29		umc 1257	CAACGGAAGTGGCTGTAGAGTTTT	ACAGAGCATGTCAGGTATTTGCAG
30		phi36	TAAGCAAAGCAAGGCAACC	TCGCCTCACTCTCACACTCC
31		umc 2375	TCTGACATTGTCCTCTTGACAAA	GCCGTACTIONGATGTGATGGTCC
32		Phi025	GCAACATCCTGGAGAGCCACTACAAGG	ACAGCCTGTTTTCTGGACAGTGAACTC
33		umc 1376	GAGGACGAGGAGGAAGACGAGAT	CATGGGAACGTGCTCCACAC
34		umc 1795	CCCTCTCTCCTAGGTTTCATCGTT	CAGCGGCGTCTTGAAGAGTAG
35	7	phi 034	TAGCGACAGGATGGCCTCTTCT	GGGGAGCACGCCTTCGTCT
36		umc 1412	GCATCTGTAGCCTTTTTGTGTGTG	CTCAGCTTGCAGGTTATCGCTT
37		umc 1545	GAAAACATGCATCAACAACAAGCTG	ATTGGTTGGTTCTTGCTTCCATTA
38		umc 2334	CATCTGATGGTGTGTAGCAGCAG	ATGGCCTCCGTGCTGAAGAT
39		umc 2332*	GTCGGAGAAGGAGCTACTGAGCTA	CACAGGTACGTCTGGATGCTGT
40	8	umc 1172	CTCCTCCATCCAACACTGAACC	ATGAAGCAGAGGCAGTCTTTCTTG
41		umc 2042	GCAGTCTCTCCACTACCAGAGCAT	AACAGAGGAGTACGAGGAGGAGC
42		umc 2355	CGGGTTGTTGTTGGAGTAGGAC	CTACTCCCCGAAGCCGTCTAAG
43	9	umc 2089	GCCAGCTCTACGGCCTATGAC	CAGGAAGAGGAAGAAGGGTCTC
44		umc 1596	CGGCGAGGATAACATGCAGTA	TCTTGAGCTGAACACTGATCTTGG

45		umc 2393	CTCTTGGTTGTTTGTTCCTTGCT	CAACTCGATCCAGACCACACATAG
46		umc 2089	GCCAGCTCTACGGCCTATGAC	CAGGAAGAGGAAGAAGGGTCCTC
47		umc 2133*	ATGCTCAAGCTCAACAGCACTTC	TTCAGGTGTGCACTGACTCTGACT
48	10	bnlg 1518	AGCTGTACACGCAGTAGGCA	GGCTCTGTTAATTCGATCGC
49		umc 1381	CTCTAGCTACGAGCCTACGAGCA	CCGTCGAGTCAACTAGAGAAAGGA
50		umc 1312	AAAGTTACTGCTGCCAAAGCTGTC	AGATCGAGCGGTGGATATGGT
51		umc 1477	GAAGCCGCAGAACATCCTCTT	AAGCTGTACACGTCGCCTTCC
52		umc 1318	ACTTCGTCTAGTGTCCCTCCGTT	TGCCAGATTAAGCAACACAAGA

*asterisks indicate the markers that were not successful in PCR

Supplementary Table 2. Marker allele constitution for parents and lpa2 locus introgressed BC₂F₂ lines for background markers.

S.No	MARKER	CHR	UMI 285	EC659418	Low phytate line 1 (S1-28-9)	Low phytate line 2 (S1-28-44)	Low phytate line 3 (S1-31-16)	Low phytate line 4 (S1-31-26)
1	bnlg1803	1	A A	B B	A A	A A	A A	A A
2	umc2083	1	A A	B B	A A	A A	B B	A A
3	umc1396	1	A A	B B	A A	A A	A A	B B
4	umc2100	1	A A	B B	A A	A A	A A	A A
5	umc1737	1	A A	B B	B B	B B	A A	A A
6	phi251315	2	A A	B B	A A	A A	A A	A A
7	umc1535	2	A A	B B	B B	A B	A B	A B
8	umc1704	2	A A	B B	A A	B B	A A	A A
9	phi083	2	A A	B B	A A	A A	A A	A A
10	umc1185	2	A A	B B	A A	A A	A A	A A
11	umc2258	3	A A	B B	A A	A A	A A	A A
12	umc1273	3	A A	B B	A B	A A	A A	A A
13	umc2002	3	A A	B B	A A	A A	A A	B B
14	umc2050	3	A A	B B	A A	A A	A A	A A
15	umc1717	3	A A	B B	A A	A A	A A	A A
16	umc1775	4	A A	B B	A A	A A	A A	A A
17	umc2137	4	A A	B B	A A	A A	A A	A A
18	dupssr34	4	A A	B B	A A	A A	A A	A A
19	umc2360	4	A A	B B	A A	A A	A A	A A
20	umc1373	5	A A	B B	A A	A A	A A	A A
21	umc1597	5	A A	B B	A B	B B	A A	A A
22	umc2373	5	A A	B B	A B	A A	A A	A A
23	phi113	5	A A	B B	A A	A A	A A	A A
24	phi 087	5	A A	B B	A A	A A	A A	B B
25	nc 012	6	A A	B B	A A	A A	B B	B B

26	umc1257	6	A A	B B	A A	A A	A A	A A
27	phi36	6	A A	B B	A A	A A	A A	A A
28	umc2375	6	A A	B B	A A	A A	A A	A A
29	phi 025	6	A A	B B	A A	A A	A A	A A
30	umc1376	6	A A	B B	A A	A A	A A	A A
31	umc1795	6	A A	B B	A A	A A	A A	A A
32	phi034	7	A A	B B	A A	A B	A A	A A
33	umc1412	7	A A	B B	A A	A A	A A	A A
34	umc1545	7	A A	B B	A A	A A	A A	A A
35	umc2334	7	A A	B B	A A	A B	A B	A A
36	umc1172	8	A A	B B	B B	A A	A A	A A
37	umc2042	8	A A	B B	B B	A A	B B	B B
38	umc2355	8	A A	B B	A A	B B	A A	B B
39	umc2089	9	A A	B B	A A	A A	A A	A A
40	umc1596	9	A A	B B	A A	A A	A B	A A
41	umc2393	9	A A	B B	A B	A A	A B	A B
42	umc2089	9	A A	B B	A A	A A	A A	B B
43	bnlg1518	10	A A	B B	A A	A A	A A	A A
44	umc1381	10	A A	B B	A A	A A	A A	A A
45	umc1312	10	A A	B B	A A	A A	A A	A A
46	umc1477	10	A A	B B	B B	B B	B B	A A
47	umc1318	10	A A	B B	A A	A A	B B	B B

*AA denotes the alleles of respective background marker observed in the recurrent parent.

**BB denotes the alleles of respective background marker observed in donor parent.