

Multi-environment evaluation and genetic characterisation of common bean breeding lines for organic farming systems

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Supplementary Materials

Table S1. List of SSR markers used for the genotyping.

Marker name	LG ^a	Primer sequence (5'-3')	AT ^b	References
<i>Genomic markers</i>				
BM200	b01	for: TGGTGGTTGTTATGGGAGAAG rev: ATTTGTCTCTGTCTATTCCTTCCAC	58	[1]
BMb356	b01	for: TCCGAATTTCTTAATTTCACTT rev: ATCGCGGATTTATATGTGTC	55	[2]
GATS91	b02	for: GAGTGCGGAAGCGAGTAGAG rev: TCCGTGTTCTCTGTCTGTG	58	[1]
BM156	b02	for: CTTGTTCCACCTCCCATCATAGC rev: TGCTTGCATCTCAGCCAGAATC	58	[1]
AG01	b03	for: CATGCAGAGGAAGCAGAGTG rev: GAGCGTCGTCGTTTCGAT	58	[1]
BM140	b04	for: TGCACAACACACATTTAGTGAC rev: CCTACCAAGATTGATTTATGGG	55	[1]
BMb43	b04	for: GTGATCGGCTACATTAGCAT rev: GCTCTCATGTTCTCTTTCTCA	55	[2]
BM175	b05	for: CAACAGTTAAAGGTCGTCAAATT rev: CCACTCTTAGCATCAACTGGA	55	[1]
BMb293	b05	for: CAATTCTACACTTTGGTGCG rev: AACGTCATTGATTTGACTCC	55	[2]
BM137	b06	for: CGCTTACTCACTGTACGCACG rev: CCGTATCCGAGCACCGTAAC	58	[1]
BM170	b06	for: AGCCAGGTGCAAGACCTTAG rev: AGATAGGGAGCTGGTGGTAGC	58	[3]
BMb526	b07	for: AAAGGGCAAGTTAGATGTGA rev: TTTGAAGAATAGAAATCATACTG	55	[2]
BM189	b08	for: CTCCCACTCTCACCTCACT rev: GCGCCAAGTGAACTAAGTAGA	55	[1]
BM141	b09	for: TGAGGAGGAACAATGGTGGC rev: CTCACAAACCACAACGCACC	58	[1]
BM114	b09	for: AGCCTGGTGAAATGCTCATAG rev: CATGCTTGTTGCCTAACTCTCT	58	[3]

BMb221	b10	for: TGAAAGACAAGAGGGTTCAT rev: TTGTAGGCACTATTCCGTTT	58	[2]
BMd-41	b11	for: CAGTAAATATTGGCGTGGATGA rev: TGAAAGTGCAGAGTGGTGGA	58	[4]
BMb619	b11	for: GATGGACACACTCACAAACA rev: TGTGTTCTACCACCAACAGA	55	[2]
Gene-based				
BMd-18	b02	for: AAAGTTGGACGCACTGTGATT rev: TCGTGAGGTAGGAGTTTGGTG	58	[4]
PV-gccacc001	b02	for: CGTTAGATCCCGCCCAATAGT rev: CCGTCCAGGAAGAGCGAGC	58	[5]
PV-at006	b02	for: CCGTTGCCTGTATTTCCCAT rev: CGTGTGAAGTCATCTGGAGTGGTC	58	[5]
drough1	b02	for: CAGACATGCAAATTGGAAC rev: GGAGCACCAAAGATCATAGA	58	[6]
PV-at008	b03	for: AGTCGCCATAGTTGAAATTTAGGTG rev: CTTATTAAAACGTGAGCATATGTATCATTC	61	[5]
PV-ctt001	b04	for: GAGGGTGTTCCTACTATTGTCACTGC rev: TTCATGGATGGTGGAGGAACAG	64	[5]
Pv_gb-SSR1	b09	for: CCAGCAGGTACGTAGCCAAT rev: GCTCCTCCGACAAACCTACA	58	[7]

^a Linkage Group; ^b Annealing Temperature (°C).

References

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Table S2. Genetic descriptive statistics of the studied common bean lines.

ID	N_a^a	N_e^b	Hom_o^c	Hom_e^d	H_o^e	H_e^f
Line-1	1.04	1.01	0.99	0.99	0.01	0.01
Line-2	1.04	1.02	1.00	0.98	0.00	0.01
Line-3	1.04	1.02	0.98	0.98	0.01	0.01
Line-4	1.00	1.00	1.00	1.00	0.00	0.00
Line-5	1.04	1.01	0.99	0.99	0.01	0.01
Line-6	1.04	1.02	0.98	0.98	0.01	0.01
Line-7	1.08	1.06	1.00	0.96	0.00	0.03
Line-8	1.04	1.03	1.00	0.98	0.00	0.02
Line-9	1.04	1.03	1.00	0.98	0.00	0.02
Line-10	1.04	1.01	0.99	0.99	0.01	0.01
Line-11	1.04	1.02	1.00	0.98	0.00	0.01
Line-12	1.08	1.02	0.99	0.98	0.01	0.01
Line-13	1.00	1.00	1.00	1.00	0.00	0.00
Line-14	1.00	1.00	1.00	1.00	0.00	0.00
Line-15	1.00	1.00	1.00	1.00	0.00	0.00
Line-16	1.08	1.05	0.96	0.97	0.03	0.03
Line-17	1.00	1.00	1.00	1.00	0.00	0.00

^a Average number of alleles; ^b Average number of effective alleles; ^c Observed homozygosity; ^d Expected homozygosity; ^e Observed heterozygosity; ^f Expected heterozygosity.