

Supplementary Table S1: Pedigree of soybean genotypes used in present study.

Sr. No.	Genotype	Origin	Pedigree	Alternate Name (Country)	Source
1	TGx 1440-1E	IITA	TGx 536-02D × TGx 814-27D	–	IITA, Ibadan
2	TGx 1448-2E	IITA	TGx 824-18D × TGx 814-27D	Jenguma (Ghana), Slibean1 (Sierra leone)	IITA, Ibadan
3	TGx 1485-1D	IITA	TGx 316-024D × TGx 813-11D	Sana (Mozambique)	IITA, Ibadan
4	TGx 1740-2F	IITA	TGx 539-5E × SIBLEY	DPSB 19 (Kenya), Tikolore (Malawi), Wamini (Mozambique)	IITA, Ibadan
5	TGx 1830-20E	IITA	TGx 1483-3D × TGx 1448-1E	Nangbaar (Ghana)	IITA, Ibadan
6	TGx 1835-10E	IITA	TGx 1213-1D × TGx 1445-3E	Maksoy 1N (Uganda), SB 3 (Kenya)	IITA, Ibadan
7	TGx 1892-10F	IITA	BR 839240 × TGx 1740-6F	Afgat (Ethiopia)	IITA, Ibadan
8	TGx 1895-33F	IITA	TGx 1814-3E × TGx 1740-6F	Wello (Ethiopia), DPSB 8 (Kenya)	IITA, Ibadan
9*	TGx 1904-6F	IITA	TGx 1802-2F × TGx 1834-5E	Zamboane (Mozambique), Slibean4 (Sierra leone)	IITA, Ibadan
10	TGx 1937-1F	IITA	TGx 1805-31F × TGx 1834-5E	Olima (Mozambique)	IITA, Ibadan
11	TGx 1951-3F	IITA	TGx 1848-10E × TGx 1829-1E	–	IITA, Ibadan
12	TGx 1951-4F	IITA	TGx 1848-10E × TGx 1829-1E	Slibean2 (Sierra leone)	IITA, Ibadan
13	TGx 1987-10F	IITA	TGx 1805-31F × UG5	–	IITA, Ibadan
14*	TGx 1987-62F	IITA	TGx 1805-31F × UG5	–	IITA, Ibadan
15	TGx 1988-5F	IITA	TGx 1740-2F × UG5	–	IITA, Ibadan
16	TGx 1989-19F	IITA	TGx 1440-1E × UG5	–	IITA, Ibadan
17	TGx 1987-14F	IITA	TGx 1805-31F × UG5	–	IITA, Ibadan
18	TGx 1987-65F	IITA	TGx 1805-31F × UG5	–	IITA, Ibadan
19	TGx 1989-21F	IITA	TGx 1440-1E × UG5	–	IITA, Ibadan
20	TGx 1989-41F	IITA	TGx 1440-1E × UG5	–	IITA, Ibadan
21	TGx 1989-42F	IITA	TGx 1440-1E × UG5	–	IITA, Ibadan
22	TGx 1989-47F	IITA	TGx 1440-1E × UG5	–	IITA, Ibadan
23	TGx 1989-48F	IITA	TGx 1440-1E × UG5	–	IITA, Ibadan

24	TGx 1990-37F	IITA	TGx 1448-2E ×UG5	-	IITA, Ibadan
25*	TGx 1990-40F	IITA	TGx 1448-2E ×UG5	-	IITA, Ibadan
26	TGx 1990-73F	IITA	TGx 1448-2E ×UG5	-	IITA, Ibadan
27	TGx 1990-78F	IITA	TGx 1448-2E ×UG5	-	IITA, Ibadan
28	TGx 1990-80F	IITA	TGx 1448-2E ×UG5	-	IITA, Ibadan
29	TGx 1993-4FN	IITA	TGx 1440-1E ×SOY104	-	IITA, Ibadan
30	TGx 2001-9DM	IITA	TGx 1987-14F ×Nasoko(MW1)	-	IITA, Ibadan
31	TGx 2002-5FM	IITA	TGx 1740-2F ×MW1	-	IITA, Ibadan
32	TGx 2002-33FM	IITA	TGx 1740-2F ×MW1	-	IITA, Ibadan
33	TGx 2004-7F	IITA	TGx 1740-2F ×UG 5-15-3	-	IITA, Ibadan
34	TGx 2004-9F	IITA	TGx 1740-2F ×UG 5-15-3	-	IITA, Ibadan
35	TGx 2004-13F	IITA	TGx 1740-2F ×UG 5-15-3	-	IITA, Ibadan
36	TGx 2004-13F(WF)	IITA	TGx 1740-2F ×UG 5-15-3	-	IITA, Ibadan
37	TGx 2007-1F	IITA	TGx 1954-1F ×UG 5	-	IITA, Ibadan
38*	TGx 2007-3F	IITA	TGx 1954-1F ×UG 5	-	IITA, Ibadan
39	TGx 2007-4F	IITA	TGx 1954-1F ×UG 5	-	IITA, Ibadan
40*	TGx 2009-1F	IITA	TGx 1983-1F ×UG 5	-	IITA, Ibadan
41	TGx 2009-12F	IITA	TGx 1983-1F ×UG 5	-	IITA, Ibadan
42	TGx 2009-14F	IITA	TGx 1983-1F ×UG 5	-	IITA, Ibadan
43	TGx 2010-5F	IITA	TGx 1987-14F ×MW1	-	IITA, Ibadan
44	TGx 2010-11F	IITA	TGx 1987-14F ×MW1	-	IITA, Ibadan
45	TGx 2010-14F	IITA	TGx 1987-14F ×MW1	-	IITA, Ibadan
46	TGx 2010-15F	IITA	TGx 1987-14F ×MW1	-	IITA, Ibadan
47	TGx 2013-2F	IITA	TGx 1987-37F ×TGx 1740-2F	-	IITA, Ibadan
48	TGx 2016-2E	IITA	TGx 1987-10F ×TGx 1740-2F	-	IITA, Ibadan
49	TGx 2016-5E	IITA	TGx 1987-10F ×TGx 1740-2F	-	IITA, Ibadan
50	TGx 2016-6E	IITA	TGx 1987-10F ×TGx 1740-2F	-	IITA, Ibadan
51	TGx 2018-1E	IITA	TGx 1987-11F ×MW3	-	IITA, Ibadan
52	TGx 2018-3E	IITA	TGx 1987-11F ×MW3	-	IITA, Ibadan

53	TGx 2018-5E	IITA	TGx 1987-11F × MW3	-	IITA, Ibadan
54	TGx 2019-1E	IITA	TGx 1987-11F × TGx 1740-2F	-	IITA, Ibadan
55	TGx 2020-1E	IITA	TGx 1987-62F × MW1	-	IITA, Ibadan
56	TGx 2020-2E	IITA	TGx 1987-62F × MW1	-	IITA, Ibadan
57	TGx 2020-4E	IITA	TGx 1987-62F × MW1	-	IITA, Ibadan
58*	TGx 2022-4E	IITA	TGx 1987-62F × MW4	-	IITA, Ibadan
59	TGx 2023-1E	IITA	TGx 1987-62F × TGx 1740-2F	-	IITA, Ibadan
60	TGx 2023-4E(PF)	IITA	TGx 1987-62F × TGx 1740-2F	-	IITA, Ibadan
61	TGx 2023-4E(WF)	IITA	TGx 1987-62F × TGx 1740-2F	-	IITA, Ibadan
62	TGx 2025-6E	IITA	TGx 1987-9F × MW3	-	IITA, Ibadan
63	TGx 2025-9E	IITA	TGx 1987-9F × MW3	-	IITA, Ibadan
64	TGx 2025-13E	IITA	TGx 1987-9F × MW3	-	IITA, Ibadan
65	TGx 2025-15E	IITA	TGx 1987-9F × MW3	-	IITA, Ibadan
66	TGx 2025-16E	IITA	TGx 1987-9F × MW3	-	IITA, Ibadan
67	TGx 2025-19E	IITA	TGx 1987-9F × MW3	-	IITA, Ibadan
68	TGx 2027-2E	IITA	TGx 1987-9F × TGx 1740-2F	-	IITA, Ibadan
69	TGx 2027-3E	IITA	TGx 1987-9F × TGx 1740-2F	-	IITA, Ibadan
70	TGx 2027-4E	IITA	TGx 1987-9F × TGx 1740-2F	-	IITA, Ibadan
71	TGx 2027-8E	IITA	TGx 1987-9F × TGx 1740-2F	-	IITA, Ibadan
72	AVT2-TGx 2001-1DM	IITA	TGx 1987-14F × Nasoka (MW1)	-	IITA, Ibadan
73	AVT2-TGx 2001-11DM	IITA	TGx 1987-14F × Nasoka (MW1)	-	IITA, Ibadan
74	AVT1-TGx 2001-24FM	IITA	TGx 1987-14F × Nasoka (MW1)	-	IITA, Ibadan
75	AVT2-TGx 2002-3DM	IITA	TGx 1740-2F × Nasoka (MW1)	-	IITA, Ibadan
76	AVT2-TGx 2002-14DM	IITA	TGx 1740-2F x Nasoka (MW1)	-	IITA, Ibadan
77	AVT1-TGx 2002-3FM	IITA	TGx 1740-2F x Nasoka (MW1)	-	IITA, Ibadan
78*	AVT2-TGx 2002-7FM	IITA	TGx 1740-2F x Nasoka (MW1)	-	IITA, Ibadan
79	AVT2-TGx 2014-16FM	IITA	TGx 1830-20E × UG 5	-	IITA, Ibadan
80	AVT2-LUKANGA	Zambia	AVT2-LUKANGA	-	ZamSeed (Zambia)
81	ZM-551(PF)	Malawi	PVT07-4-MAKWACHA TRIAL TALL	-	DARS (Malawi)

82	ZM-551(WF)	Malawi	PVT07-4-MAKWACHA TRIAL TALL	-	DARS (Malawi)
83*	ZM-552	Malawi	PVT07-4-MAKWACHA TRIAL SHORT	-	DARS (Malawi)
84	ZM-553	Malawi	PVT07-10-NASOKO TALL	-	DARS (Malawi)
85	ZM-554	Malawi	PVT07-10-NASOKO SHORT	-	DARS (Malawi)
86	ZM-555	Zambia	PVT07-26-BUCK	-	IITA, Zambia
87	ZM-556	IITA	TGx 1987-14F × Nasoko(MW1)	AVT1-TGX 2001-24FM(REP 1 PLOT 10)	IITA, Zambia
88	ZM-557	IITA	TGx 1740-2F × Nasoko(MW1)	AVT1-TGX 2002-3FM	IITA, Zambia
89	ZM-558	IITA	TGx 1987-14F × Nasoko(MW1)	AVT-TGX 2001-24FM	IITA, Zambia
90	ZM-559	IITA	TGx 1987-14F × Nasoko(MW1)	AVT2-TGX 2001-11DM	IITA, Zambia
91	ZM-560	IITA	TGx 1740-2F × Nasoko(MW1)	AVT2-TGX 2002-3DM	IITA, Zambia
92	ZM-561	Zambia	AVT2-SC-SQUIRE	-	IITA, Zambia
93	ZM-562	IITA	TGx 1987-14F × Nasoko(MW1)	AVT2-TGX 2001-1DM	IITA, Zambia
94	ZM-563	Zambia	AVT2-SC-SAFARI	-	IITA, Zambia
95	ZM-564	IITA	TGx 1740-2F × Nasoko(MW1)	AVT2-TGX 2002-7FM	IITA, Zambia
96	ZM-565	IITA	TGx 1740-2F × Nasoko(MW1)	AVT2-TGX 2002-14DM	IITA, Zambia
97	ZM-566	Zambia	AVT-MR DINA	-	MRI Seeds (Zambia)
98	ZM-567	IITA	TGx 1830-20E × UG 5	AVT2-TGX 2014-16FM	IITA, Zambia
99	ZM-568	Zambia	AVT2-LUKAGA	-	ZamSeed (Zambia)
100	ZM-569	IITA	TGx 1740-2F × Nasoko(MW1)	AVT2-TGX 2002-14DM	IITA, Zambia
101	ZM-570	Zambia	AVT3-SC-SAMBA (REP 1 PLOT 6)	-	IITA, Zambia
102	ZM-571	IITA	TGx 1740-2F × Nasoko(MW1)	AVT3-TGX 2002-8FM	IITA, Zambia
103	ZM-572	Zambia	AVT3-SAMBA (REP 2)	-	IITA, Zambia
104	ZM-573	IITA	TGx 1830-20E × UG 5	AVT3-TGX 2014-9FM	IITA, Zambia
105	ZM-574	Zambia	PANORAMA 352	-	IITA, Zambia
106	ZM-575	Zambia	(PANORAMA 29/PANORAMA 356	-	IITA, Zambia
107	ZM-576	Zambia	CIMATTONAA OBV-20-2-M(2)//ST SUPREMA/SOYICA P	-	IITA, Zambia

108	ZM-577	Zambia	SPSOY-2005B-014-	-	IITA, Zambia
109	ZM-578	Zambia	SPSOY-2007A-068-	-	IITA, Zambia
110	ZM-580	Zambia	SPSOY-2005-000148-	-	IITA, Zambia
111	ZIGX1001`	Zambia	NA	-	IITA, Zambia
112	ZIGX1002	Zambia	NA	-	IITA, Zambia
113	ZIGX1003	Zambia	NA	-	IITA, Zambia
114	ZIGX1004	Zambia	NA	-	IITA, Zambia
115	ZIGX1005	Zambia	NA	-	IITA, Zambia
116	ZIGX1006	Zambia	NA	-	IITA, Zambia
117	SPSOY-2005-000148	Zambia	NA	-	IITA, Zambia
118	SPSOY2005B-014	Zambia	NA	-	IITA, Zambia
119	SPSOY2007A-030	Zambia	NA	-	IITA, Zambia
120	SPSOY2007A-068	Zambia	NA	-	IITA, Zambia
121	SPSOY-2008A-00187	Zambia	NA	-	IITA, Zambia
122	SPSOY2008A-00213	Zambia	NA	-	IITA, Zambia
123	SPSOY-2012A-594	Zambia	NA	-	IITA, Zambia
124	ST.Suprema/Soyica.P3.Ci marrona	Zambia	NA	-	IITA, Zambia
125	T5-EL-LD-77-JM 17-D5	IITA	NA	-	IITA, Ibadan
126	TGM 188	NA	NA	-	IITA, Ibadan
127	IITA 2019-1	IITA	NA	-	IITA, Ibadan
128	Akinyosi	NA	NA	-	IITA, Ibadan
129	Cimarrona.Obv-(5Sec)-6-7- M(2)2001-57)	Zambia	NA	-	IITA, Zambia
130	Panorama 29 /Panorama 356	Zambia	NA	-	IITA, Zambia
131	PR165-52	USA	NA	-	IITA, Zambia
132	LD13-06692	USA	LD07-3395 × Dairyland 75334	-	IITA, Zambia
133	LG11-6210	USA	LG03-3020 × LG03-3780	-	IITA, Zambia

134	LG12-1902	USA	NA	-	IITA, Zambia
135	LG13-2100	USA	NA	-	IITA, Zambia
136	LG13-3576	USA	LG05-4229 × LG04-5187	-	IITA, Zambia
137	LG13-3971	USA	LG04-6000 × LG04-5187	-	IITA, Zambia
138*	UG 5	Uganda	NA	-	IITA, Ibadan
139	MW1	Uganda	<i>Maksoy 1N</i>	-	IITA, Ibadan
140	MW3	Uganda	<i>Maksoy 3N</i>	-	IITA, Ibadan
141	MW4	Uganda	<i>Maksoy 4N</i>	-	IITA, Ibadan
142	CLARK	USA	Lincoln2 × Richland	-	IITA, Ibadan
143	Dundee	South Africa	NA	-	IITA, Ibadan
144	Ergret	South Africa	NA	-	IITA, Ibadan
145	H7	China	NA	-	IITA, Ibadan
146	H10	Malawi	NA	-	IITA, Ibadan
147	Heron	Canada	T2653 × TNS	-	IITA, Ibadan
148	IBIS 2000	South Africa	NA	-	IITA, Ibadan
149	Pickett	USA	(D49-2491(6) × Dorman) × (Lee(4) × Peking)	-	IITA, Ibadan
150	Santa Rosa	Brazil	NA	-	IITA, Ibadan
151*	Seedco	NA	NA	-	IITA, Ibadan
152	Shelby	USA	Lincoln2 × Richland	-	IITA, Ibadan
153	Solar 12	NA	NA	-	IITA, Ibadan
154	Yeluanda	USA	NA	-	IITA, Ibadan
155	PI 230970	Japan	NA	-	IITA, Ibadan
156	PI 459025B	China, Fujian Sheng	NA	Bing nan	IITA, Ibadan
157	PI 462312	India, Pant Nagar	Single Plant Selection from composite of 22 crosses	Ankur	IITA, Ibadan
158	PI 471904	Indonesia	NA	Orba	IITA, Ibadan
159	PI 561356(PF)	China, Zhejiang	NA	Jin yun dou	IITA, Ibadan
160	PI 561356(WF)	China, Zhejiang	NA	Jin yun dou	IITA, Ibadan
161	PI 567068A	Indonesia	NA	MARIF 2666	IITA, Ibadan

162	PI 567090	Indonesia	NA	MARIF 2688	IITA, Ibadan
163	PI 567129	Indonesia	NA	MARIF 2796	IITA, Ibadan
164	PI 605823	Vietnam, Ha Giang	NA	Sample 87	IITA, Ibadan
165	PI 635999	Taiwan	Selection from line GC 00138–29	DT2000	IITA, Ibadan

Note: * represents samples excluded from the final analysis while NA denotes Not available