

Table S1. DNA quantity and quality of yam leaf samples preserved with five different methods prior to the DNA extraction

Order	Genotypes	Method	Nucleic Acid (ng/μL)	A230 nm (Abs)	A260nm (Abs)	A280nm (Abs)	A260/280 (ratio)	A260/230 (ratio)
1	Agba	Dry Ice	1921.20	19.213	38.425	19.946	1.93	2.00
2	Ufenyi	Dry Ice	1513.90	15.139	30.277	16.066	1.88	2.00
3	TDr95/19158	Dry Ice	1440.20	15.159	28.803	15.347	1.88	1.90
4	TDr95/19177	Dry Ice	2136.50	20.348	42.73	22.249	1.92	2.10
5	TDr97/00793	Dry Ice	384.90	4.051	7.697	4.504	1.71	1.90
6	TDr793 1	Ethanol	118.80	1.189	2.377	1.539	1.54	2.00
7	TDr793 2	Ethanol	473.30	4.302	9.465	5.646	1.68	2.20
8	TDr00015 1	Ethanol	582.00	5.820	11.64	6.854	1.70	2.00
9	TDr00015 2	Ethanol	301.40	2.740	6.028	3.924	1.54	2.20
10	TDr00015 3	Ethanol	532.20	4.628	10.644	6.278	1.70	2.00
11	Agba	Liquid Nitrogen	1069.20	11.254	21.383	11.397	1.88	1.90
12	Ufenyi	Liquid Nitrogen	1823.80	17.370	36.476	19.1	1.91	2.10
13	TDr95/19158	Liquid Nitrogen	1478.10	14.781	29.562	15.521	1.90	2.00
14	TDr98/19177	Liquid Nitrogen	1770.30	16.094	35.407	18.584	1.91	2.20
15	TDr97/00793	Liquid Nitrogen	1751.20	15.227	35.023	18.208	1.92	2.00
16	TDr793 1	Oven drying	1315.10	12.525	26.302	14.394	1.83	2.10
17	TDr793 2	Oven drying	730.90	7.694	14.618	8.583	1.70	1.90
18	TDr793 3	Oven drying	1464.80	13.951	29.297	16.064	1.82	2.10
19	TDr00015 1	Oven drying	1256.20	13.224	25.125	13.435	1.87	1.90
20	TDr00015 2	Oven drying	1379.40	13.137	27.587	14.667	1.88	2.10
21	TDr00015 3	Oven drying	1639.00	16.390	32.779	17.117	1.91	2.00
22	Agba	Silica gel	3636.90	34.637	72.738	37.434	1.94	2.10
23	Ufenyi	Silica gel	1259.40	13.257	25.188	13.475	1.87	1.90
24	TDr95/19158	Silica gel	842.10	8.020	16.842	9.42	1.79	2.10
25	TDr95/19177	Silica gel	2311.60	23.117	46.233	24.083	1.92	2.00
26	TDr97/00793	Silica gel	1353.40	14.247	27.069	14.628	1.85	1.90

Supplementary Table S2: Comparison between phenotypic flower expression and marker prediction of one hundred and ninety (190) *D. rotundata* clones in 2017 and 2018 planting seasons

Genotypes	sp16 Amplification	Predicted sex	Observed sex phenotype		Accuracy (%)
			2017	2018	
Akunchi	1	F	F	F	100
TDr89/02475	1	F	F	F	100
TDr89/02665	1	F	F	F	100
Nduu	1	F	F	F	100
TDr11/00873	1	F	F	F	100

Genotypes	sp16 Amplification	Predicted sex genotype	Observed sex phenotype		Accuracy (%)
			2017	2018	
TDr95/19156	1	F	F	F	100
TDr97/00793	1	F	F	F	100
Alumaco	1	F	M	M	0
Faketsa	0	M	M	M	100
TDr11/00163	0	M	M	M	100
TDr95/01932	0	M	M	M	100
TDr05/00491	1	F	MFD	MFD	100
TDr09/00002	1	F	MMD	MMD	100
TDr09/00058	0	M	M	M	100
TDr11/00034	1	F	M	M	0
TDr11/00497	0	M	M	M	100
TDr11/00835	0	M	F	F	0
TDr09/00082	1	F	M	M	0
TDr11/00582	0	M	M	M	100
Amula	1	F	MMD	MMD	100
TDr11/00421	1	F	M	M	0
TDr11/00396	1	F	M	M	0
TDr11/00585	0	M	M	M	100
TDr11/00492	0	M	M	M	100
TDr11/00278	1	F	MMD	MMD	100
TDr11/00101	0	M	M	M	100
TDr89/02157	1	F	F	F	100
Leusi	0	M	M	M	100
Pouna	0	M	M	M	100
TDr95/18544	0	M	F	F	100
TDr97/00917	1	F	F	F	100
Ojuyawo	1	F	F	F	100
Ehobia	1	F	M	M	0
TDr99/02626	0	M	M	M	100
TDr97/00632	1	F	F	F	100
Agbanwobe	1	F	F	F	100
TDr95/19177	1	F	MMD	MMD	100
TDr00/00362	0	M	M	M	100
Yangbedu	0	M	M	M	100
TDr06-15	1	F	M	M	0
TDr99/02789	0	M	M	M	100
Meccakusa	1	F	F	F	100
TDr99/02562	0	M	M	M	100
TDr97/00205	1	F	F	F	100
TDr95/18988	1	F	F	F	100
TDr04-219	1	F	MFD	MFD	100
Panpas	1	F	F	F	100
TDr08-21-2	1	F	F	F	100
TDr96/00629	1	F	MFD	MFD	100
TDr95/19158	1	F	F	F	100
TDr89/02677	1	F	M	M	0
Ufenyi	1	F	F	F	100

Genotypes	sp16 Amplification	Predicted sex genotype	Observed sex phenotype		Accuracy (%)
			2017	2018	
TDr99/02607	0	M	M	M	100
TDr08-21-3	1	F	F	F	100
TDr1601-12	1	F	NFI	NFI	
TDr1601-15	1	F	NFI	NP	
TDr1601-17	1	F	NFI	M	0
TDr1601-19	1	F	NFI	F	100
TDr1601-2	1	F	NFI	F	100
TDr1601-20	1	F	NFI	M	0
TDr1601-3	1	F	NFI	NFI	
TDr1601-4	0	M	NFI	NFI	
TDr1606-21	0	M	NFI	M	100
TDr1606-24	1	F	NFI	M	0
TDr1606-32	0	M	NFI	M	100
TDr1606-33	0	M	NFI	M	100
TDr1606-44	1	F	NFI	NFI	
TDr1606-45	0	M	NFI	NP	
TDr1606-48	1	F	NFI	NP	
TDr1606-53	1	F	NFI	M	0
TDr1614-16	1	F	NFI	NFI	
TDr1614-17	1	F	NFI	NFI	
TDr1614-21	0	M	NFI	NP	
TDr1614-23	0	M	NFI	M	100
TDr1614-24	1	F	NFI	NFI	
TDr1614-25	0	M	NFI	M	100
TDr1614-29	0	M	NFI	M	100
TDr1614-30	0	M	NFI	M	100
TDr1620-1	0	M	NFI	M	100
TDr1620-10	1	F	NFI	NP	
TDr1620-2	0	M	NFI	M	100
TDr1620-3	1	F	NFI	F	100
TDr1620-5	1	F	NFI	NFI	
TDr1620-6	1	F	NFI	NFI	
TDr1620-7	1	F	NFI	NFI	
TDr1620-8	0	M	NFI	NFI	
TDr1619-112	0	M	NFI	M	100
TDr1619-20	1	F	NFI	NFI	
TDr1619-39	1	F	NFI	NP	
TDr1619-45	1	F	NFI	NP	
TDr1619-66	1	F	NFI	MMD	100
TDr1619-67	0	M	NFI	NP	
TDr1619-71	1	F	NFI	NP	
TDr1619-98	1	F	NFI	NP	
TDr1632-18	1	F	NFI	NFI	
TDr1632-27	0	M	NFI	M	100
TDr1632-45	1	F	NFI	M	0
TDr1632-52	0	M	NFI	NFI	
TDr1632-55	1	F	NFI	NFI	
TDr1652-10	1	F	NFI	NFI	
TDr1652-12	1	F	NFI	F	100
TDr1652-13	1	F	NFI	NFI	

Genotypes	sp16 Amplification	Predicted sex genotype	Observed sex phenotype		Accuracy (%)
			2017	2018	
TDr1652-21	1	F	NFI	NP	
TDr1652-28	1	F	NFI	M	0
TDr1652-39	1	F	NFI	NFI	
TDr1652-50	1	F	NFI	NP	
TDr1652-74	1	F	NFI	NFI	
TDr1655-25	1	F	NFI	NFI	
TDr1655-29	1	F	NFI	M	0
TDr1655-40	0	M	NFI	NP	
TDr1655-49	1	F	NFI	NFI	
TDr1655-56	1	F	NFI	NFI	
TDr1655-63	1	F	NFI	M	0
TDr1655-84	1	F	NFI	M	0
TDr1401161-106	0	M	NFI	M	100
TDr1401161-71	1	F	NFI	NFI	
TDr1401161-74	1	F	NFI	NP	
TDr1401161-93	0	M	NFI	NFI	
TDr1401161-97	0	M	NFI	M	100
TDr1401112-202	0	M	NFI	M	100
TDr1401112-210	0	M	NFI	F	0
TDr1401112-224	1	F	NFI	NP	
TDr1401112-257	0	M	NFI	NP	
TDr1401112-52	1	F	NFI	NFI	
TDr1401220-224	1	F	NFI	NP	
TDr1401220-26	1	F	NFI	M	0
TDr1401220-34	1	F	NFI	NFI	
TDr1401220-56	1	F	NFI	NP	
TDr1401220-6	0	M	NFI	F	0
TDr97/00793-13	0	M	NFI	M	100
TDr97/00793-15	0	M	NFI	NFI	
TDr97/00793-18	1	F	NFI	NFI	
TDr97/00793-21	1	F	NFI	M	0
TDr97/00793-26	0	M	NFI	NFI	
TDr97/00793-27	1	F	NFI	NP	
TDr97/00793-29	1	F	NFI	NFI	
TDr97/00793-32	0	M	NFI	NFI	
TDr97/00793-49	1	F	NFI	NFI	
TDr97/00793-5	1	F	NFI	M	0
TDr97/00793-50	0	M	NFI	NFI	
TDr97/00793-55	0	M	NFI	NFI	
TDr89/02157-10	1	F	NFI	NFI	
TDr89/02157-12	1	F	NFI	F	100
TDr89/02157-15	0	M	NFI	NFI	
TDr89/02157-18	0	M	NFI	M	100
TDr89/02157-20	0	M	NFI	M	100
TDr89/02157-23	1	F	NFI	NFI	
TDr89/02157-28	1	F	NFI	F	100
TDr89/02157-35	0	M	NFI	NFI	
TDr89/02157-41	0	M	NFI	NFI	
TDr89/02157-5	1	F	NFI	NFI	
TDr89/02157-59	0	M	NFI	M	100
TDr89/02157-7	1	F	NFI	NFI	
TDr89/02475-108	0	M	NFI	M	100

Genotypes	sp16 Amplification	Predicted sex genotype	Observed sex phenotype		Accuracy (%)
			2017	2018	
TDr89/02475-56	1	F	NFI	NFI	
TDr89/02475-64	1	F	NFI	NFI	
TDr89/02475-66	1	F	NFI	NFI	
TDr89/02475-72	0	M	NFI	NFI	
TDr89/02475-75	0	M	NFI	NFI	
TDr89/02475-87	1	F	NFI	NFI	
TDr89/02475-96	0	M	NFI	NFI	
TDr97/00205-150	0	M	NFI	NFI	
TDr97/00205-216	1	F	NFI	NFI	
TDr97/00205-227	1	F	NFI	M	0
TDr97/00205-231	1	F	NFI	M	0
TDr97/00205-31	1	F	NFI	NFI	
TDr97/00205-42	1	F	NFI	NFI	
TDr97/00205-61	1	F	NFI	NFI	
TDr97/00205-66	1	F	NFI	NFI	
TDr89/18988-40	1	F	NFI	M	0
TDr89/18988-42	1	F	NFI	NFI	
TDr89/18988-51	0	M	NFI	M	100
TDr89/18988-56	1	F	NFI	NFI	
TDr89/18988-80	1	F	NFI	NFI	
TDr89/18988-87	1	F	NFI	NFI	
TDr89/18988-94	1	F	NFI	NFI	
TDr89/18988-95	0	M	NFI	NFI	
Ojuyawo-18	1	F	NFI	NFI	
Ojuyawo-23	0	M	NFI	NFI	
Ojuyawo-27	0	M	NFI	M	100
Ojuyawo-83	0	M	NFI	M	100
Ojuyawo-84	0	M	NFI	NFI	
Ojuyawo-86	0	M	NFI	NFI	
Ojuyawo-163	0	M	NFI	M	100
Ojuyawo-171	0	M	NFI	NFI	
TDr97/00632-41	1	F	NFI	NFI	
TDr97/00632-60	1	F	NFI	NFI	
TDr97/00632-88	1	F	NFI	M	0
TDr95/19158-13	1	F	NFI	NFI	
TDr95/19158-11	1	F	NFI	NFI	
Average prediction accuracy					73.53

F = female genotype (ZW); M= male genotype (ZZ); MFD = monoecious female dominant (ZW); MMD = monoecious male dominant (ZW); NFI = No Flower Information; NP = No survival.