Supplementary Table S1. ANOVA for height (H), diameter (D), chlorophyll content (CHL), yield, leaf area index (LAI), specific leaf area (SLA) of 20 cassava genotypes from South America for growing seasons.

Source of Variability	DF	Mean Square						
		H	D	CHL	Yield	LAI	SLA	Starch
Year (Y)	1	0.1610**	0.0716**	0.0019**	8.6124**	0.0901**	24.3779**	8.5829**
Genotype (G)	19	1.6551**	34.9743**	75.9697**	4.3273**	0.5243**	1102.7094**	66.5866**
Y × G	19	0.0431**	0.11626**	0.2294**	0.2674^{ns}	0.0033**	4.0433**	0.3366^{ns}

** = significant at p < 0.01, ns – no significance; DF—degrees of freedom

Supplementary Table S2. ANOVA for Iron (Fe), Zinc (Zn), Selenium (Se) concentration in roots; and net photosynthesis rate (*A*), transpiration (*E*) and stomatal conductance (g_s) of 20 cassava genotypes from South America for growing seasons.

Source of Variability	DF	Mean Square					
		Fe	Zn	Se	*A*	*E*	g_s
Year (Y)	1	0.7179^{ns}	0.9828^{ns}	0.7480^{ns}	59.1471**	11.4373**	0.0270**
Genotype (G)	19	86.7110**	37.3117**	97.5051**	152.2901**	19.8212**	0.0465**
Y × G	19	0.0012^{ns}	0.0099^{ns}	0.0024^{ns}	2.9044**	0.0449**	0.0001**

** = significant at p < 0.01, ns – no significance; DF—degrees of freedom

Supplementary Table S3. Concentrations of nitrogen (N), phosphorus (P), potassium (K), calcium (Ca), magnesium (Mg), sulfur (S), boron (B), cupper (Cu), iron (Fe), manganese (Mn), zinc (Zn) and selenium (Se) in the shoot of cassava genotypes grown in 2021/2022

Genotypes	N	P	K	Ca	Mg	S	B	Cu	Fe	Mn	Zn	Se
	----------g kg^{-1}----------						----------mg kg^{-1}----------					μg kg^{-1}
DG014	41.21	29.83	32.65	78.26	4.25	6.01	61.74	8.08	232.63	15.03	34.48	10.67
DG125	41.84	28.12	36.17	71.79	4.28	6.62	60.36	8.43	213.90	27.83	20.39	10.05
DG203	42.81	22.33	38.99	74.66	4.23	6.01	65.71	8.90	295.81	15.09	42.59	10.00
DG707	42.73	26.25	32.74	73.62	4.25	6.19	63.55	8.99	292.71	23.59	28.20	10.63
DG745	41.89	23.08	31.66	76.63	4.11	6.03	66.33	8.96	298.94	20.69	40.92	10.93
DG768	42.39	22.16	34.37	74.81	4.24	6.57	64.88	8.73	210.60	29.62	42.01	10.52
DG839	41.38	25.54	38.55	74.29	4.10	6.05	68.94	8.88	262.74	20.95	29.57	10.99
DG848	42.21	27.03	32.80	77.05	4.22	6.67	63.36	8.08	282.79	23.01	34.33	10.67
MS018	41.10	24.20	31.97	75.30	4.21	7.00	68.70	9.08	291.03	23.15	23.85	10.64
MS019	41.80	21.96	36.39	77.77	4.17	6.35	69.50	8.23	221.79	22.34	37.54	10.22
MS053	41.77	22.19	36.34	82.34	4.16	6.15	66.14	8.98	231.99	17.12	33.55	10.16
MS055	42.34	24.16	38.49	78.12	4.28	6.77	62.08	8.13	211.16	26.89	41.03	10.34
MS079	41.75	30.24	32.91	81.95	4.28	6.19	68.75	8.96	269.28	20.76	30.96	10.11

Supplementary Table S4. Concentrations of nitrogen (N), phosphorus (P), potassium (K), calcium (Ca), magnesium (Mg), sulfur (S), boron (B), cupper (Cu), iron (Fe), manganese (Mn), zinc (Zn) and selenium (Se) in the shoot of cassava genotypes grown in 2022/2023

Genotypes	N	P	K	Ca	Mg	S	B	Cu	Fe	Mn	Zn	Se
	----------g kg^{-1}----------						----------mg kg^{-1}----------					μg kg^{-1}
DG014	42.83	25.11	37.96	72.90	4.16	6.31	60.42	8.29	258.22	15.39	20.64	10.37
DG125	41.06	27.99	38.63	78.48	4.15	6.07	68.45	9.05	287.99	19.02	40.66	10.41
DG203	41.81	25.85	36.92	76.15	4.18	6.05	61.96	9.27	214.00	16.34	35.93	10.66
DG707	42.58	22.01	32.14	76.78	4.30	6.70	64.74	8.19	221.78	27.51	39.73	10.61
DG745	42.43	22.78	31.24	77.90	4.24	6.18	61.27	8.86	209.57	23.60	42.08	10.98
DG768	41.21	22.99	37.46	82.47	4.27	6.44	66.98	9.28	245.53	16.49	41.00	10.49
DG839	41.14	23.15	37.80	76.17	4.27	6.29	60.96	8.51	224.66	29.92	38.21	10.53
DG848	42.49	27.84	36.69	81.21	4.11	6.84	66.58	9.40	235.80	29.39	34.87	10.44
MS018	42.75	26.08	32.13	76.40	4.16	6.59	65.37	8.75	289.87	15.27	32.87	10.91
MS019	41.46	24.56	36.48	73.45	4.23	6.51	67.37	8.16	262.04	25.50	37.66	10.43
MS053	42.50	27.10	38.20	71.22	4.24	6.57	69.17	8.44	231.06	16.11	33.42	10.81
MS055	42.48	27.00	34.91	77.85	4.11	6.07	62.75	8.25	295.00	22.46	40.62	10.27
MS079	42.56	24.47	34.68	76.54	4.12	6.40	68.37	8.83	284.01	25.60	40.84	10.77

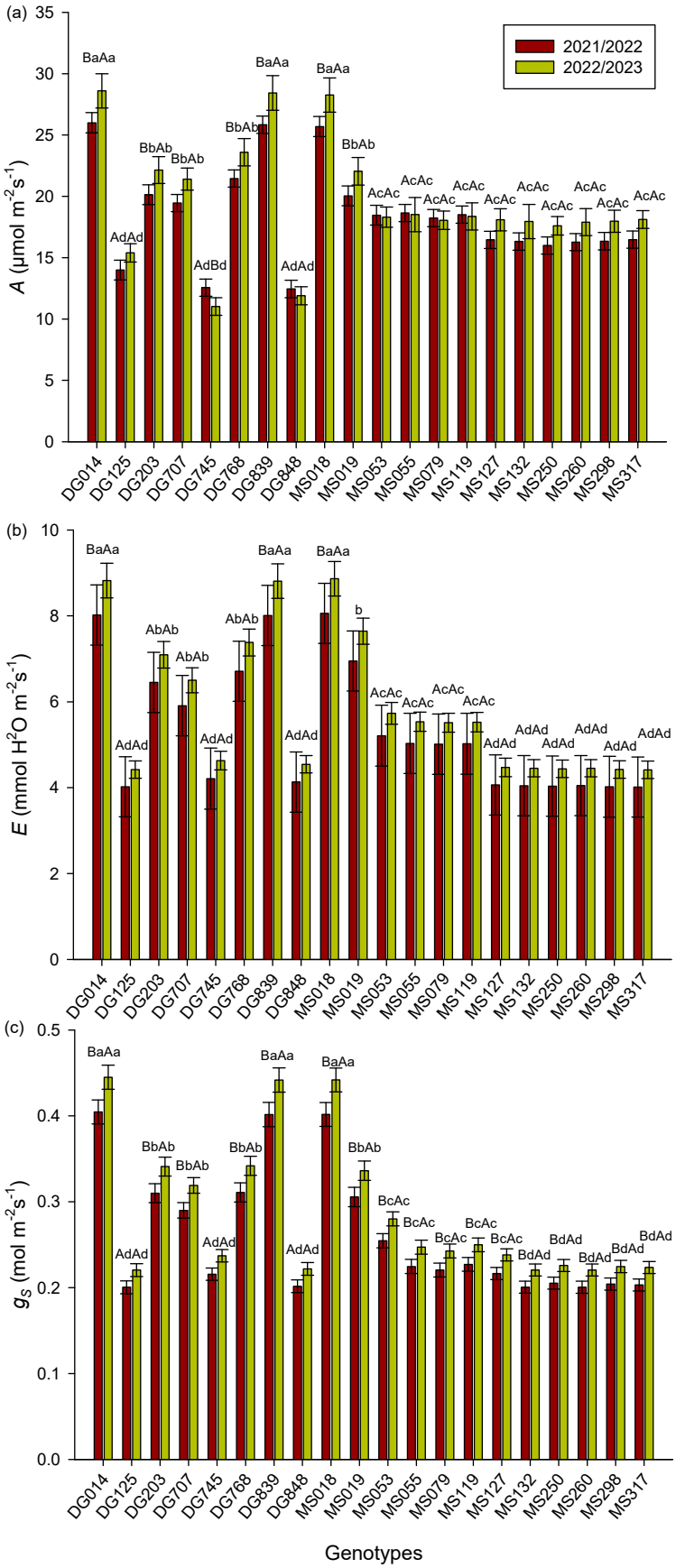

Figure S1. Net photosynthesis rate (A) (a), transpiration (*E*) (b) and stomatal conductance (*gs*) (c) in 20 cassava genotypes from South America (2021/2022 and 2022/2023). Different uppercase letters show differences when comparing growing seasons, and different lowercase letters indicate differences when comparing genotypes according to the Scott-Knott test (5%).