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### **Supplementary Material**

#### **Potassium management effects on yield and quality of cassava varieties in tropical sandy soils**

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## Supplementary Material

**Supplementary Table S1. Leaf K concentration, plant height, final plant population, number, mean length, mean diameter, and mean weight of roots, total and marketable root yield, concentrations of dry matter (DM) and K in the roots, cooking time, and cooked root firmness of the sweet cassava (variety IAC 576-70) as affected by the K rates and timings in two growing periods, and analyses of variance**

Values followed by the same letter within rows for the factors growing period or timing of K application, are not significantly different according to LSD test ( $P < 0.05$ ).

Variable	Growing period (GP)		Timing of K application (KT) <sup>a</sup>				Source of variation <sup>b</sup>					
	First	Secon d	p	p-1.5	p-3	p-1.5-3	GP	KT <sup>c</sup>	GP×KT <sup>d</sup>	K rate (KR)	GP×K R	KT×KR <sup>d</sup>
Leaf K concentration (g/kg)	12.6a	12.1a	12.3a	12.1a	12.6a	12.6a	NS <sup>e</sup> <0.00	NS	NS	<0.001	<0.001	NS
Plant height (cm)	131b	172a	153a	154a	150a	151a	1	NS	NS	0.012	<0.001	NS
Final plant population (plant/ha)	13624 a	13752 a	13607 a	13727 a	13661 a	13757 a	NS	NS	NS	NS	NS	NS
Root number (No./plant)	9.8a	8.7b	9.4a	9.2a	9.2a	9.3a	0.002 <0.00	NS	NS	0.015	NS	0.039
Root mean length (cm)	25.2b	28.4a	27.1a	26.9a	26.5a	26.7a	1	NS	NS	0.003	NS	NS
Root mean diameter (cm)	3.3a	3.2a	3.3a	3.2a	3.3a	3.3a	NS	NS	NS	NS	NS	NS
Root mean weight (kg/root)	0.21a	0.21a	0.21a	0.21a	0.21a	0.21a	NS	NS	0.046	NS	0.050	0.011
Total root yield (t/ha)	26.7a	26.1b	25.7b	25.5b	27.1a	27.2a	0.050 <0.00	8 0.01	<0.001	<0.001	NS	0.016
Marketable root yield (t/ha)	19.3a	15.6b	16.9b	16.7b	18.1a	18.2a	1 <0.00	2	<0.001	<0.001	NS	0.012
Root DM concentration (%)	41.8a	40.1b	40.8a	40.9a	41.0a	41.0a	1	NS	NS	0.050	NS	NS
Root K concentration (g/kg FW <sup>f</sup> )	2.4a	2.2b	2.3a	2.2a	2.3a	2.3a	0.001	NS	NS	0.001	NS	NS
Cooking time (min)	20.5a	18.3b	20.9a	20.2a	17.5b	19.0ab	0.003 <0.00	8 0.00	NS	<0.001	NS	0.059
Cooked root firmness (N)	4.7a	2.4b	3.8a	3.3b	3.3b	3.7a	1	1	NS	<0.001	<0.001	NS

<sup>a</sup>p: full K rate applied at planting; p-1.5: 1/2 of K rate applied at planting plus 1/2 applied at 1.5 months after planting (MP); p-3: 1/2 of K rate applied at planting plus 1/2 applied at 3 MP; p-1.5-3: 1/3 of K rate applied at planting plus 1/3 applied at 1.5 MP and 1/3 applied at 3 MP.

<sup>b</sup>Growing period × timing of K application × K rate interaction was not significant at  $P < 0.05$  for all variables.

<sup>c</sup>The timing of K application's main effect was determined considering only the three K rates (37.5, 75, and 150 kg/ha K).

<sup>d</sup>Interactions considering three K rates (37.5, 75, and 150 kg/ha K) × two growing periods or four timings of K application.

<sup>e</sup>Not significant at  $P < 0.05$ .

<sup>f</sup>Fresh weight.

**Supplementary Table S2. Leaf K concentration, plant height, final plant population, number, mean length, mean diameter, and mean weight of roots, total root yield, concentration of dry matter (DM), K and starch in the roots, and starch yield of the bitter cassava (variety IAC 13) as affected by the K rates and timings in two growing periods, and analyses of variance**

Values followed by the same letter within rows for the factors growing period or timing of K application, are not significantly different according to LSD test ( $P < 0.05$ ).

Variable	Growing period (GP)		Timing of K application (KT) <sup>a</sup>				Source of variation <sup>b</sup>					
	First	Second	p	p-3	p-12	p-3-12	GP	KT <sup>c</sup>	GP×KT <sup>d</sup>	K rate (KR)	GP×KR	KT×KR <sup>d</sup>
Leaf K concentration (g/kg)	11.4b	15.6a	13.4ab	14.2a	12.9b	13.5ab	<0.001	0.030	NS <sup>e</sup>	<0.001	NS	NS
Plant height (cm)	184b	197a	186	191	191	193	<0.001	NS	NS	<0.001	<0.001	NS
Final plant population (plant/ha)					1151							
Root number (No./plant)	10792b	13051a	12027	12017	6	12127	<0.001	NS	NS	NS	NS	NS
Root mean length (cm)	4.7b	6.8a	5.7	5.9	5.6	5.9	<0.001	NS	NS	NS	NS	NS
Root mean diameter (cm)	27.9a	26.3b	27.4	27.0	26.4	27.7	0.041	NS	NS	NS	NS	NS
Root mean weight (kg/root)	5.2a	5.4a	5.3	5.3	5.4	5.3	NS	NS	NS	0.011	NS	NS
Total root yield (t/ha)	1.06a	0.55b	0.74b	0.80b	0.91a	0.79b	<0.001	0.001	0.019	<0.001	NS	0.049
Root DM concentration (%)	52.1a	48.3b	47.0b	48.1b	53.1a	52.6a	0.002	<0.001	0.047	<0.001	0.023	0.050
Root K concentration (g/kg FW <sup>f</sup> )	43.9b	46.1a	45.0	44.5	45.3	45.2	<0.001	NS	NS	0.022	NS	NS
Root starch concentration (% FW)	2.4b	4.2a	3.1c	3.5a	3.2ab	3.4a	<0.001	0.022	0.017	<0.001	NS	NS
Starch yield (t/ha)	27.1b	33.4a	30.8ab	30.2ab	31.3a	28.7b	<0.001	0.094	NS	<0.001	NS	NS
Starch yield (t/ha)	14.0b	16.2a	14.4b	14.5b	16.4a	15.1b	<0.001	0.007	0.009	<0.001	NS	NS

<sup>a</sup>p: full K rate applied at planting; p-3: 1/2 of K rate applied at planting plus 1/2 applied at 3 months after planting (MP); p-12: 1/2 of K rate applied at planting plus 1/2 applied at 12 MP; p-3-12: 1/3 of K rate applied at planting plus 1/3 applied at 3 MP and 1/3 applied at 12 MP.

<sup>b</sup>Growing period × timing of K application × K rate interaction was not significant at  $P < 0.05$  for all variables.

<sup>c</sup>The timing of K application's main effect was determined considering only the three K rates (37.5, 75, and 150 kg/ha K).

<sup>d</sup>Interactions considering three K rates (37.5, 75, and 150 kg/ha K) × two growing periods or four timings of K application.

<sup>e</sup>Not significant at  $P < 0.05$ .

<sup>f</sup>Fresh weight.