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Soil quality bioindicators in initial eucalyptus growth under organomineral fertilization based on sugarcane filter cake

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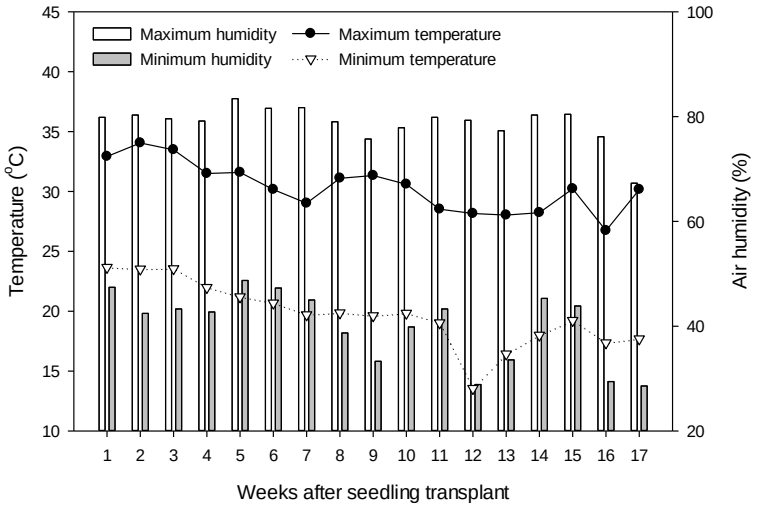
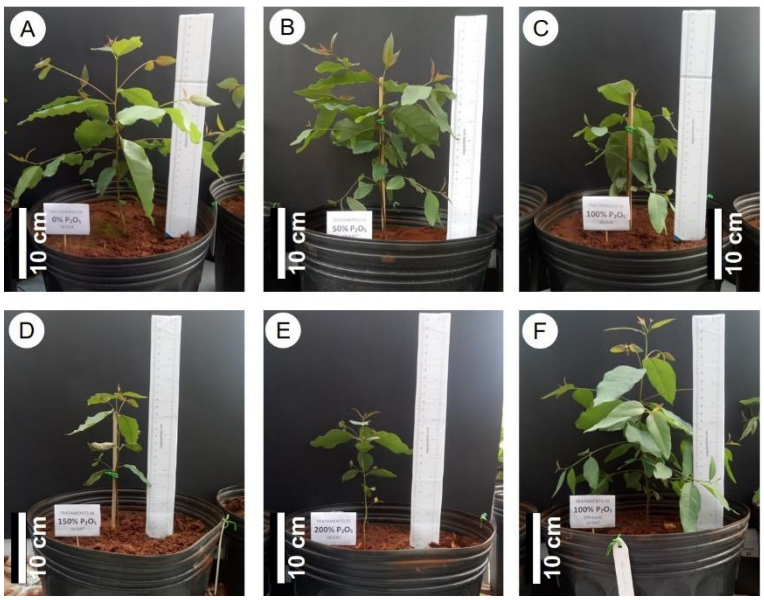
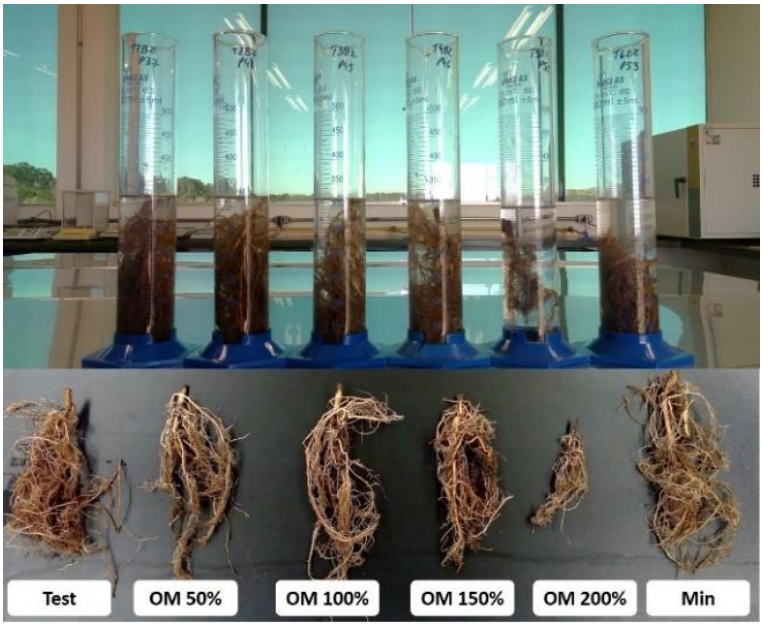


Supplementary Figure 1. Weather conditions while conducting the experiment.



Supplementary Figure 2. *E. urophylla* x *E. grandis* seedlings under organomineral fertilization based on sugarcane filter cake (OM) with five phosphorus levels as recommended for the crop and a treatment with mineral fertilizer (MF) at 30 days after transplantation: A - Absence of fertilizer; B - OM 50%; C - OM 100%; D - 150% FOM; E - FOM 200; F - 100% mineral fertilizer.

Supplementary Figure 3. *E. urophylla* x *E. grandis* seedlings under organomineral fertilization based on sugarcane filter cake (OM) with five phosphorus levels as recommended for the crop and a treatment with mineral fertilizer (MF) at 120 days after transplantation: A - Absence of fertilizer; B - OM 50%; C - OM 100%; D - 150% FOM; E - FOM 200; F - 100% mineral fertilizer.



Supplementary Figure 4. Root volume (cm^3) of *E. urophylla* x *E. grandis* seedlings under different doses of pelletized organomineral fertilizer (OM) and a mineral fertilizer (MF) treatment at 120 days after transplantation: Test - Absence of fertilizer; OM - Pelletized Organomineral Fertilizer; Min - Mineral Fertilizer.

Supplementary Table 1. Summary of the results of analysis of variance for height (cm), diameter at neck height (cm), chlorophyll *a* and chlorophyll *b* in the initial cultivation of *E. urophylla* x *E. grandis* under different doses of organomineral fertilizer.

Source of variation	DF	Square mean			
		Height	Diameter	*Chl a*	*Chl b*
Level (L)	4	1389.87*	0.3271*	146.88*	51.18*
Error – 1	12	90.63	0.0155	0.57	0.75
Time (T)	3	3764.94*	0.7780*	56.89*	14.40*
L x T	12	82.73*	0.0173*	10.01*	4.93*
Error – 2	45	27.41	0.0051	2.63	1.47
CV1 (%)		22.26	21.46	2.29	8.71
CV2 (%)		12.25	12.39	4.91	12.14

*Significant at 0.05 significance (p≤0.05)

Supplementary Table 2. Summary table of variance analysis for the variables leaf area (LA), fresh weight of stem (FWS), dry mass stem (DMS), fresh mass leaf (FML) dry mass leaf (DML) , fresh weight of root (FWR), dry mass root (DMR) and root volume (RV) in the initial cultivation of *E. urophylla* x *E. grandis* under different doses of organomineral fertilizer.

Source of variation	DF	Square mean							
		FA	FWL	DML	FWS	DMS	FWR	MSR	VR
Level (L)	4	5063358.3	811.5*	79.45*	1456.1*	110.92*	282.0*	17.91*	378.7*
Error – 1	12	464038.1	79.56	1.53	80.67	4.92	5.44	0.38	3.46
CV1 (%)		27.30	28.09	12.35	20.55	18.81	14.05	16.38	10.12

*Significant at 0.05 significance (p≤0.05)

Supplementary Table 3. Average leaf area (FA), fresh weight of leaf (FWL), dry mass leaf (DML), fresh weight of stem (FWS), dry mass stem (DMS), fresh weight of root (FWR), dry mass root (DMR) and root volume (RV) of *E. grandis* x *E. urophylla* plants under organomineral fertilization with five phosphorus levels (0%, 50%, 100%, 150% and 200%) in relation to the reference dose and a mineral treatment (100%) at 120 days after seedling transplantation.

Treatments	FA[1]	FWL[1]	DML[1]	FWS[1]	DMS[1]	FWR[1]	DMR[1]	RV[1]
	cm^2	---------- g ----------						cm^3
Without fertilization	2900 a	46.5 a	13.5 a	34.2 b	12.5 b	23.6 a	5.9 a	29.3 a
Mineral fertilizer	3750 a	65.5 a	16.5 a	53.9 a	16.9 a	21.2 a	4.6 b	24.5 b
Organomineral 50%	2841 a	56.5 a	15.6 a	43.9 b	13.7 b	21.5 a	4.8 b	21.5 b
Organomineral 100%	2648 a	49.4 a	13.9 a	35.0 b	10.6 c	14.2 b	3.1 c	15.8 c
Organomineral 150%	3518 a	55.7 a	13.9 a	38.5 b	10.9 c	20.8 a	4.6 b	22.3 b
Organomineral 200%	569 b	10.4 b	2.30 b	7.30 c	2.35 d	2.9 c	0.5 d	3.3 d
CV (%)[2]	25.12	19.62	16.89	22.95	10.84	15.95	15.68	11.14

[1]Within each variable analyzed, averages followed by distinct letters in the columns differ by the Skott-Konott tests at 5% probability; [2]CV = coefficient of variation.

Supplementary Table 4. Summary of results of analysis of variance for pH (H_2O), microbial biomass carbon (MBC), soil basal respiration (SBR) and metabolic quotient (qCO_2) in Red Latosol under *E. urophylla* x *E. grandis* seedlings cultivation under different doses of organomineral fertilizer at different evaluation times after transplantation.

Source of variation	GL	Square mean			
		pH (H_2O)	MBC	SBR	qCO_2
Level (L)	4	0.093*	18389*	0.139*	29.73*
Error – 1	12	0.085	246.1	0.007	0.304
Time (T)	3	5.410*	19117*	0.444*	1.12*
L x T	12	0.593*	7538*	0.074*	3.89*
Error – 2	45	0.070	224.7	0.006	0.432
CV1 (%)		5.49	8.78	10.00	10.75
CV 2 (%)		5.00	8.39	9.69	12.82

*Significant at 0.05 significance (p≤0.05)

Supplementary Table 5. Microbial biomass carbon (MBC) and soil basal respiration (SBR) in Red Latosol under *E. urophylla* x *E. grandis* cultivation and under organomineral fertilization with five phosphorus levels (0%, 50%, 100%, 150% and 200%) compared to the recommended dose at 30, 60, 90 and 120 days after seedling transplantation.

Treatments	MBC (µg g^{-1} dry soil)[1]				SBR (µg CO_2 g^{-1} dry soil h^{-1})[1]			
	Days after transplanting				Days after transplanting			
	30	**60**	**90**	**120**	**30**	**60**	**90**	**120**
Without fertilization	212.6 c	218.9 a	230.8 a	215.6 a	0.45 a	0.65 a	0.78 a	0.97 a
Mineral fertilizer	236.2 b	126.2 b	127.7 d	236.8 a	1.08 d	0.67 a	0.89 a	1.20 b
Organomineral 50%	307.0 a	131.0 b	156.6 c	223.0 a	0.98 c	0.62 a	0.86 a	0.93 a
Organomineral 100%	236.6 b	132.5 b	179.7 b	159.8 b	1.12 d	0.69 a	0.78 a	0.99 a
Organomineral 150%	118.2 e	110.6 b	115.4 d	205.6 a	0.85 b	0.67 a	0.82 a	1.08 b
Organomineral 200%	151.0 d	131.3 b	117.4 d	219.5 a	1.09 d	0.77 a	0.81 a	1.19 b
	CV1 (%)[2] = 9.2		CV2 (%)[2] = 8.9		CV1 (%)[2] = 10.3		CV2 (%)[2] = 9.4	

[1]Within each variable analyzed, averages followed by distinct letters in the columns differ by the Skott-Konott tests at 5% probability; [2]CV1 = coefficient of variation of the plot; CV2 = subplot coefficient of variation.

Supplementary Table 6. Chemical and physical characteristics of pelletized organomineral fertilizer.

Properties	Organomineral fertilizer
Total N (g $100g^{-1}$)	7.80
P_2O_5 (g $100g^{-1}$)	25.26
K_2O (g $100g^{-1}$)	8.52
Organic Carbon (g $100g^{-1}$)	10.48
Moisture (g $100g^{-1}$)	1.90
Cation Exchange Capacity ($mmol_c$ kg^{-1})	113.05
Medium hardness (kgf)	9.60
Minimum average hardness (kgf)	6.80
Average length (mm)	9.10
Average diameter (mm)	3.90