

Table S1 - Fertility (exchangeable elements) and grain size (particle size distribution) in the post-mining substrate (MS) and post-mining substrate and commercial substrate (MS+CS), total concentration of chemical elements in the post-mining substrate (MS) and concentration of chemical elements in the litter. SB - sum of bases; CEC - effective cation exchange capacity; CEC pH 7.0- cation exchange capacity in pH 7.0; BS - base saturation; AS - aluminum saturation; OM - organic matter; P-rem - remnant phosphorus; CS - coarse sand; FS-fine sand; S-sand; C- clay

Fertility Parameters and units of measure	MS		MS+CS		Total concentration of chemical elements (mg/kg)				Grain size (%)		chemical elements concentration (dag/kg)	
	MS	MS+CS	MS	MS	MS	MS	MS	MS	MS	Litter	Litter	
pH	4.98	6.27	Ca	218	Al	147561	CS	10.2	N	1.74		
P mg/dm ³	0.51	290	Mg	518	As	71	FS	4.8	P	0.050		
K mg/dm ³	0	753	K	354	Ba	29	S	5.8	K	0.080		
Ca ²⁺ cmolc/dm ³	0.44	5.22	P	396	Co	19	C	79	Ca	0.71		
Mg ²⁺ cmolc/dm ³	0.01	4.97	S	243	Cr	346			Mg	0.12		
Al ³⁺ cmolc/dm ³	0	0	Cu	17	Na	241			S	0.14		
H+Al cmolc/dm ³	2.76	3.9	Fe	174518	Ni	49			C	55		
SB cmolc/dm ³	0.45	12.1	Mn	410	Sc	14						
CEC cmolc/dm ³	0.45	12.1	Mo	5.32	Sr	59						
CEC _{pH7} cmolc/dm ³	3.21	16.0	Zn	36	Th	36						
BS %	14.1	75			Ti	14095						
AS %	0	0			V	325						
OM dag/kg	1.05	9.13			Y	24						
N dag/kg	0.03	0.185			Zr	459						
P-rem mg/L	13.3	29										
Density g/cm ³	1.04	0.7										

Table S2: Average values of parameters evaluated in plugs obtained in post-mining substrate (MS) and in the mixture of post-mining substrate and commercial substrate (MW+CS) 80 days after planting. Average shoot height and dry biomass values and number of panicles of plants that grew in the different treatments in the degraded area for seven months. Values followed by different letters in the same column indicate significant differences. P value <0.05.

	N° individuals	Shoot Height	Root Length	Root biomass	Shoot biomass	Root/Shoot	N° panicle
		cm	m	g	g		
Seedlings substrate							
MS	13.7a ± 0.54	2.57b ± 0.6	3.3b ± 0.29	0.02b ± 0.0002	0.019b ± 0.001	0.82a ± 0.02	-
MS+CS	12.9a ± 3.5	9.2a ± 1.5	15.4a ± 2.06	0.08a ± 0.02	0.21a ± 0.05	0.39b ± 0.06	-
Degraded area substrate							
Without biomass	-	10.1B ± 0.7	-	-	1.5B ± 0.54	-	7.9B ± 4.3
With biomass	-	15.5A ± 1.1	-	-	8.92A ± 2.35	-	62A ± 24

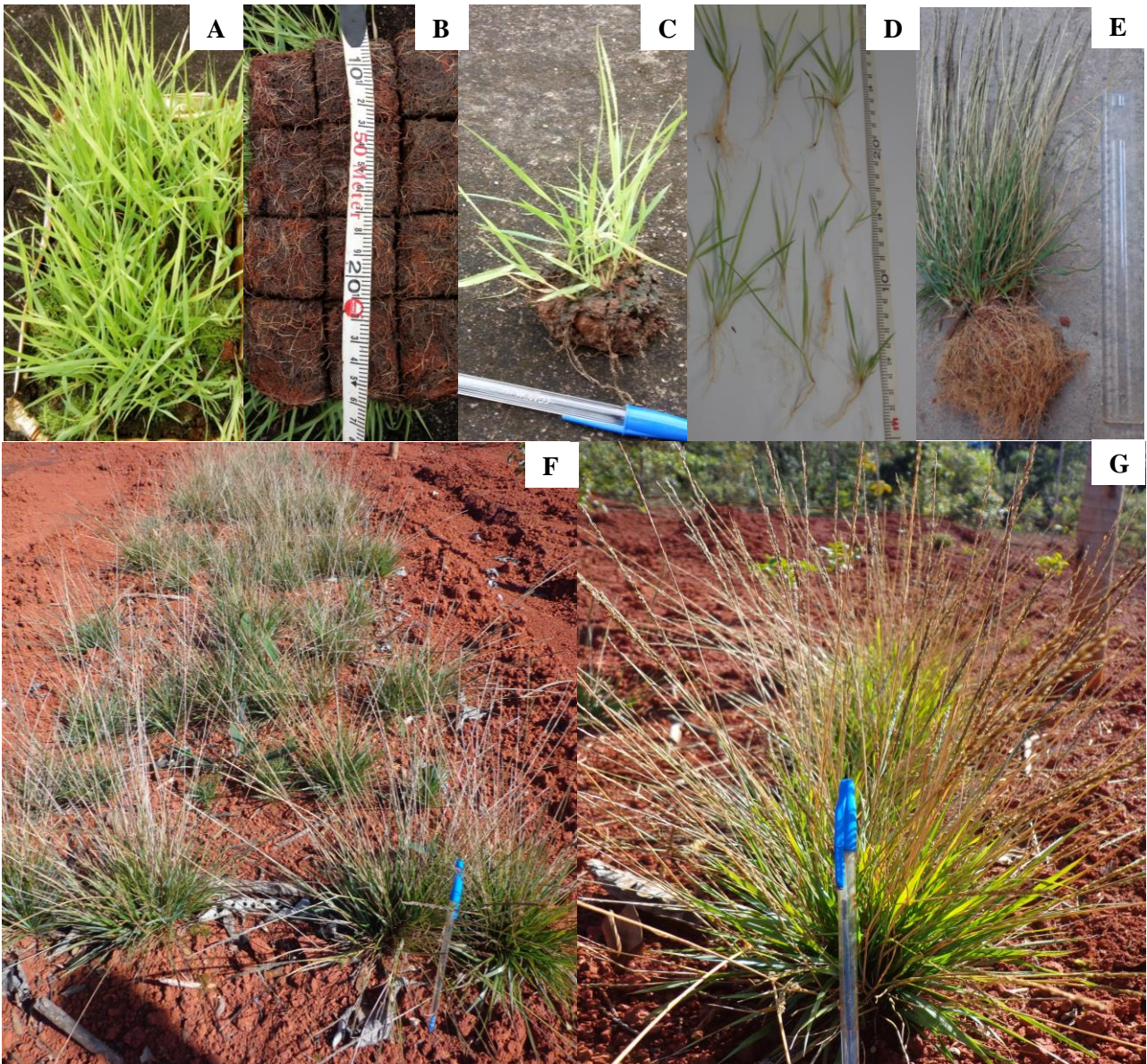


Figure S1: Image of sod, plug-plants and clumps (A); detail of the separation of plugs of a sample unit (B); Detail of a plug (C); individuals from a plug after removing the substrate adhered to roots (D); individual collected seven months after planting in the degraded area (E); plants in the experimental area (F); Detail of an individual in the experimental plot (G). All images are from plants of MS + CS treatment that grew in the field in treatment with the addition of litter.