

Supplementary Material

Tab. S1 - Main characteristics of the plots installed in the field. (*): Molfino (2012).

Sites	Seed origins											
	Jeeralang						Chivilingo					
	Southwest			Southeast			Southwest			Southeast		
Latitude	33° 20' 19.38" S			33° 48' 05.92" S			33° 20' 38.26" S			34° 10' 24.99" S		
Longitude	57° 48' 20.23" O			54° 56' 00.53" O			57° 51' 31.92" O			54° 17' 30.99" O		
Planting date	Spring 1999			Spring 2020			Autumn 2000			Spring 2021		
Planting distance (m)	3.3 × 2.1			3.8 × 1.9			4 × 2.6			3.7 × 1.8		
Trees ha ⁻¹	1364			1415			960			1664		
Evaluated area (ha)	1.05			0,97			1.05			1.06		
Trees sampled age ⁻¹	15			15			15			15		
CONEAT soils	9.1			2.12			9.3			2.12		
Soil type*	Argiudolls and Hapludetts			Argiudolls			Argiudolls and Hapludetts			Argiudolls. Hapludolls and Hapludalfs		
Age (yrs)	8.6	10.7	13	7.6	9.8	6.9	9.1	11.4	6.6	8.7	11.1	
Tillage	Ripper + Two small discs			Ripper D8 + discs + Small discs			Ripper + Two discs			Discs + Ripper D6 + Discs + Small discs		
Fertilizer (gr/plant of N/P/K)	80 g 15/40/0						80 g 15/40/0			80 g 7/40/40/0		

Tab. S2 - Statistics of the parameters of each of the fitted models.

Estimated	Sites	Parameter	Std. Error	t value	Pr(> t)	
<i>Ht</i>	Jeeralang at southwest	b ₀	0.001404	159.74	<2e-16	
		b ₁	0.025755	49.45	<2e-16	
	Jeeralang at southeast	b ₀	0.5382	64.88	<2e-16	
		b ₁	0.2447	37.99	<2e-16	
	Chivilingo at southwest	b ₀	0.018326	27.73	<2e-16	
		b ₁	0.000931	27.73	<2e-16	
	Chivilingo at southeast	b ₀	0.6257	-18.88	<2e-16	
		b ₁	0.2232	51.66	<2e-16	
	<i>Vi</i>	Jeeralang at southwest	b ₀	0.5475	-19.375	<2e-16
			b ₁	0.1389	12.571	1.19e-15
			b ₂	0.2516	5.168	6.53e-06
		Jeeralang at southeast	b ₀	6.611e-06	5.311	1.18e-05
b ₁			2.052e-02	47.757	<2e-16	
Chivilingo at southwest		b ₀	5.400e-06	4.165	0.000152	
		b ₁	6.509e-02	26.388	<2e-16	
		b ₂	1.019e-01	13.351	<2e-16	
Chivilingo at southeast		b ₀	9.649e-06	2.964	0.00493	
		b ₁	8.051e-02	23.706	<2e-16	
		b ₂	1.516e-01	7.169	0.00493	
<i>Wi</i>		Jeeralang at southwest	b ₀	0.6638	-8.560	9.39e-11
	b ₁		0.1563	12.205	2.12e-15	
	b ₂		0.2903	5.399	2.89e-06	
	Jeeralang at southeast	b ₀	0.30354	-14.48	1.57e-14	
		b ₁	0.03342	30.77	<2e-16	
	Chivilingo at southwest	b ₀	0.03799	2.759	0.00854	
		b ₁	0.098202	19.264	<2e-16	
		b ₂	0.154298	7.788	1.11e-09	
	Chivilingo at southeast	b ₀	0.2888	-17.14	<2e-16	
		b ₁	0.0304	35.61	<2e-16	

Fig. S1 - Soil classification (right) and regions prioritized for forest plantations (left) including trial locations in southwest and southeast Uruguay (orange).

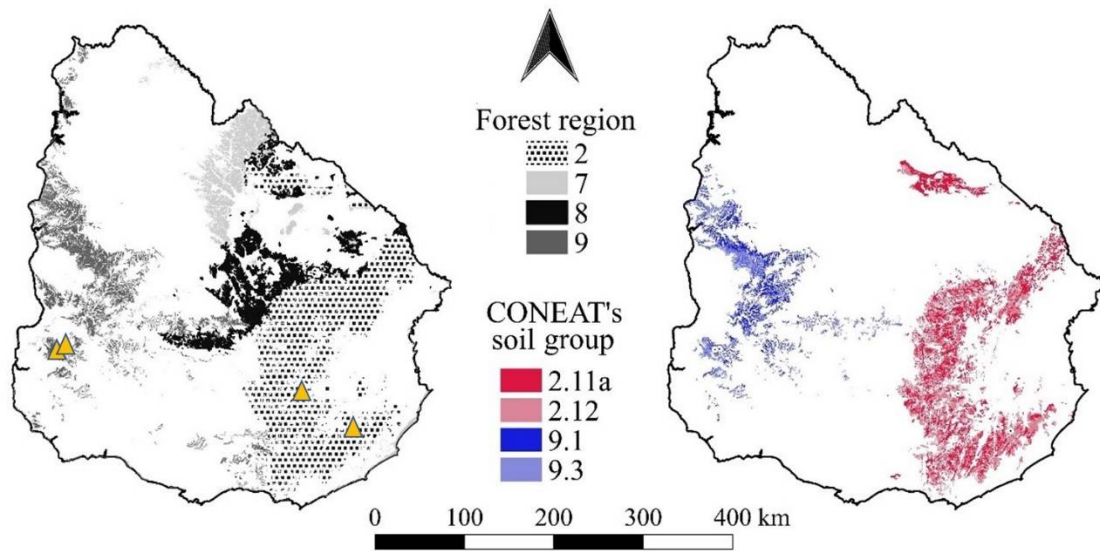


Fig. S2 - Graphical inspection of the model residuals of Wi (top), Ht (middle), and Vi (bottom) for Jeeralang provenance at southwest site.

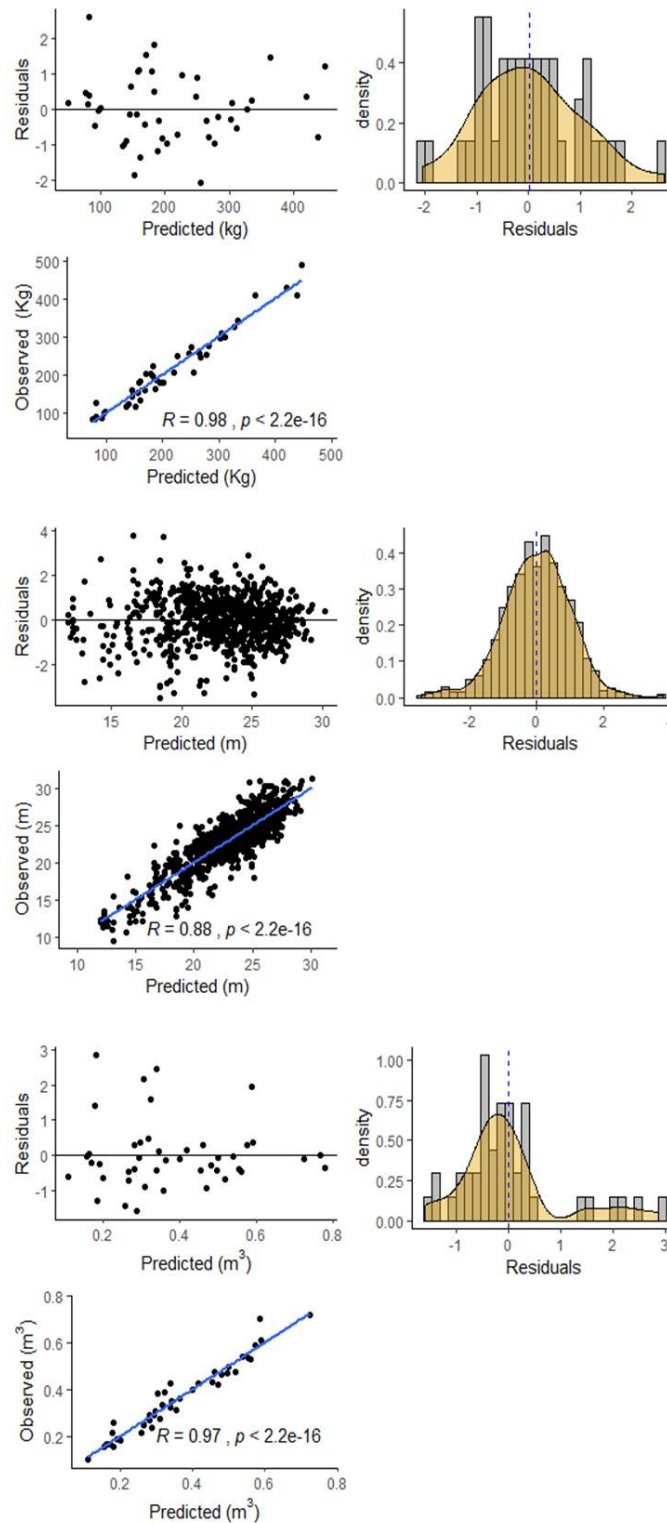


Fig. S3 - Graphical inspection of the model residuals of Ht (top), V_i (middle) and Wi (bottom) for Jeeralang provenance at southeast site.

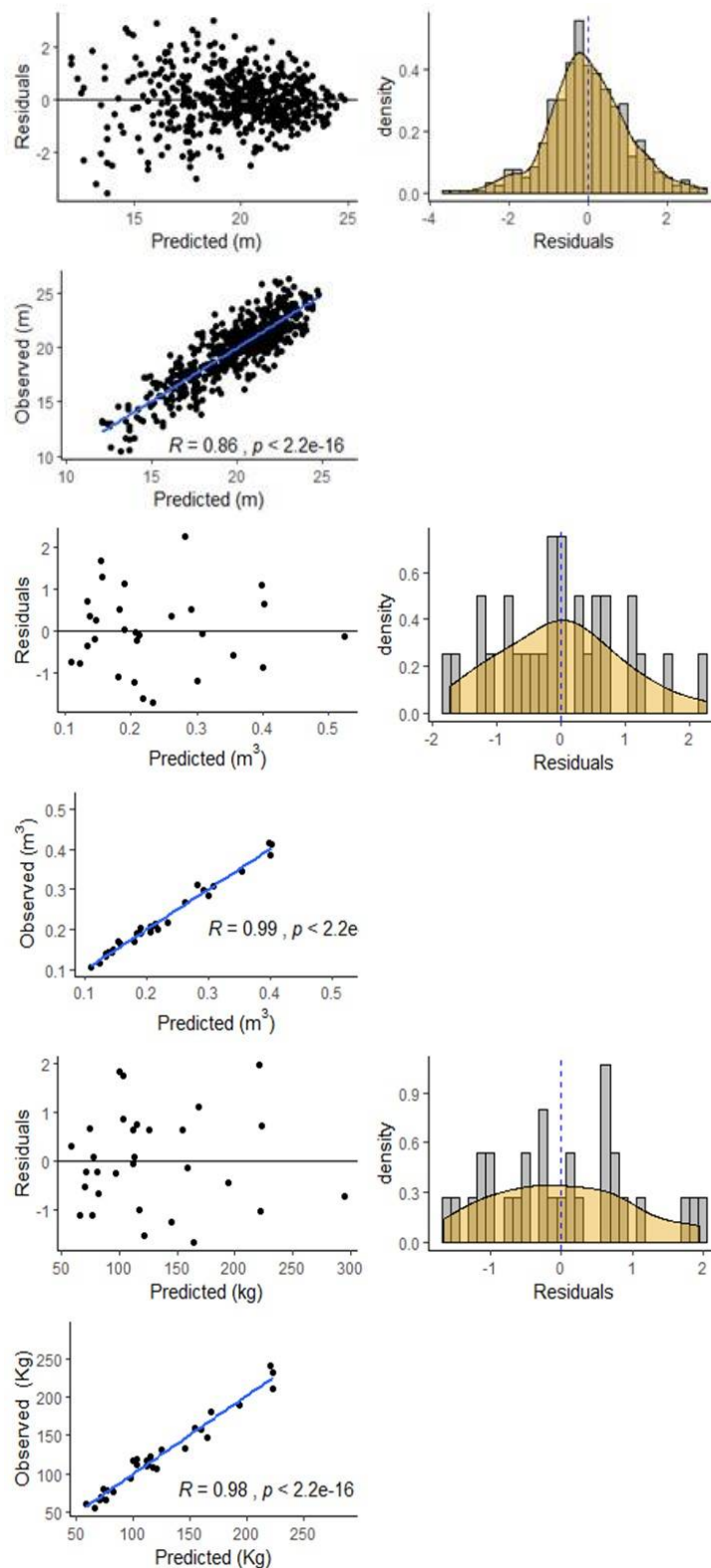


Fig. S4 - Graphical inspection of the model residuals of Ht (top), V_i (middle) and Wi (bottom) for Chivilingo provenance at southwest site.

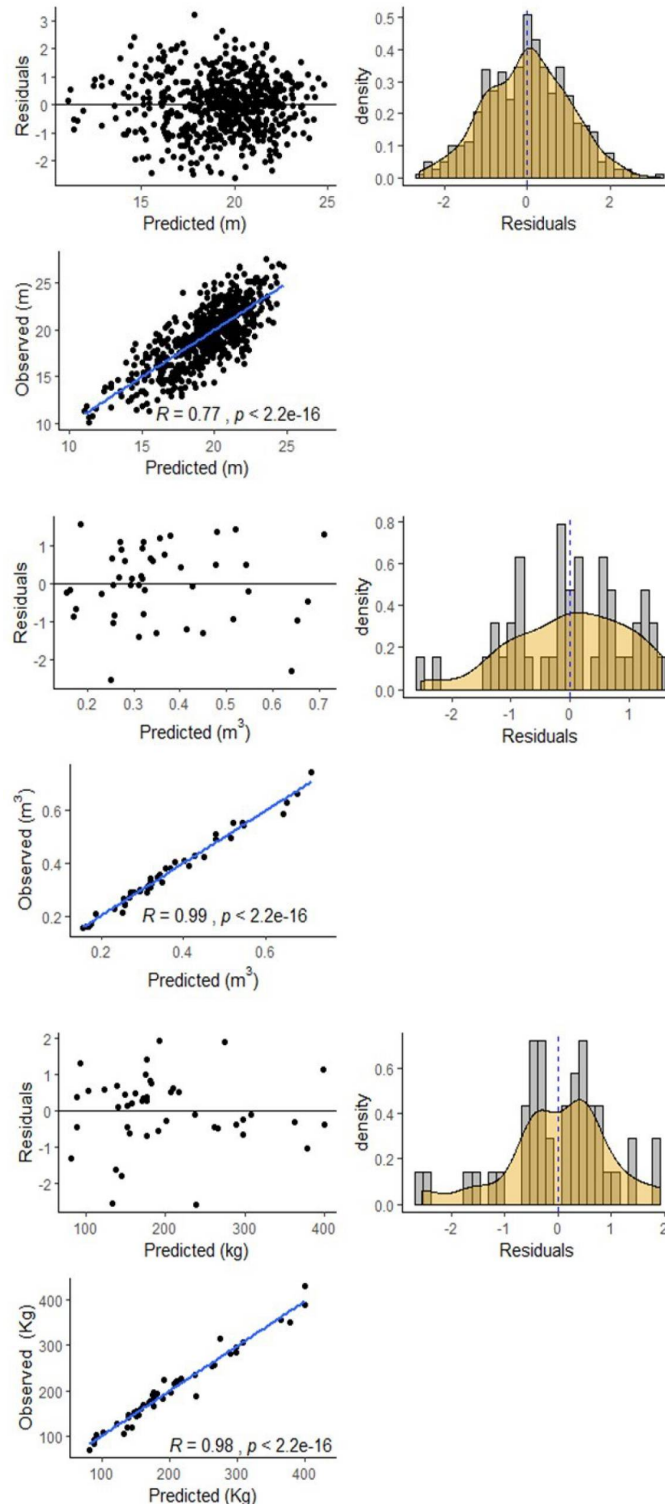
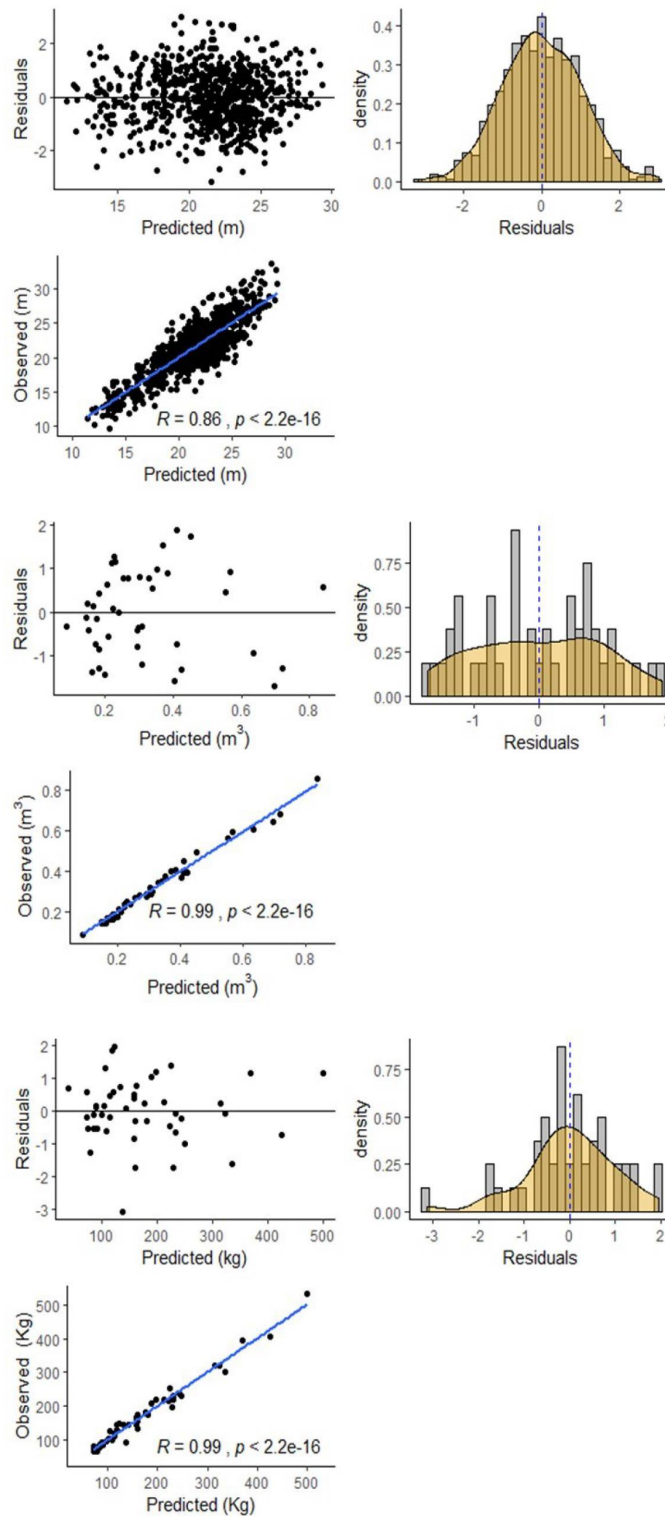


Fig. S5 - Graphical inspection of the model residuals of Ht (top), V_i (middle) and W_i (bottom) for Chivilingo provenance at southeast site.



Tab. S3 - Main characteristics of the ECF bleaching stages.

Characteristics	Acid stage	Chlorine dioxide	Extraction with peroxide	Chlorine dioxide	Peroxide
Concentration pulp (%)	10	10	10	10	10
T (°C)	95	85	85	80 a 85	85
Time (min.)	110	10	60	180	120
H ₂ SO ₄ (Kg ADt ⁻¹)	10				
NaOH (Kg ADt ⁻¹)			7.5		1.5
FKappa		0.21		0.21	
Kappa inlet.		8.3		2.4	
ClO ₂ (Kg ADt ⁻¹)		15.6		4.4	
H ₂ O ₂ (Kg ADt ⁻¹)			4.5		3.6
pH final	3,5	2	9 a 10	4 a 4,5	>10
MgSO ₄ ·7H ₂ O (K ADt ⁻¹)					1

Tab. S4 - Cost values of forestry operations and wood prices.

Operations	Values
Cost of plantation + control of weeds and ants (U\$S ha ⁻¹)	1551
Cost of maintenance after 18 months (U\$S ha ⁻¹)	15
Cost of coppice's management + control of weeds and ants (U\$S ha ⁻¹)	188
Cost of harvest (U\$S m ³ s ⁻¹)	21
Cost of wood extraction (U\$S ton ⁻¹)	182
Cost of transport (U\$S ton. km ⁻¹).	6,8
Price of Wood in forest (U\$S m ³ s ⁻¹)	34,2
Price of Wood at Montevideo's harbour (U\$S m ³ s ⁻¹)	62