

# C A M C O R E

## ANOVA AND MULTIPLE COMPARISONS FOR PROVENANCE AND FAMILY HEIGHT

### ONE YEAR MEASUREMENTS

TEST IDENTIFICATION: 20-26-06C1  
SPECIES: Pinus patula  
COMPANY: Klabin Do Parana Agro Florestal  
SITE NAME: Imbauzinho 117A  
LATITUDE: 24° 16' 10" S  
LONGITUDE: 50° 38' 25" W  
ELEVATION: 780 m  
ANNUAL PRECIPITATION: 1,473 mm

DATE PLANTED: October 1988  
DATE MEASURED: October 1989

### ANALYSIS OF VARIANCE

DEPENDENT VARIABLE: One Year Height (meters)

<u>SOURCE</u>	<u>DF</u>	<u>SUM OF SQUARES</u>	<u>F VALUE</u>
REP	8	0.94189688	1.69 ns
PROV	7	3.60079419	7.39 **
REP*PROV	56	3.90033407	1.86 **
FAM(PROV)	43	6.76469530	4.20 **
REP*FAM(PROV)	344	12.87086642	1.50 **
ERROR	2222	55.26441667	
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CORRECTED TOTAL	2680	83.38927452	

ns: Not significant

\*\* Significant at  $p < .01$

TEST MEAN  
0.787 m

C.V. (%)  
20.04  
220

## \*\*\*\*\* MEANS BY PROVENANCE \*\*\*\*\*

## WALLER-DUNCAN MULTIPLE COMPARISONS FOR ONE YEAR PROVENANCE HEIGHT

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

<u>Waller</u>	<u>Grouping</u>	<u>Mean</u>	<u>N</u>	<u>Provenance</u>	
	A	0.864	367	Pinal De Amoles	(11)
	A				
B	A	0.834	161	Zacualtipan	(12)
B	A				
B	A	0.810	51	Control	(999)
B					
B		0.782	430	Conrado Castillo	(8)
B					
B		0.781	261	Potrero De Monroy	(1)
B					
B		0.781	50	Control	(998)
		0.773	626	Llano De Las Carmonas	(13)
		0.753	735	Tlacotla	(10)

\* Control lots: 998 = Pinus elliottii, Commercial control  
 999 = Pinus taeda, Commercial control

## \*\*\*\*\* MEANS BY FAMILY \*\*\*\*\*

<u>Family</u>	<u>Provenance</u>	<u># Trees</u>	<u>% Survival</u>	<u>Mean Height (m)</u>	<u>C.V. (%)</u>
216	11	50	92.59	0.92	18.22
250	12	54	100.00	0.90	19.39
207	11	53	98.15	0.89	17.32
215	11	52	96.30	0.89	17.91
226	8	54	100.00	0.88	19.23
268	13	53	98.15	0.88	19.74
206	11	54	100.00	0.88	17.33
5	1	53	98.15	0.87	24.91
235	8	52	96.30	0.85	15.37
213	11	51	94.44	0.84	16.08
305	10	54	100.00	0.84	24.26
201	11	54	100.00	0.83	19.30
288	13	54	100.00	0.83	22.07
8	1	53	98.15	0.82	22.73
263	13	52	96.30	0.81	22.63
281	13	48	88.89	0.81	22.23
253	12	54	100.00	0.81	19.97
999	*	51	94.44	0.81	23.95
224	8	54	100.00	0.81	14.10
229	8	54	100.00	0.80	16.38
203	11	53	98.15	0.80	21.49
279	13	53	98.15	0.79	20.53
236	8	54	100.00	0.79	15.47
248	12	53	98.15	0.79	23.02
282	13	51	94.44	0.79	21.74
299	10	54	100.00	0.79	24.60
998	*	50	92.59	0.78	21.87
291	10	53	98.15	0.78	21.40
298	10	52	96.30	0.78	22.50
303	10	54	100.00	0.78	20.16
302	10	53	98.15	0.77	22.38
304	10	53	98.15	0.77	23.40
287	13	53	98.15	0.76	24.10
308	10	53	98.15	0.76	24.19
307	10	51	94.44	0.75	20.18
11	1	51	94.44	0.75	25.21
28	1	52	96.30	0.74	24.53
306	10	54	100.00	0.74	19.37
292	10	52	96.30	0.74	23.05
276	13	52	96.30	0.74	23.09
277	13	52	96.30	0.74	22.58
278	13	52	96.30	0.73	23.60

<u>Family</u>	<u>Provenance</u>	<u># Trees</u>	<u>% Survival</u>	<u>Mean Height (m)</u>	<u>C.V. (%)</u>
10	1	52	96.30	0.73	19.83
244	8	54	100.00	0.72	14.92
271	13	54	100.00	0.72	24.71
246	8	54	100.00	0.71	18.62
297	10	52	96.30	0.70	24.63
247	8	54	100.00	0.70	17.75
294	10	51	94.44	0.69	25.92
283	13	52	96.30	0.68	25.32
301	10	49	90.74	0.65	24.50

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OVERALL		2580	97.51	0.79	22.40
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The overall mean does not include control lots.

Provenance code: 1 = Potrero De Monroy, Mexico  
 8 = Conrado Castillo, Mexico  
 10 = Tlacotla, Mexico  
 11 = Pinal De Amoles, Mexico  
 12 = Zacualtipan, Mexico  
 13 = Llano De Las Carmonas, Mexico