

C A M C O R E

ANOVA AND MULTIPLE COMPARISONS FOR PROVENANCE AND FAMILY HEIGHT

FIVE YEAR MEASUREMENTS

TEST IDENTIFICATION: 06-06-23A
SPECIES: Pinus oocarpa
COMPANY: EMBRAPA/PNPF
SITE NAME: Felixlandia
LATITUDE: 18° 45' S
LONGITUDE: 44° 53' W
ELEVATION: 614 m
ANNUAL PRECIPITATION: 1220 mm

DATE PLANTED: December 1983
DATE MEASURED: December 1988

ANALYSIS OF VARIANCE

DEPENDENT VARIABLE: FIVE YEAR HEIGHT (meters)

<u>SOURCE</u>	<u>DF</u>	<u>SUM OF SQUARES</u>	<u>F VALUE</u>
REP	8	169.08811938	
PROV	8	302.33546862	4.87 **
REP*PROV	64	496.84290432	1.17 ns
FAM(PROV)	49	324.96865872	3.47 **
REP*FAM(PROV)	392	748.84617894	1.09 ns
ERROR	2101	3696.99766667	
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CORRECTED TOTAL	2622	5869.95807854	

ns: Not significant

** Significant at $p < .01$

TEST MEAN C.V. (%)
9.31 m 14.24

WALLER-DUNCAN MULTIPLE COMPARISONS FOR FIVE 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	10.14	45	M. P. R	(202)
	A				
B	A	9.71	393	El Castaño	
B	A				
B	A	9.57	42	Comm. control	(405)
B	A				
B	A	9.57	352	Guaimaca	
B					
B		9.43	399	San Marcos	
B					
B		9.42	362	San Luis	
B					
B	C	9.16	346	Las Crucitas	
B	C				
B	C	9.05	319	Tablazon	
	C				
	C	8.65	365	La Campa	

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WALLER-DUNCAN MULTIPLE COMPARISONS FOR FIVE YEAR FAMILY HEIGHT

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

<u>Waller</u>	<u>Grouping</u>	<u>Mean</u>	<u>N</u>	<u>Family</u>	<u>Provenance</u>
	A	10.36	50	102	4
	A				
	B	10.22	50	149	2
	B				
	B	10.19	48	146	2
	B				
	B	10.14	45	202	*
	B				
E	B	10.07	43	289	6
E	B				
E	B	9.96	42	350	7
E	B				
E	B	9.95	44	363	7
E	B				
E	B	9.93	53	159	2
E	B				
E	B	9.84	53	223	8
E	B				
E	B	9.83	47	147	2
E	B				
E	B	9.80	47	333	7
E	B				
E	B	9.74	43	353	7
E	B				
E	J	9.70	44	323	7
E	J				
E	J	9.64	46	141	2
E	J				
E	J	9.64	52	241	8
E	J				
E	J	9.64	46	97	4
E	J				
L	E	9.62	48	329	7
L	E				
L	E	9.62	45	234	8
L	E				
L	E	9.59	43	99	4
L	E				
L	E	9.57	42	405	*
L	E				
L	E	9.56	44	269	6
L	E				

<u>Waller</u>	<u>Grouping</u>	<u>Mean</u>	<u>N</u>	<u>Family</u>	<u>Provenance</u>
L E J M I D H K G C F		9.50	54	245	8
L E J M I D H K G C F					
L E J M I D H K G C F		9.50	52	158	2
L E J M I D H K G C F					
L E J M I D H K G C F N		9.49	43	96	4
L E J M I D H K G F N					
L E J M I D H K G F N		9.48	36	207	9
L E J M I H K G F N					
L E J M I H K G O F N		9.43	48	95	4
L E J M I H K G O F N					
L E J M I H K G O F N		9.37	41	196	9
L J M I H K G O F N					
L J M I P H K G O F N		9.29	46	236	8
L J M I P H K G O N					
L Q J M I P H K G O N		9.23	48	247	8
L Q J M I P H K G O N					
L Q J M I P H K G O R N		9.22	47	155	2
L Q J M I P H K G O R N					
L Q J M I P H K G O R N		9.21	41	359	7
L Q J M I P H K G O R N					
L Q J M I P H K G O R N		9.21	53	219	8
L Q J M I P H K G O R N					
L Q J M I P H K G O R N		9.21	45	265	6
L Q J M I P H K G O R N					
L Q J M I P H K G O R N		9.16	50	157	2
L Q J M I P H K G O R N					
L Q J M I P H K G O R N		9.15	40	400	9
L Q J M I P H K O R N					
L Q J M I P H K O R N		9.10	47	277	6
L Q J M I P H K O R N					
L Q J M I P H K O R N		9.10	48	250	8
L Q J M I P K O R N					
L Q J M I P K O R N		9.09	46	94	4
L Q J M I P K O R N					
L Q J M I P K O R N		9.08	40	284	6
L Q J M P K O R N					
L Q J M P K S O R N		9.01	43	372	5
L Q M P K S O R N					
L Q M P K S O R N		8.98	47	188	9
L Q M P K S O R N					
L Q M P K S O R N		8.97	37	178	9
L Q M P K S O R N					
L Q M P K S O R N		8.94	41	187	5
L Q M P K S O R N					
L Q M P K S O R N		8.94	41	384	9
L Q M P S O R N					

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<u>Waller Grouping</u>				<u>Mean</u>	<u>N</u>	<u>Family</u>	<u>Provenance</u>
L Q	M	P	S O R N	8.92	50	381	5
L Q	M	P	S O R N				
L Q	M	P	S O R N	8.92	41	192	9
Q	M	P	S O R N				
Q	M	P	S O R N	8.81	45	267	6
Q	M	P	S O R N				
Q	M	P	S O R N	8.81	40	105	4
Q		P	S O R N				
Q		P	S O R N	8.79	46	110	4
Q		P	S O R				
Q		P	T S O R	8.76	51	377	5
Q		P	T S O R				
Q		P	T S O R	8.73	42	282	6
Q		P	T S R				
Q		P	T S R	8.65	40	296	6
Q		P	T S R				
Q		P	T S R	8.64	36	397	9
Q		P	T S R				
Q		P	T S R	8.64	45	375	5
Q			T S R				
Q			T S R	8.55	48	395	5
Q			T S R				
Q			T S R	8.52	43	338	7
Q			T S				
Q			T S	8.34	39	388	5
Q			T				
Q			T	8.07	48	369	5

Provenance code: 2 = El Castaño, Guatemala
 4 = San Luis, Guatemala
 5 = La Campa, Honduras
 6 = Las Crucitas, Honduras
 7 = Guaimaca, Honduras
 8 = San Marcos, Honduras
 9 = Tablazon, Honduras

* Control lots: 202 = Pinus tecunumanii, Mt. Pine Ridge, Belize
 405 = Pinus oocarpa, Commercial control CAFMA