

# C A M C O R E

## ANOVA AND MULTIPLE COMPARISONS FOR PROVENANCE AND FAMILY HEIGHT

### FIVE YEAR MEASUREMENTS

TEST IDENTIFICATION: 06-04-16A  
SPECIES: Pinus oocarpa  
COMPANY: CONARE  
SITE NAME: Chaguaramas  
LATITUDE: 8° 42' N  
LONGITUDE: 62° 45' W  
ELEVATION: 40 m  
ANNUAL PRECIPITATION: 900 - 1100 mm

DATE PLANTED: December 1983  
DATE MEASURED: January 1989

### 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	57.81072849	
PROV	11	341.09458687	6.90 **
REP*PROV	87	390.99545998	0.58 ns
FAM(PROV)	36	278.04498456	3.79 **
REP*FAM(PROV)	288	586.56905854	1.01 ns
ERROR	2110	4253.47310409	
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CORRECTED TOTAL	2540	6070.48246360	

ns: Not significant

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

TEST MEAN                      C.V. (%)  
8.59 m                          16.54

## 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	9.0345	249	Las Crucitas
	A			
	A	8.9902	51	M. P. R. (202)
	A			
	A	8.9681	405	Mt. Pine Ridge
	A			
B	A	8.8134	307	San Marcos
B	A			
B	A	8.6854	398	El Castaño
B	A			
B	A	8.5576	33	Comm. Control (Pch)
B	A			
B	A	8.5334	338	San Luis
B	A			
B	A	8.2686	277	Tablazon
		8.1259	54	Comm. Control (Pcc)
		8.1034	207	Las Crucitas (H/5/77)
		8.0240	154	Nirgua (FUD)
	D	7.4059	68	La Lagunilla

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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	9.6113	53	463	10
		A				
	B	A	9.4059	51	143	2
	B	A				
	B	A C	9.3808	52	283	6
	B	A C				
	B D	A C	9.3412	51	276	6
	B D	A C				
	B D	A C	9.3264	53	230	8
	B D	A C				
	B D	A C	9.3245	53	479	10
	B D	A C				
E	B D	A C	9.1208	53	241	8
E	B D	A C				
E	B D	A C	9.1113	53	141	2
E	B D	A C				
E	B D	A C	9.0870	54	444	10
E	B D	A C				
E	B D	A C F	9.0154	52	478	10
E	B D	A C F				
E	B D	A C F	9.0020	51	487	10
E	B D	A C F				
E	B D	A C F	8.9902	51	202	*
E	B D	A C F				
E	B D	A C F	8.9863	51	109	4
E	B D	A C F				
E	B D	A C F	8.9857	35	194	9
E	B D	A C F				
E	B D	A C F	8.9757	37	146	2
E	B D	A C F				
E	B D	A C F	8.9620	50	290	6
E	B D	A C F				
E	B D	A C F	8.9585	53	97	4
E	B D	A C F				
E	B D	G C F	8.9151	53	157	2
E	B D	G C F				
E	B D	G C F	8.8675	40	228	8
E	B D	G C F				
E	B D	G H C F	8.7729	48	292	6
E	D	G H C F				
E	I D	G H C F	8.7519	54	246	8
E	I D	G H C F				

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Waller	Grouping	Mean	N	Family	Provenance
E	I D G H C F	8.7444	54	233	8
E	I D G H F				
E	I D G H J F	8.7020	49	103	4
E	I G H J F				
E	I K G H J F	8.6708	48	274	6
E	I K G H J F				
E	I K L G H J F	8.6500	46	515	10
E	I K L G H J F				
E	I M K L G H J F	8.5576	33	Pch	*
E	I M K L G H J F				
E	I M K L G H J F	8.5333	54	139	2
E	I M K L G H J F				
E	I M K L G H J F	8.5000	52	439	10
E	I M K L G H J F				
E	I M K L G H J F	8.4816	49	148	2
E	I M K L G H J F				
E	I M K L G H J F	8.4714	28	184	9
	I M K L G H J F				
N	I M K L G H J F	8.4091	44	482	10
N	I M K L G H J F				
N	I M K L G H J F	8.3898	49	117	4
N	I M K L G H J				
N	I M K L G H J	8.3029	35	165	9
N	I M K L G H J				
N	I M K L G H J	8.2870	46	187	9
N	I M K L G H J				
N	I M K L G H J	8.2800	50	105	4
N	I M K L H J				
N	I M K L O H J	8.2094	53	99	4
N	I M K L O H J				
N	I M K L O H J	8.1620	50	155	2
N	I M K L O H J				
N	I M K L O H J	8.1588	51	182	9
N	I M K L O H J				
N	I M K L O H J	8.1259	54	Pcc	*
N	I M K L O J				
N	I M K L O J	8.1034	207	H/5/77	*
N	M K L O J				
N	M K L O J	8.0849	53	236	8
N	M K L O J				
N	M K L O J	8.0739	46	180	9
N	M K L O				
N	M K L O	8.0240	154	FUD	*
N	M L O				
N	M L O	8.0182	33	111	4
N	M O				

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<u>Waller Grouping</u>			<u>Mean</u>	<u>N</u>	<u>Family</u>	<u>Provenance</u>
N	M	O	7.9431	51	150	2
N		O				
N	P	O	7.7611	36	167	9
	P	O				
	P	O	7.5923	26	5	3
	P					
	P		7.2905	42	162	3

Provenance code: 2 = El Castaño, Guatemala  
3 = La Lagunilla, Guatemala  
4 = San Luis, Guatemala  
6 = Las Crucitas, Honduras  
8 = San Marcos, Honduras  
9 = Tablazon, Honduras  
10 = Mt. Pine Ridge, Belize

\* Control lots: Pcc = P. caribaea var caribaea, Commercial control  
Pch = P. caribaea var hondurensis, Commercial control  
202 = P. tecunumanii, Mt. Pine Ridge, Belize  
H/5/77 = P. oocarpa, Las Crucitas, Honduras  
FUDECO = P. oocarpa, Nirgua, Venezuela