

C A M C O R E

ANOVA AND MULTIPLE COMPARISONS FOR PROVENANCE AND FAMILY HEIGHT

THREE YEAR MEASUREMENTS

TEST IDENTIFICATION: 10-03-20A
SPECIES: Pinus caribaea
COMPANY: Carton de Venezuela
SITE NAME: El Hierro
LATITUDE: 9° 10' N
LONGITUDE: 69° 20' W
ELEVATION: 150 m
ANNUAL PRECIPITATION: 1123 - 1916 mm

DATE PLANTED: July 1986
DATE MEASURED: August 1989

ANALYSIS OF VARIANCE

DEPENDENT VARIABLE: Three Year Height (meters)

<u>SOURCE</u>	<u>DF</u>	<u>SUM OF SQUARES</u>	<u>F</u> <u>VALUE</u>
REP	8	354.49571350	2.78 ns
PROV	1	25.17102789	1.58 ns
REP*PROV	8	127.63583266	8.25 **
FAM(PROV)	63	166.10830017	1.36 *
REP*FAM(PROV)	479	925.96419927	2.09 **
ERROR	2108	1953.91366667	
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CORRECTED TOTAL	2667	3503.18271365	

ns: Not significant

* Significant at $p < .05$

** Significant at $p < .01$

TEST MEAN
4.19 m

C.V. (%)
22.98

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***** MEANS BY PROVENANCE *****

<u>Provenance</u>	<u># Trees</u>	<u>% Survival</u>	<u>Mean Height (m)</u>	<u>C.V. (%)</u>	<u>Mean D.B.H. (cm)</u>
Poptun	872	85.49	4.3	27.11	7.9
Guanaja	1796	72.48	4.1	27.42	7.1

Note: The Waller-Duncan multiple comparison procedure requires at least three provenances to be carried out. The results of the Anova show that these provenance means are not significantly different the $\alpha = 5\%$ level.

Provenance code: 3 = Guanaja, Honduras
4 = Poptun, Guatemala

* No control lots were used in this project.

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***** MEANS BY FAMILY *****

<u>Family</u>	<u>Prov</u>	<u># Trees</u>	<u>% Survival</u>	<u>Mean Height (m)</u>	<u>C.V. (%)</u>	<u>Mean D.B.H. (cm)</u>
54	4	49	90.74	4.8	23.82	8.9
55	4	50	92.59	4.7	22.10	8.3
37	4	46	85.19	4.7	20.74	8.8
61	4	41	75.93	4.5	21.63	8.4
63	4	45	83.33	4.5	24.15	8.2
351	3	37	68.52	4.4	32.38	7.7
68	4	44	81.48	4.4	30.28	7.7
381	3	41	75.93	4.4	24.01	7.6
329	3	36	66.67	4.4	25.01	7.7
57	4	43	79.63	4.4	28.18	8.3
366	3	39	72.22	4.4	25.52	7.5
361	3	36	66.67	4.4	25.31	7.5
385	3	45	83.33	4.4	21.34	7.8
45	4	46	85.19	4.4	20.75	8.3
368	3	30	55.56	4.3	23.80	7.5
340	3	41	75.93	4.3	33.44	7.4
388	3	38	70.37	4.3	27.16	7.2
50	4	40	83.33	4.3	25.45	7.8
345	3	51	94.44	4.3	28.50	7.4
325	3	39	72.22	4.3	20.10	7.5
396	3	28	51.85	4.3	22.13	7.3
357	3	44	81.48	4.3	25.03	7.3
383	3	48	88.89	4.3	22.45	7.2
36	4	47	87.04	4.3	22.10	7.6
380	3	46	85.19	4.3	30.82	7.3
372	3	45	83.33	4.3	27.91	7.1
331	3	40	74.07	4.3	26.16	7.6
375	3	36	66.67	4.3	24.58	7.4
337	3	43	79.63	4.3	22.78	7.5
75	4	47	87.04	4.3	30.78	7.8
374	3	32	59.26	4.2	27.57	7.1
69	4	48	88.89	4.2	23.35	7.8
386	3	38	70.37	4.2	23.78	7.5
360	3	47	87.04	4.2	25.36	7.5
10	4	49	90.74	4.2	28.69	7.4
335	3	36	66.67	4.2	29.94	7.7
349	3	43	79.63	4.2	23.53	7.2
391	3	40	74.07	4.2	29.64	6.9

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***** MEANS BY FAMILY *****

<u>Family</u>	<u>Prov</u>	<u># Trees</u>	<u>% Survival</u>	<u>Mean Height (m)</u>	<u>C.V. (%)</u>	<u>Mean D.B.H. (cm)</u>
379	3	29	53.70	4.2	29.28	7.2
21	4	44	81.48	4.2	23.67	7.7
376	3	41	75.93	4.2	22.26	7.2
324	3	31	64.58	4.1	27.35	7.0
377	3	44	81.48	4.1	26.93	6.9
333	3	29	53.70	4.1	31.68	6.6
355	3	37	68.52	4.1	35.70	7.1
378	3	47	87.04	4.1	27.93	7.1
362	3	41	75.93	4.0	32.65	6.6
395	3	38	70.37	4.0	26.90	6.9
394	3	45	83.33	4.0	34.68	7.1
398	3	43	79.63	4.0	23.65	6.5
392	3	38	70.37	4.0	24.68	6.5
20	4	50	92.59	3.9	26.69	7.6
43	4	47	87.04	3.9	30.03	7.5
330	3	37	68.52	3.9	29.68	6.8
38	4	44	81.48	3.9	32.24	7.4
382	3	44	81.48	3.9	30.70	6.4
397	3	37	68.52	3.9	33.73	6.6
35	4	44	81.48	3.9	29.11	7.3
387	3	32	59.26	3.8	22.96	6.3
364	3	38	70.37	3.8	27.74	6.7
393	3	33	61.11	3.8	26.71	6.3
384	3	41	75.93	3.8	27.07	6.5
389	3	40	74.07	3.8	26.93	6.2
64	4	48	88.89	3.7	39.08	6.8
370	3	32	59.26	3.6	31.61	6.3

OVERALL		2668	76.27	4.2	27.35	7.4
