

C A M C O R E

ANOVA AND MULTIPLE COMPARISONS FOR PROVENANCE AND FAMILY HEIGHT

THREE YEAR MEASUREMENTS

TEST IDENTIFICATION: 16-03-01D
SPECIES: Pinus tecunumanii - Low elevation
COMPANY: Cartón 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: July 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	69.99279602	1.79	ns
PROV	3	17.72942198	1.21	ns
REP*PROV	22	107.64809302	5.07	**
FAM(PROV)	66	129.53460865	2.03	**
REP*FAM(PROV)	319	307.71660890	1.39	**
ERROR	1412	977.20950000		
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CORRECTED TOTAL	1832	1703.99120568		

ns: Not significant

** Significant at $p < .01$

TEST MEAN
4.85 m

C.V. (%)
17.14

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

The Waller-Duncan multiple comparison procedure shows no significant differences among the mean provenance heights.

<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>
Villa Santa	455	70.22	5.1	19.16	6.5
San Esteban	466	71.91	4.9	19.95	6.3
San Francisco	450	69.44	4.7	20.51	5.8
Jocon	462	71.30	4.7	18.96	5.8

* No control lots were used in this project.

***** 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>
593	4	40	74.07	5.4	18.70	6.8
586	4	41	75.93	5.4	14.30	6.7
538	2	42	77.78	5.4	17.89	7.0
533	2	50	92.59	5.4	15.50	7.1
564	4	41	75.93	5.3	15.27	7.0
590	4	42	77.78	5.2	18.93	6.5
571	4	37	68.52	5.2	17.54	6.5
619	1	37	68.52	5.1	18.25	5.7
524	2	36	66.67	5.1	15.55	6.7
525	2	43	79.63	5.1	19.89	6.7
471	3	46	85.19	5.0	16.87	6.7
536	2	38	70.37	5.0	22.72	6.3
587	4	35	64.81	5.0	23.51	6.2
632	1	39	72.22	5.0	18.87	6.3
633	1	38	70.37	5.0	15.45	6.4
531	2	37	68.52	5.0	16.90	6.5
592	4	41	75.93	5.0	18.74	6.2
501	3	41	75.93	4.9	22.95	6.3
530	2	35	64.81	4.9	18.85	5.9
488	3	37	68.52	4.9	15.88	6.4
572	4	28	51.85	4.9	22.24	6.1
635	1	38	70.37	4.9	15.63	5.9
567	4	38	70.37	4.8	17.06	6.7
534	2	30	55.56	4.8	21.52	6.1
596	4	42	77.78	4.8	19.41	6.1
578	4	41	75.93	4.8	20.88	6.6
520	2	37	68.52	4.8	14.91	6.0
521	2	40	74.07	4.8	14.73	6.3
636	1	40	74.07	4.8	20.47	5.6
623	1	37	68.52	4.8	22.89	5.5
473	3	40	74.07	4.7	22.09	5.6
478	3	44	81.48	4.7	19.15	5.7
483	3	35	64.81	4.7	18.83	5.6
475	3	39	72.22	4.7	22.79	6.4
503	3	34	62.96	4.7	15.21	5.3
629	1	41	75.93	4.7	20.76	5.4
505	3	42	77.78	4.6	16.36	6.1
647	1	38	70.37	4.6	15.32	5.8
597	4	29	53.70	4.6	18.51	5.7
637	1	44	81.48	4.6	16.39	5.5

***** 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>
481	3	28	51.85	4.5	23.64	5.3
469	3	29	53.70	4.5	27.86	4.9
634	1	35	64.81	4.4	20.35	5.8
529	2	38	70.37	4.4	23.09	5.7
485	3	35	64.81	4.4	24.13	4.8
631	1	39	72.22	4.4	16.25	5.9
527	2	40	74.07	4.3	28.27	5.5
626	1	36	66.67	4.2	18.86	5.3
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OVERALL		1833	70.72	4.9	19.87	6.1

The overall values do not include control lots.

Provenance code: 1 = Jocon, Honduras
 2 = San Esteban, Honduras
 3 = San Francisco, Honduras
 4 = Villa Santa, Honduras