

C A M C O R E
FIVE YEAR MEASUREMENTS

TEST IDENTIFICATION: 05-04-05A
 SPECIES: Pinus caribaea
 COMPANY: PROFORCA
 SITE NAME: Chaguaramas
 LATITUDE: 8° 42' N
 LONGITUDE: 62° 45' W
 ELEVATION: 40 m
 ANNUAL PRECIPITATION: 900 - 1100 mm

DATE PLANTED: November 1984
 DATE MEASURED: November 1989

ANALYSIS OF VARIANCE

- DEPENDENT VARIABLE: Five Year Volume (cubic meters)

<u>SOURCE</u>	<u>DF</u>	<u>SUM OF SQUARES</u>	<u>F VALUE</u>
REP	8	0.04374053	8.24 **
PROV	9	0.01048940	1.76 ns
REP*PROV	72	0.04777005	3.05 **
FAM(PROV)	39	0.03998410	4.71 **
REP*FAM(PROV)	303	0.06594832	0.97 ns
ERROR	2049	0.46120980	
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CORRECTED TOTAL	2480	0.71955410	

ns: Not significant

** Significant at $p < .01$

TEST MEAN
 0.03563 m³

C.V. (%)
 42.11

The analysis of variance shows no significant differences among the provenances.

	<u>Provenance</u>	<u>Tree Volume (cubic m)</u>	<u>N</u>	<u>% Surv</u>	<u>% Fork</u>	<u>% Brkn Top</u>	<u>% Fox- tailing</u>
*79	San Nicolas	0.04058	54	100.00	29.63	1.85	22.22
*CAC	Cachipo	0.04017	52	96.30	7.69	3.85	28.85
*78	La Mosquitia	0.03804	53	98.15	38.46	3.77	33.96
*80	San Esteban	0.03784	53	98.15	33.96	3.77	13.21
2	Gualjoco	0.03769	370	86.85	43.36	1.90	29.19
3	Los Limones	0.03678	435	99.32	29.20	0.92	18.16
4	Poptun	0.03558	843	97.57	32.70	3.91	42.94
*81	Los Limones	0.03444	52	96.30	29.41	0.00	13.73
5	Santa Cruz	0.03200	266	98.52	34.21	0.38	31.58

* Control lots P. caribaea: 78 = La Mosquitia, Honduras
 (bulked seed) 79 = San Nicolas, Honduras
 80 = San Esteban, Honduras
 81 = Los Limones, Honduras
 CAC = Cachipo, Venezuela

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

<u>Fam</u>	<u>Prov</u>	<u># Trees</u>	<u>% Surv</u>	<u>Mean Height (m)</u>	<u>C.V. (%)</u>	<u>Mean Diameter (cm)</u>	<u>Tree Volume (cubic m)</u>
37	4	54	100.00	7.81	14.26	13.5	0.04512
242	3	54	100.00	8.17	12.81	13.3	0.04504
31	4	54	100.00	7.44	18.20	13.1	0.04182
250	3	54	100.00	8.01	15.69	12.8	0.04177
279	2	54	100.00	8.15	15.89	12.7	0.04125
298	2	54	100.00	7.42	19.28	13.0	0.04081
79	*	54	100.00	7.46	16.35	12.9	0.04058
CAC	*	52	96.30	7.20	19.85	13.0	0.04017
280	2	53	98.15	7.29	15.12	13.2	0.03990
27	4	51	94.44	7.77	16.59	12.8	0.03947
23	4	53	98.15	7.28	18.78	12.9	0.03861
206	5	54	100.00	7.48	15.03	12.8	0.03854
75	4	54	100.00	7.15	18.81	13.0	0.03853
161	1	54	100.00	7.51	14.72	12.7	0.03814
78	*	53	98.15	7.72	18.04	12.4	0.03804
71	4	49	90.74	7.23	20.30	12.6	0.03789
80	*	53	98.15	7.55	17.05	12.5	0.03784
230	3	54	100.00	7.66	16.38	12.3	0.03774
294	3	43	79.63	7.22	17.38	12.6	0.03707
278	2	35	64.81	7.24	17.67	12.5	0.03686
132	1	53	98.15	7.59	10.73	12.5	0.03668
55	4	54	100.00	7.95	14.62	12.0	0.03648
239	3	53	98.15	8.00	21.41	11.7	0.03589
258	3	54	100.00	7.43	16.41	12.3	0.03588
28	4	54	100.00	7.16	16.39	12.6	0.03586
140	1	52	96.30	7.45	17.64	12.0	0.03523
320	2	47	87.04	7.34	16.99	12.1	0.03520
179	5	52	96.30	7.08	17.77	12.6	0.03513
282	2	50	92.59	7.13	19.77	12.2	0.03468
69	4	54	100.00	6.96	21.92	12.2	0.03465
81	*	52	96.30	7.39	22.22	11.6	0.03444
45	4	52	96.30	7.51	20.45	11.9	0.03430
30	4	51	94.44	7.14	23.15	11.9	0.03382
255	3	53	98.15	7.58	16.89	11.7	0.03362
241	3	54	100.00	7.15	18.51	11.9	0.03308
289	2	39	72.22	7.26	19.54	11.7	0.03293
49	4	53	98.15	7.46	19.44	11.7	0.03257
244	3	54	100.00	7.04	15.85	11.9	0.03160
41	4	54	100.00	6.74	26.02	11.8	0.03154
35	4	53	98.15	6.91	18.68	12.0	0.03149
164	1	38	70.37	7.08	21.00	11.3	0.03022
34	4	51	94.44	6.64	19.52	11.7	0.02991
223	5	53	98.15	6.93	19.34	11.5	0.02931

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<u>Fam</u>	<u>Prov</u>	<u># Trees</u>	<u>% Surv</u>	<u>Mean Height (m)</u>	<u>C.V. (%)</u>	<u>Mean Diameter (cm)</u>	<u>Tree Volume (cubic m)</u>
181	5	53	98.15	6.77	16.86	11.6	0.02871
177	5	54	100.00	7.15	18.66	11.1	0.02830
173	1	52	96.30	6.79	20.07	11.0	0.02728
142	1	54	100.00	6.94	16.88	10.8	0.02691
46	4	52	96.30	6.66	16.99	11.2	0.02681

OVERALL		2217	95.48	7.32	18.54	12.2	0.03532

Note: Tree volume with bark was calculated using a formula for juvenile trees: $\text{Volume (cubic meters)} = 0.0003 \cdot D^2 \cdot H$, where D=DBH in centimeters and H = total height in meters.
The overall means do not include control lots.

***** QUALITY TRAITS *****

<u>Family</u>	<u>Prov</u>	<u>N</u>	<u>Tree Volume (cubic m)</u>	<u>% Forking</u>	<u>% Broken Top</u>	<u>% Fox- tailing</u>
37	4	54	0.04512	49.06	0.00	48.15
242	3	54	0.04504	16.67	1.85	20.37
31	4	54	0.04182	29.63	1.85	25.93
250	3	54	0.04177	18.52	0.00	3.70
279	2	54	0.04125	16.98	0.00	44.44
298	2	54	0.04081	59.26	1.85	33.33
79	*	54	0.04058	29.63	1.85	22.22
CAC	*	52	0.04017	7.69	3.85	28.85
280	2	53	0.03990	56.60	1.89	11.32
27	4	51	0.03947	29.41	1.96	47.06
23	4	53	0.03861	37.74	1.89	37.74
206	5	54	0.03854	33.33	0.00	31.48
75	4	54	0.03853	24.07	9.26	40.74
161	1	54	0.03814	27.78	3.70	24.07
78	*	53	0.03804	38.46	3.77	33.96
71	4	49	0.03789	34.69	2.04	53.06
80	*	53	0.03784	33.96	3.77	13.21
230	3	54	0.03774	18.52	0.00	5.56
294	3	43	0.03707	25.58	4.65	13.95
278	2	35	0.03686	45.71	0.00	37.14
132	1	53	0.03668	20.75	1.89	22.64
55	4	54	0.03648	50.00	1.85	64.81
239	3	53	0.03589	35.85	1.89	39.62
258	3	54	0.03588	50.00	0.00	14.81
28	4	54	0.03586	12.96	5.56	22.22
140	1	52	0.03523	26.92	0.00	3.85
320	2	47	0.03520	46.81	2.13	38.30
179	5	52	0.03513	32.69	0.00	23.08
282	2	50	0.03468	42.00	2.00	26.00
69	4	54	0.03465	42.59	1.85	40.74
81	*	52	0.03444	29.41	0.00	13.73
45	4	52	0.03430	34.62	1.92	38.46
30	4	51	0.03382	43.14	3.92	39.22
255	3	53	0.03362	37.74	0.00	30.19
241	3	54	0.03308	16.67	3.70	9.26
289	2	39	0.03293	51.28	2.56	25.64
49	4	53	0.03257	22.64	7.55	81.13
244	3	54	0.03160	40.74	0.00	24.07
41	4	54	0.03154	31.48	7.41	46.30
35	4	53	0.03149	30.77	5.66	49.06
164	1	38	0.03022	18.42	5.26	7.89
34	4	51	0.02991	21.57	7.84	25.49

05-04-05A

<u>Family</u>	<u>Prov</u>	<u>N</u>	<u>Tree Volume (cubic m)</u>	<u>% Forking</u>	<u>% Broken Top</u>	<u>% Fox- tailing</u>
223	5	53	0.02931	35.85	1.89	15.09
181	5	53	0.02871	30.19	0.00	54.72
177	5	54	0.02830	38.89	0.00	33.33
173	1	52	0.02728	51.92	0.00	3.85
142	1	54	0.02691	50.00	1.85	12.96
46	4	52	0.02681	28.85	1.92	26.92

OVERALL		2217	0.03532	34.06	2.30	30.31

Note: Overall means do not include control lots.

Provenance code: 1 = El Porvenir, Honduras
2 = Gualjoco, Honduras
3 = Los Limones, Honduras
4 = Poptun, Guatemala
5 = Santa Cruz, Honduras