Technical Documentation Report

Intermountain Forest Tree
Nutrition Cooperative

April, 1984

College of Forestry, Wildlife, and
Range Sciences

University of Idaho

Moscow

TABLE OF CONTENTS

Page

Section 1: The 1981 Installations

Statistical analysis of two-year growth response-
Analysis of Variance Table 2

Two-year growth response and other descriptive statistics
for each 1981 installation 6

Section 2: The 1980 Installations

Statistical analysis of three-year growth response-
Analysis of Variance Table 30

Three-year growth response and other descriptive statistics
for each 1980 installation 34

Section 3: Foliar Nutrient Diagnostics

The relationship between change in first-year needle weight
and basal area growth response.. 37

Summaries of the physical characteristics of each installation,
including habitat type and soil parent material 41

"Weetman" nitrogen/needle weight graphs for the 1981
installations. 83

Graphs showing change in needle weight and relative foliar
concentrations for nine other nutrients for the 1981
installations. 125

Foliar mineral nutrient concentrations for the 1981
and 1982 installations. 209

Change in one year old needle weights for the 1982
installations. 222

Soil nutrient data for the 1981 and 1982 installations 236

PREFACE

This document contains detailed information which supports the results reported in the Intermountain Forest Tree Nutrition Cooperative 1984 annual report. This report is provided separately from the annual report for the convenience of cooperators who may want more specific information about the analysis or response data for individual installations.

Analysis of Variance Table I for the 1981 installations.

ANALYSIS OF VARIANCE TABLE

DEPENDENT VARIABLE: LN_BAI LOG(BASAL AREA INCREMENT)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	104	27.69000325	0.26625003	10.99
ERROR	165	3.99881121	0.02423522	PR > F
CORRECTED TOTAL	269	31.68881446		0.0001

R-SQUARE	C.V.	ROOT MSE	LN_BAI MEAN
0.873810	7.1892	0.15567665	2.16542878

SOURCE	DF	TYPE I SS	F VALUE	PR > F
REGION	5	6.09422520	50.29	0.0001
INSTALLATION(REGION)	39	14.63544871	15.48	0.0001
BLOCK(REGION*INSTALLATION)	45	1.34353462	1.23	0.1743
FERTILIZER	2	3.94462248	81.38	0.0001
REGION * FERTILIZER	10	0.67226789	2.77	0.0034
INITIAL BASAL AREA/ACRE	1	0.78420193	32.36	0.0001
BASAL AREA * FERTILIZER	2	0.21570241	4.45	0.0131

SOURCE	DF	TYPE III SS	F VALUE	PR > F
REGION	5	6.83528329	56.41	0.0001
INSTALLATION(REGION)	39	15.47424589	16.37	0.0001
BLOCK(REGION*INSTALLATION)	45	1.18011469	1.08	0.3524
FERTILIZER	2	0.88487364	18.26	0.0001
REGION * FERTILIZER	10	0.54220113	2.24	0.0180
INITIAL BASAL AREA/ACRE	1	0.87793706	36.23	0.0001
BASAL AREA * FERTILIZER	2	0.21570241	4.45	0.0131

Average adjusted two-year basal area per acre increment by treatment and region.

MODEL ESTIMATES FOR BASAL AREA INCREMENT
ADJUSTED TO A COMMON INITIAL BASAL AREA

REGION	FERTILIZER TREATMENT	MEAN LN_BAI		STD ERR LN_BAI	MEAN BAI	% OF CONTROL
NORTH IDAHO	CONTROL	2.27148521	A	0.04956222	9.81196756	
	200 # NITROGEN	2.53200834	B	0.05042852	12.73209473	129.76
	400 # NITROGEN	2.50339584	B	0.05041993	12.37296004	126.10
MONTANA	CONTROL	2.00426525	A	0.03892742	7.51110701	
	200 # NITROGEN	2.15733975	B	0.03914650	8.75353734	116.54
	400 # NITROGEN	2.13762764	B	0.03927509	8.58267168	114.27
CENTRAL IDAHO	CONTROL	1.96732028	A	0.03994146	7.23867291	
	200 # NITROGEN	2.21969104	B	0.04189820	9.31670150	128.71
	400 # NITROGEN	2.26885254	B	0.04117182	9.78616986	135.19
NORTHEAST OREGON	CONTROL	1.67851049	A	0.04890372	5.42288575	
	200 # NITROGEN	1.89724318	B	0.05125308	6.74877354	124.45
	400 # NITROGEN	1.86981055	B	0.05563840	6.56615326	121.08
CENTRAL WASHINGTON	CONTROL	1.93475935	A	0.03771781	7.00677095	
	200 # NITROGEN	2.23710638	B	0.03676970	9.48037611	135.30
	400 # NITROGEN	2.38927973	C	0.03723197	11.03859027	157.54
NORTHEAST WASHINGTON	CONTROL	2.16163831	A	0.03685363	8.79124131	
	200 # NITROGEN	2.36488689	B	0.03702617	10.77258521	122.54
	400 # NITROGEN	2.37677877	B	0.03681736	10.90145624	124.00

Adjusted and unadjusted two-year basal area per acre increment and site and stand characteristics for each 1981 installation.

---------- GEOGRAPHIC REGION=NORTH IDAHO INSTALLATION NUMBER=204 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3300.0000			
AVERAGE AGE OF INSTALLATION	1	41.0000			
PERCENT SLOPE	6	33.3333	6.8313	25.0000	45.0000
SITE INDEX (DF)	6	80.3900	4.3907	75.2800	85.8800
SOIL TOTAL NITROGEN (PPM)	6	2212.8333	854.1261	727.0000	3171.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	685.6667	258.9345	386.0000	1034.0000
INITIAL TREES/ACRE	6	238.3333	36.5605	180.0000	280.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	104.3358	18.9746	80.4160	121.2930
INITIAL VOLUME/ACRE (CU.FT)	6	2518.6733	465.1881	1969.8100	3002.1800
QUADRATIC MEAN DIAMETER (IN)	6	8.9460	0.3222	8.5150	9.3170

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	11.4195	11.5540	100.000
200 POUNDS NITROGEN	14.8865	15.5941	134.967
400 POUNDS NITROGEN	16.0275	15.1804	131.386

---------- GEOGRAPHIC REGION=NORTH IDAHO INSTALLATION NUMBER=205 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3300.0000			
AVERAGE AGE OF INSTALLATION	1	41.0000			
PERCENT SLOPE	6	12.5000	6.8920	5.0000	25.0000
SITE INDEX (DF)	6	86.4017	6.8967	78.0800	94.2700
SOIL TOTAL NITROGEN (PPM)	6	3165.6667	494.2180	2257.0000	3628.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	803.5000	303.2601	370.0000	1081.0000
INITIAL TREES/ACRE	6	226.6667	30.7679	180.0000	270.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	110.5685	22.5553	80.3700	143.3920
INITIAL VOLUME/ACRE (CU.FT)	6	2894.8000	797.1720	1802.5100	4031.0100
QUADRATIC MEAN DIAMETER (IN)	6	9.4507	0.9469	8.3770	10.4660

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	9.6325	11.0445	100.000
200 POUNDS NITROGEN	15.2030	14.7533	133.580
400 POUNDS NITROGEN	15.5045	14.3553	129.977

---------- GEOGRAPHIC REGION=NORTH IDAHO INSTALLATION NUMBER=206 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3200.0000			
AVERAGE AGE OF INSTALLATION	1	46.0000			
PERCENT SLOPE	6	4.1667	2.9412	0.0000	5.0000
SITE INDEX (DF)	6	81.0850	2.9213	78.8200	86.4500
SOIL TOTAL NITROGEN (PPM)	6	2602.8333	134.0305	2448.0000	2762.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	658.8333	192.2596	445.0000	971.0000
INITIAL TREES/ACRE	6	260.0000	67.8233	190.0000	370.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	152.3802	31.4990	119.3370	207.1180
INITIAL VOLUME/ACRE (CU.FT)	6	4008.0550	844.6959	3056.4300	5382.4200
QUADRATIC MEAN DIAMETER (IN)	6	10.4277	0.5075	9.6630	10.9460

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	10.3280	10.9866	100.000
200 POUNDS NITROGEN	13.8180	13.6937	124.641
400 POUNDS NITROGEN	13.7805	13.2840	120.911

---------- GEOGRAPHIC REGION=NORTH IDAHO INSTALLATION NUMBER=208 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	2800.0000			
AVERAGE AGE OF INSTALLATION	1	88.0000			
PERCENT SLOPE	6	15.0000	6.3246	10.0000	25.0000
SITE INDEX (DF)	6	67.7583	11.0171	54.7900	83.8800
SOIL TOTAL NITROGEN (PPM)	6	1616.6667	529.7915	964.0000	2442.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	384.3333	71.8044	278.0000	489.0000
INITIAL TREES/ACRE	6	150.0000	42.4264	100.0000	210.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	188.6737	25.3492	155.9350	216.3820
INITIAL VOLUME/ACRE (CU.FT)	6	6499.9667	1073.7022	5373.0900	7804.2400
QUADRATIC MEAN DIAMETER (IN)	6	15.4797	1.8972	13.0120	17.7970

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	7.4105	6.8511	100.000
200 POUNDS NITROGEN	8.2575	8.0409	117.367
400 POUNDS NITROGEN	6.6940	7.7798	113.556

---------- GEOGRAPHIC REGION=NORTH IDAHO INSTALLATION NUMBER=240 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3500.0000			
AVERAGE AGE OF INSTALLATION	1	41.0000			
PERCENT SLOPE	6	15.0000	16.7332	0.0000	35.0000
SITE INDEX (DF)	6	88.0667	4.0801	82.1100	94.4400
SOIL TOTAL NITROGEN (PPM)	6	1118.1667	136.8889	943.0000	1281.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	567.5000	141.9193	428.0000	791.0000
INITIAL TREES/ACRE	6	345.0000	45.0555	280.0000	410.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	149.7228	33.9400	97.7910	185.2810
INITIAL VOLUME/ACRE (CU.FT)	6	3707.7633	1165.7076	1966.2000	5034.2900
QUADRATIC MEAN DIAMETER (IN)	6	8.9115	1.1484	7.1570	9.9150

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	12.6140	12.9955	100.000
200 POUNDS NITROGEN	16.0150	16.2692	125.190
400 POUNDS NITROGEN	16.4225	15.7854	121.468

---------- GEOGRAPHIC REGION=MONTANA INSTALLATION NUMBER=231 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3500.0000			
AVERAGE AGE OF INSTALLATION	1	61.0000			
PERCENT SLOPE	6	27.5000	6.8920	20.0000	35.0000
SITE INDEX (DF)	6	59.0600	2.6901	55.1700	62.4700
SOIL TOTAL NITROGEN (PPM)	6	3916.3333	1505.0964	2175.0000	6266.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	754.3333	402.0406	199.0000	1324.0000
INITIAL TREES/ACRE	6	168.3333	26.3944	130.0000	200.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	97.0393	17.5211	71.7890	117.8090
INITIAL VOLUME/ACRE (CU.FT)	6	2252.3583	462.8728	1692.9900	2797.4600
QUADRATIC MEAN DIAMETER (IN)	6	10.2703	0.3973	9.6620	10.7260

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	7.3985	7.2235	100.000
200 POUNDS NITROGEN	8.0045	8.8626	122.691
400 POUNDS NITROGEN	9.3215	8.7092	120.567

---------- GEOGRAPHIC REGION=MONTANA INSTALLATION NUMBER=232 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3600.0000			
AVERAGE AGE OF INSTALLATION	1	54.0000			
PERCENT SLOPE	6	11.6667	2.5820	10.0000	15.0000
SITE INDEX (DF)	6	78.9767	3.9144	73.8700	83.7500
SOIL TOTAL NITROGEN (PPM)	6	2746.8333	521.2391	2102.0000	3332.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	537.0000	248.7834	291.0000	984.0000
INITIAL TREES/ACRE	6	196.6667	20.6559	180.0000	230.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	137.6967	13.6066	113.5410	151.9920
INITIAL VOLUME/ACRE (CU.FT)	6	3735.9050	498.7359	2868.5700	4288.7100
QUADRATIC MEAN DIAMETER (IN)	6	11.3425	0.5787	10.7540	12.3020

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	9.9960	11.5741	100.000
200 POUNDS NITROGEN	13.6215	13.2754	114.699
400 POUNDS NITROGEN	14.1765	13.0072	112.382

---------- GEOGRAPHIC REGION=MONTANA INSTALLATION NUMBER=233 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3200.0000			
AVERAGE AGE OF INSTALLATION	1	54.0000			
PERCENT SLOPE	6	11.6667	6.0553	5.0000	20.0000
SITE INDEX (DF)	6	78.1183	7.1655	70.9000	86.1700
SOIL TOTAL NITROGEN (PPM)	6	2518.0000	575.1435	1589.0000	3150.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	223.5000	37.9197	183.0000	290.0000
INITIAL TREES/ACRE	6	173.3333	29.4392	150.0000	230.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	144.2937	17.6351	125.3750	176.4760
INITIAL VOLUME/ACRE (CU.FT)	6	4005.5800	643.7512	3289.8100	5051.0200
QUADRATIC MEAN DIAMETER (IN)	6	12.4007	0.6891	11.3010	13.1080

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	9.7055	9.8705	100.000
200 POUNDS NITROGEN	10.6645	11.1983	113.452
400 POUNDS NITROGEN	12.0415	10.9668	111.107

---------- GEOGRAPHIC REGION=MONTANA INSTALLATION NUMBER=234 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3200.0000			
AVERAGE AGE OF INSTALLATION	1	59.0000			
PERCENT SLOPE	6	4.1667	4.9160	0.0000	10.0000
SITE INDEX (DF)	6	71.7300	5.0306	61.3400	76.7600
SOIL TOTAL NITROGEN (PPM)	6	3114.5000	1272.5649	2013.0000	5059.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	271.8333	113.9779	191.0000	495.0000
INITIAL TREES/ACRE	6	176.6667	22.5093	160.0000	210.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	131.5113	18.3942	99.7280	150.3840
INITIAL VOLUME/ACRE (CU.FT)	6	3564.9100	564.7873	2626.9900	4257.5900
QUADRATIC MEAN DIAMETER (IN)	6	11.6967	0.9082	10.6900	13.1270

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	10.9655	9.0924	100.000
200 POUNDS NITROGEN	10.5140	10.5363	115.880
400 POUNDS NITROGEN	8.5395	10.3280	113.590

---------- GEOGRAPHIC REGION=MONTANA INSTALLATION NUMBER=235 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3200.0000			
AVERAGE AGE OF INSTALLATION	1	74.0000			
PERCENT SLOPE	6	15.0000	3.1623	10.0000	20.0000
SITE INDEX (DF)	6	49.8967	4.8523	44.0400	55.8000
SOIL TOTAL NITROGEN (PPM)	6	3871.6667	656.0743	3132.0000	4593.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	951.0000	487.8295	308.0000	1590.0000
INITIAL TREES/ACRE	6	325.0000	78.1665	220.0000	410.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	109.8672	13.1623	86.7360	126.2910
INITIAL VOLUME/ACRE (CU.FT)	6	2543.0733	283.1289	2078.7700	2869.7400
QUADRATIC MEAN DIAMETER (IN)	6	7.9715	0.6589	7.2740	8.8010

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	3.6450	4.5625	100.000
200 POUNDS NITROGEN	6.0860	5.4801	120.111
400 POUNDS NITROGEN	5.7685	5.3803	117.922

---------- GEOGRAPHIC REGION=MONTANA INSTALLATION NUMBER=236 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3500.0000			
AVERAGE AGE OF INSTALLATION	1	80.0000			
PERCENT SLOPE	6	35.0000	8.3666	25.0000	45.0000
SITE INDEX (DF)	6	54.5817	1.5908	52.5400	57.1300
SOIL TOTAL NITROGEN (PPM)	6	4802.3333	557.1376	4133.0000	5545.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	686.1667	105.4275	515.0000	836.0000
INITIAL TREES/ACRE	6	298.3333	58.4523	240.0000	380.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	167.7355	22.6340	134.8760	190.3180
INITIAL VOLUME/ACRE (CU.FT)	6	4327.3183	681.0895	3372.9700	4899.3700
QUADRATIC MEAN DIAMETER (IN)	6	10.2197	0.8160	9.3070	11.5040

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	5.1740	5.1920	100.000
200 POUNDS NITROGEN	5.6240	5.6660	109.131
400 POUNDS NITROGEN	5.3475	5.5395	106.693

---------- GEOGRAPHIC REGION=MONTANA INSTALLATION NUMBER=237 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	4400.0000			
AVERAGE AGE OF INSTALLATION	1	90.0000			
PERCENT SLOPE	6	0.8333	2.0412	0.0000	5.0000
SITE INDEX (DF)	6	56.4383	5.6340	50.5600	63.4400
SOIL TOTAL NITROGEN (PPM)	6	3585.5000	335.5317	3063.0000	3929.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	558.0000	51.3342	477.0000	609.0000
INITIAL TREES/ACRE	6	231.6667	30.6050	180.0000	270.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	148.4583	21.5169	123.3300	174.0650
INITIAL VOLUME/ACRE (CU.FT)	6	4221.3050	944.2767	3027.8000	5214.4200
QUADRATIC MEAN DIAMETER (IN)	6	10.8843	1.1302	9.2440	12.0440

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	7.8690	6.6013	100.000
200 POUNDS NITROGEN	7.1515	7.4378	112.672
400 POUNDS NITROGEN	6.3690	7.2818	110.310

---------- GEOGRAPHIC REGION=MONTANA INSTALLATION NUMBER=238 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3500.0000			
AVERAGE AGE OF INSTALLATION	1	32.0000			
PERCENT SLOPE	6	55.1667	8.6120	43.0000	65.0000
SITE INDEX (DF)	6	70.8600	5.4909	60.6900	75.1500
SOIL TOTAL NITROGEN (PPM)	6	2630.0000	867.1655	1858.0000	4319.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	1269.6667	1053.2839	331.0000	3010.0000
INITIAL TREES/ACRE	6	215.0000	40.3733	160.0000	270.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	48.4973	11.8539	31.6400	60.8060
INITIAL VOLUME/ACRE (CU.FT)	6	752.9417	223.1269	403.0400	1005.6800
QUADRATIC MEAN DIAMETER (IN)	6	6.4142	0.5650	5.6770	7.1390

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	8.0495	7.1277	100.000
200 POUNDS NITROGEN	9.3350	9.4773	132.965
400 POUNDS NITROGEN	8.4845	9.3462	131.125

---------- GEOGRAPHIC REGION=CENTRAL IDAHO INSTALLATION NUMBER=201 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	5500.0000			
AVERAGE AGE OF INSTALLATION	1	59.0000			
PERCENT SLOPE	6	17.5000	5.2440	10.0000	25.0000
SITE INDEX (DF)	6	62.6450	2.2520	58.9400	65.8600
SOIL TOTAL NITROGEN (PPM)	6	1626.6667	197.8046	1363.0000	1941.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	694.3333	125.1777	502.0000	853.0000
INITIAL TREES/ACRE	6	228.3333	69.9762	160.0000	310.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	113.6645	31.5825	71.9640	146.0330
INITIAL VOLUME/ACRE (CU.FT)	6	2573.3450	977.5427	1327.7300	3787.6100
QUADRATIC MEAN DIAMETER (IN)	6	9.5982	0.6573	8.8430	10.5880

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	7.5275	6.9055	100.000
200 POUNDS NITROGEN	7.6975	9.1027	131.818
400 POUNDS NITROGEN	10.5655	9.5713	138.605

---------- GEOGRAPHIC REGION=CENTRAL IDAHO INSTALLATION NUMBER=202 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	5500.0000			
AVERAGE AGE OF INSTALLATION	1	58.0000			
PERCENT SLOPE	6	29.1667	15.9426	10.0000	45.0000
SITE INDEX (DF)	6	55.8933	9.5753	38.9000	66.2500
SOIL TOTAL NITROGEN (PPM)	6	1427.3333	292.0409	1091.0000	1864.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	355.8333	79.3660	264.0000	462.0000
INITIAL TREES/ACRE	6	181.6667	46.2241	130.0000	240.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	66.9275	12.6345	44.0140	78.0140
INITIAL VOLUME/ACRE (CU.FT)	6	1283.6367	237.1661	861.1700	1543.6700
QUADRATIC MEAN DIAMETER (IN)	6	8.2912	0.8044	7.3620	9.3450

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	6.3830	6.0613	100.000
200 POUNDS NITROGEN	7.5200	8.6331	142.430
400 POUNDS NITROGEN	9.6015	9.1084	150.272

---------- GEOGRAPHIC REGION=CENTRAL IDAHO INSTALLATION NUMBER=203 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	5500.0000			
AVERAGE AGE OF INSTALLATION	1	69.0000			
PERCENT SLOPE	6	24.1667	4.9160	15.0000	30.0000
SITE INDEX (DF)	6	57.6117	6.9999	49.0800	66.9400
SOIL TOTAL NITROGEN (PPM)	6	1259.8333	514.6702	640.0000	1910.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	822.3333	195.8210	585.0000	1118.0000
INITIAL TREES/ACRE	6	165.0000	32.7109	120.0000	200.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	100.6738	13.7815	85.0870	123.3600
INITIAL VOLUME/ACRE (CU.FT)	6	2475.6017	364.4038	2122.8100	2991.1200
QUADRATIC MEAN DIAMETER (IN)	6	10.6435	0.5795	9.9660	11.6140

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	5.5775	5.7480	100.000
200 POUNDS NITROGEN	8.6935	7.7417	134.686
400 POUNDS NITROGEN	7.4240	8.1480	141.754

---------- GEOGRAPHIC REGION=CENTRAL IDAHO INSTALLATION NUMBER=219 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	4600.0000			
AVERAGE AGE OF INSTALLATION	1	67.0000			
PERCENT SLOPE	6	22.5000	6.8920	10.0000	30.0000
SITE INDEX (DF)	6	55.7967	6.3430	47.8500	63.6900
SOIL TOTAL NITROGEN (PPM)	6	3544.6667	1269.3773	1078.0000	4594.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	1058.6667	205.4485	724.0000	1313.0000
INITIAL TREES/ACRE	6	241.6667	44.0076	170.0000	290.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	127.2868	19.2049	96.7500	142.7010
INITIAL VOLUME/ACRE (CU.FT)	6	2893.1800	558.5742	2019.7600	3602.0100
QUADRATIC MEAN DIAMETER (IN)	6	9.8702	0.6879	8.9790	10.8740

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	7.3835	8.3419	100.000
200 POUNDS NITROGEN	10.6570	10.7507	128.876
400 POUNDS NITROGEN	12.5915	11.2931	135.378

---------- GEOGRAPHIC REGION=CENTRAL IDAHO INSTALLATION NUMBER=220 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	5700.0000			
AVERAGE AGE OF INSTALLATION	1	89.0000			
PERCENT SLOPE	6	30.8333	9.7040	20.0000	45.0000
SITE INDEX (DF)	6	49.8983	7.3707	41.9100	61.1900
SOIL TOTAL NITROGEN (PPM)	6	1486.1667	142.2553	1323.0000	1693.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	590.0000	139.7712	397.0000	805.0000
INITIAL TREES/ACRE	6	268.3333	57.0672	190.0000	340.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	104.7950	16.7391	84.9350	125.7480
INITIAL VOLUME/ACRE (CU.FT)	6	2518.9217	647.5591	1676.4600	3317.0600
QUADRATIC MEAN DIAMETER (IN)	6	8.5400	0.9055	7.2360	9.6880

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	5.0080	4.9985	100.000
200 POUNDS NITROGEN	6.5010	6.6865	133.769
400 POUNDS NITROGEN	7.3805	7.0353	140.747

---------- GEOGRAPHIC REGION=CENTRAL IDAHO INSTALLATION NUMBER=221 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	4200.0000			
AVERAGE AGE OF INSTALLATION	1	92.0000			
PERCENT SLOPE	6	39.1667	7.3598	30.0000	50.0000
SITE INDEX (DF)	6	54.8150	7.3433	45.1000	64.1300
SOIL TOTAL NITROGEN (PPM)	6	3581.8333	418.8515	3168.0000	4202.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	1319.1667	262.6065	996.0000	1771.0000
INITIAL TREES/ACRE	6	180.0000	33.4664	140.0000	230.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	118.0862	25.7897	93.1370	149.7610
INITIAL VOLUME/ACRE (CU.FT)	6	2933.5433	950.7805	2213.4500	4262.3600
QUADRATIC MEAN DIAMETER (IN)	6	10.9910	1.2043	9.5590	13.0850

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	7.0875	5.7995	100.000
200 POUNDS NITROGEN	8.4075	7.5890	130.856
400 POUNDS NITROGEN	6.2405	7.9772	137.549

---------- GEOGRAPHIC REGION=CENTRAL IDAHO INSTALLATION NUMBER=222 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	4800.0000			
AVERAGE AGE OF INSTALLATION	1	71.0000			
PERCENT SLOPE	6	26.6667	10.8012	10.0000	40.0000
SITE INDEX (DF)	6	53.3017	6.7697	45.8700	63.5100
SOIL TOTAL NITROGEN (PPM)	6	2676.0000	795.2771	1775.0000	3903.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	1098.0000	131.0771	884.0000	1198.0000
INITIAL TREES/ACRE	6	355.0000	128.9574	240.0000	580.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	138.6392	21.6316	118.3530	168.0860
INITIAL VOLUME/ACRE (CU.FT)	6	3152.9983	610.7242	2524.4900	3787.1600
QUADRATIC MEAN DIAMETER (IN)	6	8.6948	1.0998	7.1460	9.7850

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	9.2280	8.2366	100.000
200 POUNDS NITROGEN	8.8340	10.4173	126.475
400 POUNDS NITROGEN	11.3320	10.9338	132.746

---------- GEOGRAPHIC REGION=CENTRAL IDAHO INSTALLATION NUMBER=223 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	4400.0000			
AVERAGE AGE OF INSTALLATION	1	75.0000			
PERCENT SLOPE	6	35.0000	8.9443	20.0000	45.0000
SITE INDEX (DF)	6	55.1317	7.6589	46.2500	66.1200
SOIL TOTAL NITROGEN (PPM)	6	2123.6667	654.1837	1462.0000	3125.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	948.0000	191.7749	646.0000	1163.0000
INITIAL TREES/ACRE	6	225.0000	43.2435	160.0000	260.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	111.2575	15.9236	91.2880	136.5840
INITIAL VOLUME/ACRE (CU.FT)	6	2686.1983	641.6401	2008.7700	3768.4300
QUADRATIC MEAN DIAMETER (IN)	6	9.6373	1.3359	8.1820	11.7950

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	7.4435	7.8508	100.000
200 POUNDS NITROGEN	12.0935	10.3901	132.345
400 POUNDS NITROGEN	10.1725	10.9270	139.183

---------- GEOGRAPHIC REGION=NORTHEAST OREGON INSTALLATION NUMBER=207 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3600.0000			
AVERAGE AGE OF INSTALLATION	1	55.0000			
PERCENT SLOPE	6	18.3333	7.5277	10.0000	30.0000
SITE INDEX (DF)	6	71.5050	8.0662	62.3200	82.4800
SOIL TOTAL NITROGEN (PPM)	6	3211.3333	796.2132	1687.0000	3862.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	731.0000	127.2604	569.0000	916.0000
INITIAL TREES/ACRE	6	276.6667	43.2049	220.0000	350.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	156.7953	27.5382	121.9460	197.7200
INITIAL VOLUME/ACRE (CU.FT)	6	4189.2633	863.4767	3102.2200	5270.5800
QUADRATIC MEAN DIAMETER (IN)	6	10.1853	0.4195	9.7450	10.8740

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	6.8895	7.9780	100.000
200 POUNDS NITROGEN	10.4665	9.4673	118.668
400 POUNDS NITROGEN	9.2060	9.1919	115.216

---------- GEOGRAPHIC REGION=NORTHEAST OREGON INSTALLATION NUMBER=212 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	4100.0000			
AVERAGE AGE OF INSTALLATION	1	71.0000			
PERCENT SLOPE	6	50.8333	3.7639	45.0000	55.0000
SITE INDEX (DF)	6	55.1967	5.7703	46.6300	61.1700
SOIL TOTAL NITROGEN (PPM)	6	2931.5000	520.1149	2145.0000	3512.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	622.5000	171.8392	532.0000	970.0000
INITIAL TREES/ACRE	6	196.6667	15.0555	180.0000	220.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	81.0973	11.2141	70.9790	97.5160
INITIAL VOLUME/ACRE (CU.FT)	6	1877.9250	316.5266	1553.7300	2376.0700
QUADRATIC MEAN DIAMETER (IN)	6	8.7002	0.7817	7.7220	9.9660

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	5.8305	5.8728	100.000
200 POUNDS NITROGEN	8.2265	7.9003	134.523
400 POUNDS NITROGEN	7.4055	7.7128	131.330

---------- GEOGRAPHIC REGION=NORTHEAST OREGON INSTALLATION NUMBER=213 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	4250.0000			
AVERAGE AGE OF INSTALLATION	0	.			
PERCENT SLOPE	6	3.3333	5.1640	0.0000	10.0000
SITE INDEX (DF)	6	62.9600	3.7022	57.0800	68.3800
SOIL TOTAL NITROGEN (PPM)	6	1470.3333	362.1467	1023.0000	1869.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	1518.1667	126.6735	1341.0000	1680.0000
INITIAL TREES/ACRE	6	121.6667	26.3944	90.0000	160.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	95.4818	15.6441	66.6870	107.2620
INITIAL VOLUME/ACRE (CU.FT)	6	3011.8867	577.1543	2033.7800	3585.0400
QUADRATIC MEAN DIAMETER (IN)	6	12.0723	1.0553	11.0520	14.0240

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	4.4895	4.4463	100.000
200 POUNDS NITROGEN	5.3990	5.8404	131.355
400 POUNDS NITROGEN	6.3370	5.6958	128.104

---------- GEOGRAPHIC REGION=NORTHEAST OREGON INSTALLATION NUMBER=239 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3700.0000			
AVERAGE AGE OF INSTALLATION	1	87.0000			
PERCENT SLOPE	6	45.0000	6.3246	35.0000	55.0000
SITE INDEX (DF)	6	71.2617	6.1865	63.2300	80.3200
SOIL TOTAL NITROGEN (PPM)	6	3013.5000	1446.4197	1470.0000	5295.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	859.6667	136.1083	760.0000	1129.0000
INITIAL TREES/ACRE	6	156.1167	31.3637	120.0000	190.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	188.4563	36.7408	139.3260	227.9950
INITIAL VOLUME/ACRE (CU.FT)	6	6237.7800	1494.7991	4483.7600	8097.5400
QUADRATIC MEAN DIAMETER (IN)	6	14.9130	1.0911	13.3200	16.5210

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	8.0345	7.9945	100.000
200 POUNDS NITROGEN	8.1665	9.0022	112.604
400 POUNDS NITROGEN	9.2560	8.7203	109.078

---------- GEOGRAPHIC REGION=NORTHEAST OREGON INSTALLATION NUMBER=244 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	5900.0000			
AVERAGE AGE OF INSTALLATION	1	90.0000			
PERCENT SLOPE	6	35.0000	6.3246	30.0000	45.0000
SITE INDEX (DF)	6	62.1233	5.5783	54.7800	70.1600
SOIL TOTAL NITROGEN (PPM)	6	3837.3333	1003.5839	1905.0000	4498.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	537.0000	119.2845	409.0000	706.0000
INITIAL TREES/ACRE	6	206.6667	68.6052	130.0000	290.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	272.2187	17.9717	251.8860	300.7950
INITIAL VOLUME/ACRE (CU.FT)	6	8360.1067	1018.6889	6821.4800	9619.5100
QUADRATIC MEAN DIAMETER (IN)	6	16.0553	2.4627	13.7030	19.2930

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	5.5795	5.8401	100.000
200 POUNDS NITROGEN	5.8335	5.7241	98.014
400 POUNDS NITROGEN	5.4180	5.5113	94.369

---------- GEOGRAPHIC REGION=NORTHEAST OREGON INSTALLATION NUMBER=245 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	5000.0000			
AVERAGE AGE OF INSTALLATION	1	52.0000			
PERCENT SLOPE	6	18.3333	7.5277	10.0000	25.0000
SITE INDEX (DF)	6	62.3233	3.7041	57.1600	67.1200
SOIL TOTAL NITROGEN (PPM)	6	4219.6667	943.3090	3091.0000	5576.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	542.0000	204.8355	264.0000	749.0000
INITIAL TREES/ACRE	6	251.6667	82.8050	150.0000	340.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	191.7105	36.2173	142.0150	243.1880
INITIAL VOLUME/ACRE (CU.FT)	6	3772.7533	854.6072	2585.2200	4834.7900
QUADRATIC MEAN DIAMETER (IN)	6	12.2472	2.5841	8.8830	16.2530

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	6.3655	7.5007	100.000
200 POUNDS NITROGEN	8.2690	8.4007	111.998
400 POUNDS NITROGEN	9.0220	8.1357	108.466

---------- GEOGRAPHIC REGION=CENTRAL WASHINGTON INSTALLATION NUMBER=224 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3800.0000			
AVERAGE AGE OF INSTALLATION	1	74.0000			
PERCENT SLOPE	6	3.3333	4.0825	0.0000	10.0000
SITE INDEX (DF)	6	90.9717	4.8857	86.1000	98.2000
SOIL TOTAL NITROGEN (PPM)	6	2618.1667	532.2809	1719.0000	3260.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	944.8333	187.8195	673.0000	1205.0000
INITIAL TREES/ACRE	6	102.5000	18.3712	85.0000	130.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	155.3370	22.4814	124.4510	188.3540
INITIAL VOLUME/ACRE (CU.FT)	6	5927.3450	1022.2311	4431.6900	7243.1700
QUADRATIC MEAN DIAMETER (IN)	6	16.7492	1.3859	14.8680	19.0510

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	7.9285	8.5831	100.000
200 POUNDS NITROGEN	12.7610	11.1005	129.329
400 POUNDS NITROGEN	11.4435	12.8994	150.288

---------- GEOGRAPHIC REGION=CENTRAL WASHINGTON INSTALLATION NUMBER=225 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	2200.0000			
AVERAGE AGE OF INSTALLATION	1	85.0000			
PERCENT SLOPE	6	0.0000	0.0000	0.0000	0.0000
SITE INDEX (DF)	6	54.7017	6.9191	45.9800	62.3000
SOIL TOTAL NITROGEN (PPM)	6	1659.5000	271.5671	1326.0000	2007.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	714.8333	42.6306	666.0000	793.0000
INITIAL TREES/ACRE	6	160.0000	10.9545	150.0000	180.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	109.7703	25.3363	87.6530	156.6770
INITIAL VOLUME/ACRE (CU.FT)	6	2847.2850	756.7057	2102.0500	4205.4100
QUADRATIC MEAN DIAMETER (IN)	6	11.1437	0.8815	10.2000	12.6330

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	8.2070	8.4130	100.000
200 POUNDS NITROGEN	11.2125	11.7336	139.470
400 POUNDS NITROGEN	14.1205	13.6803	162.609

---------- GEOGRAPHIC REGION=CENTRAL WASHINGTON INSTALLATION NUMBER=226 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	2900.0000			
AVERAGE AGE OF INSTALLATION	1	79.0000			
PERCENT SLOPE	6	9.1667	3.7639	5.0000	15.0000
SITE INDEX (DF)	6	57.0400	7.7400	51.6100	70.9400
SOIL TOTAL NITROGEN (PPM)	6	1365.6667	267.9684	851.0000	1640.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	341.0000	20.3666	309.0000	362.0000
INITIAL TREES/ACRE	6	131.6667	9.8319	120.0000	150.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	88.1023	10.6658	71.3420	101.7550
INITIAL VOLUME/ACRE (CU.FT)	6	2046.3767	337.8963	1599.5100	2571.0100
QUADRATIC MEAN DIAMETER (IN)	6	11.0818	0.8579	9.9830	11.9800

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	6.4530	6.2287	100.000
200 POUNDS NITROGEN	9.2145	9.0047	144.567
400 POUNDS NITROGEN	9.7350	10.5152	168.818

---------- GEOGRAPHIC REGION=CENTRAL WASHINGTON INSTALLATION NUMBER=227 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	2400.0000			
AVERAGE AGE OF INSTALLATION	1	80.0000			
PERCENT SLOPE	6	33.0000	9.7980	20.0000	50.0000
SITE INDEX (DF)	6	55.6850	5.6385	48.6100	62.4500
SOIL TOTAL NITROGEN (PPM)	6	1384.8333	413.1447	902.0000	1948.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	209.3333	57.9678	140.0000	305.0000
INITIAL TREES/ACRE	6	123.3333	18.6190	110.0000	160.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	101.5913	21.1223	72.8280	134.7910
INITIAL VOLUME/ACRE (CU.FT)	6	2709.7817	677.2574	1835.4400	3738.2800
QUADRATIC MEAN DIAMETER (IN)	6	12.2573	0.9011	11.0180	13.6650

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	4.2515	5.2704	100.000
200 POUNDS NITROGEN	9.6525	7.4509	141.373
400 POUNDS NITROGEN	7.9375	8.6923	164.926

---------- GEOGRAPHIC REGION=CENTRAL WASHINGTON INSTALLATION NUMBER=228 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	2500.0000			
AVERAGE AGE OF INSTALLATION	1	64.0000			
PERCENT SLOPE	6	27.5000	13.3229	10.0000	45.0000
SITE INDEX (DF)	6	76.9017	7.7546	68.2100	88.2400
SOIL TOTAL NITROGEN (PPM)	6	1194.5000	171.3041	1021.0000	1489.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	254.5000	84.2870	178.0000	379.0000
INITIAL TREES/ACRE	6	211.6667	54.5588	140.0000	280.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	140.4233	16.6232	124.1080	164.5670
INITIAL VOLUME/ACRE (CU.FT)	6	3877.8500	486.2908	3286.9500	4504.8400
QUADRATIC MEAN DIAMETER (IN)	6	11.2293	1.3493	9.5330	12.7490

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	7.0520	6.0991	100.000
200 POUNDS NITROGEN	7.2630	8.0852	132.564
400 POUNDS NITROGEN	9.0475	9.4056	154.214

---------- GEOGRAPHIC REGION=CENTRAL WASHINGTON INSTALLATION NUMBER=229 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3000.0000			
AVERAGE AGE OF INSTALLATION	1	69.0000			
PERCENT SLOPE	6	14.1667	3.7639	10.0000	20.0000
SITE INDEX (DF)	6	79.1600	4.2824	75.9600	87.0200
SOIL TOTAL NITROGEN (PPM)	6	1698.1667	254.6420	1399.0000	2010.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	483.6667	97.5596	372.0000	650.0000
INITIAL TREES/ACRE	6	113.3333	12.1106	100.0000	130.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	130.1507	16.3528	109.0580	158.8560
INITIAL VOLUME/ACRE (CU.FT)	6	4140.0450	757.5660	3393.2500	5580.7200
QUADRATIC MEAN DIAMETER (IN)	6	14.5308	1.0697	13.6290	16.2720

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	8.0610	7.0656	100.000
200 POUNDS NITROGEN	9.0830	9.5273	134.839
400 POUNDS NITROGEN	9.9990	11.0915	156.978

---------- GEOGRAPHIC REGION=CENTRAL WASHINGTON INSTALLATION NUMBER=230 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	2900.0000			
AVERAGE AGE OF INSTALLATION	1	81.0000			
PERCENT SLOPE	6	8.3333	6.8313	0.0000	15.0000
SITE INDEX (DF)	6	68.1967	11.7755	54.9800	81.6000
SOIL TOTAL NITROGEN (PPM)	6	908.5000	300.2484	551.0000	1373.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	553.8333	212.4942	336.0000	920.0000
INITIAL TREES/ACRE	6	128.3333	26.2043	90.0000	160.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	124.1757	9.8774	114.3340	141.0580
INITIAL VOLUME/ACRE (CU.FT)	6	4013.1433	574.0531	3496.6800	4927.8800
QUADRATIC MEAN DIAMETER (IN)	6	13.5027	1.5701	11.5630	15.2620

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	4.7930	5.5071	100.000
200 POUNDS NITROGEN	7.8715	7.4997	136.181
400 POUNDS NITROGEN	9.5915	8.7348	158.609

---------- GEOGRAPHIC REGION=CENTRAL WASHINGTON INSTALLATION NUMBER=241 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3300.0000			
AVERAGE AGE OF INSTALLATION	1	72.0000			
PERCENT SLOPE	6	3.3333	2.5820	0.0000	5.0000
SITE INDEX (DF)	6	61.8700	9.3008	45.7500	71.2300
SOIL TOTAL NITROGEN (PPM)	6	385.0000	111.7605	287.0000	598.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	1132.1667	35.9078	1083.0000	1190.0000
INITIAL TREES/ACRE	6	303.3333	50.8593	230.0000	360.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	113.7433	23.4970	73.6080	132.6780
INITIAL VOLUME/ACRE (CU.FT)	6	2600.0467	623.7406	1593.2600	3326.8500
QUADRATIC MEAN DIAMETER (IN)	6	8.2710	0.5531	7.6600	9.3210

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	8.0845	9.1006	100.000
200 POUNDS NITROGEN	11.9075	12.6093	138.555
400 POUNDS NITROGEN	16.2320	14.6970	161.496

---------- GEOGRAPHIC REGION=CENTRAL WASHINGTON INSTALLATION NUMBER=242 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	4500.0000			
AVERAGE AGE OF INSTALLATION	1	87.0000			
PERCENT SLOPE	6	19.1667	2.0412	15.0000	20.0000
SITE INDEX (DF)	6	47.7367	7.7948	37.1300	59.3800
SOIL TOTAL NITROGEN (PPM)	6	700.1667	120.5378	579.0000	906.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	875.6667	132.3596	667.0000	1021.0000
INITIAL TREES/ACRE	6	430.0000	82.4621	300.0000	520.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	137.8195	22.4538	117.9360	174.1500
INITIAL VOLUME/ACRE (CU.FT)	6	3415.3183	569.5208	2947.1100	4156.5300
QUADRATIC MEAN DIAMETER (IN)	6	7.7210	0.7627	6.9210	8.6420

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	5.8530	6.1907	100.000
200 POUNDS NITROGEN	8.0075	8.2421	133.137
400 POUNDS NITROGEN	10.1605	9.5900	154.910

---------- GEOGRAPHIC REGION=NORTHEAST WASHINGTON INSTALLATION NUMBER=209 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	2800.0000			
AVERAGE AGE OF INSTALLATION	1	68.0000			
PERCENT SLOPE	6	28.3333	6.8313	20.0000	35.0000
SITE INDEX (DF)	6	69.7833	4.5204	65.5100	78.3500
SOIL TOTAL NITROGEN (PPM)	6	1810.5000	365.9146	1243.0000	2280.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	1954.0000	700.7838	1336.0000	3220.0000
INITIAL TREES/ACRE	6	181.6667	34.8808	140.0000	230.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	143.1337	25.1451	120.8970	182.5950
INITIAL VOLUME/ACRE (CU.FT)	6	4402.1950	1055.4690	3480.3400	6295.7200
QUADRATIC MEAN DIAMETER (IN)	6	12.0823	1.1588	10.9530	14.0330

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	6.0770	6.8007	100.000
200 POUNDS NITROGEN	8.9480	8.1282	119.519
400 POUNDS NITROGEN	8.0345	8.2164	120.817

---------- GEOGRAPHIC REGION=NORTHEAST WASHINGTON INSTALLATION NUMBER=210 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	2600.0000			
AVERAGE AGE OF INSTALLATION	1	54.0000			
PERCENT SLOPE	6	27.5000	5.2440	20.0000	35.0000
SITE INDEX (DF)	6	73.6750	7.6605	61.3900	80.8700
SOIL TOTAL NITROGEN (PPM)	6	3894.0000	1187.9931	1726.0000	4979.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	2100.8333	281.4657	1831.0000	2558.0000
INITIAL TREES/ACRE	6	271.6667	40.7022	220.0000	340.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	143.2727	13.4851	132.7700	168.8230
INITIAL VOLUME/ACRE (CU.FT)	6	3599.0333	330.7095	2943.6900	3822.2900
QUADRATIC MEAN DIAMETER (IN)	6	9.8698	0.4638	9.3740	10.5290

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	5.7775	6.6899	100.000
200 POUNDS NITROGEN	8.7080	7.9938	119.492
400 POUNDS NITROGEN	8.2985	8.0805	120.788

---------- GEOGRAPHIC REGION=NORTHEAST WASHINGTON INSTALLATION NUMBER=211 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3100.0000			
AVERAGE AGE OF INSTALLATION	1	34.0000			
PERCENT SLOPE	6	36.6667	4.0825	35.0000	45.0000
SITE INDEX (DF)	6	88.6767	6.0423	78.9700	95.7100
SOIL TOTAL NITROGEN (PPM)	6	2613.0000	332.6927	2143.0000	3022.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	937.5000	99.8954	767.0000	1060.0000
INITIAL TREES/ACRE	6	471.6667	36.5605	410.0000	520.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	171.8268	11.7500	152.6990	182.9450
INITIAL VOLUME/ACRE (CU.FT)	6	3817.5433	309.2681	3435.2400	4356.5700
QUADRATIC MEAN DIAMETER (IN)	6	8.1853	0.4605	7.7180	9.0450

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	14.8980	16.3271	100.000
200 POUNDS NITROGEN	19.8225	18.6081	113.971
400 POUNDS NITROGEN	19.2230	18.7710	114.969

---------- GEOGRAPHIC REGION=NORTHEAST WASHINGTON INSTALLATION NUMBER=214 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3600.0000			
AVERAGE AGE OF INSTALLATION	1	50.0000			
PERCENT SLOPE	6	5.8333	3.7639	0.0000	10.0000
SITE INDEX (DF)	6	69.9733	4.5084	65.9600	78.5000
SOIL TOTAL NITROGEN (PPM)	6	2181.3333	256.0333	1889.0000	2493.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	1811.6667	250.9579	1506.0000	2145.0000
INITIAL TREES/ACRE	6	201.6667	36.5605	160.0000	260.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	91.6905	15.0669	65.5470	112.0160
INITIAL VOLUME/ACRE (CU.FT)	6	2061.4367	370.0469	1419.4900	2519.9800
QUADRATIC MEAN DIAMETER (IN)	6	9.1868	1.0370	7.3910	10.3530

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	11.0540	10.0596	100.000
200 POUNDS NITROGEN	11.3330	13.0928	130.152
400 POUNDS NITROGEN	13.5755	13.2844	132.057

---------- GEOGRAPHIC REGION=NORTHEAST WASHINGTON INSTALLATION NUMBER=215 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3400.0000			
AVERAGE AGE OF INSTALLATION	1	51.0000			
PERCENT SLOPE	6	26.6667	15.7056	10.0000	45.0000
SITE INDEX (DF)	6	67.8517	4.6616	60.5000	72.6500
SOIL TOTAL NITROGEN (PPM)	6	2418.5000	346.1547	1863.0000	2830.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	893.3333	68.3745	790.0000	955.0000
INITIAL TREES/ACRE	6	213.3333	45.0185	140.0000	260.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	73.1098	13.5848	57.7370	90.3340
INITIAL VOLUME/ACRE (CU.FT)	6	1543.7633	361.7418	1216.6600	2013.9700
QUADRATIC MEAN DIAMETER (IN)	6	7.9703	0.5354	7.1410	8.6960

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	10.0665	9.9788	100.000
200 POUNDS NITROGEN	14.4685	13.3937	134.221
400 POUNDS NITROGEN	12.0760	13.6081	136.369

---------- GEOGRAPHIC REGION=NORTHEAST WASHINGTON INSTALLATION NUMBER=216 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3200.0000			
AVERAGE AGE OF INSTALLATION	1	66.0000			
PERCENT SLOPE	6	13.3333	7.5277	5.0000	25.0000
SITE INDEX (DF)	6	67.0850	6.4011	57.7400	76.1800
SOIL TOTAL NITROGEN (PPM)	6	2546.5000	742.9756	1664.0000	3432.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	810.0000	228.1386	489.0000	1028.0000
INITIAL TREES/ACRE	6	280.0000	36.8782	230.0000	320.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	142.8768	15.2853	117.8290	157.4140
INITIAL VOLUME/ACRE (CU.FT)	6	3930.5100	406.8459	3408.3300	4344.5900
QUADRATIC MEAN DIAMETER (IN)	6	9.7102	0.7811	8.7980	10.6160

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	6.4495	6.5138	100.000
200 POUNDS NITROGEN	7.3420	7.7885	119.570
400 POUNDS NITROGEN	8.4195	7.8733	120.871

---------- GEOGRAPHIC REGION=NORTHEAST WASHINGTON INSTALLATION NUMBER=217 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	2900.0000			
AVERAGE AGE OF INSTALLATION	1	75.0000			
PERCENT SLOPE	6	5.0000	4.4721	0.0000	10.0000
SITE INDEX (DF)	6	61.1700	10.3292	51.6300	75.6300
SOIL TOTAL NITROGEN (PPM)	6	2122.1667	360.4089	1667.0000	2524.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	1369.6667	228.0190	1081.0000	1555.0000
INITIAL TREES/ACRE	6	218.3333	57.7639	120.0000	270.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	113.6217	21.9403	77.6040	142.8800
INITIAL VOLUME/ACRE (CU.FT)	6	2855.3067	588.5741	1803.3400	3601.0600
QUADRATIC MEAN DIAMETER (IN)	6	9.9340	1.3727	8.8670	12.5120

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	8.3820	8.3294	100.000
200 POUNDS NITROGEN	10.0625	10.4541	125.508
400 POUNDS NITROGEN	11.2810	10.5903	127.143

---------- GEOGRAPHIC REGION=NORTHEAST WASHINGTON INSTALLATION NUMBER=218 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3000.0000			
AVERAGE AGE OF INSTALLATION	1	100.0000			
PERCENT SLOPE	6	19.1667	8.0104	5.0000	25.0000
SITE INDEX (DF)	6	48.2800	3.7797	42.6100	53.5900
SOIL TOTAL NITROGEN (PPM)	6	1572.0000	379.4770	1222.0000	2127.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	663.5000	252.8231	446.0000	1065.0000
INITIAL TREES/ACRE	6	151.6667	22.2860	120.0000	170.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	94.6838	10.7923	79.7760	110.9510
INITIAL VOLUME/ACRE (CU.FT)	6	2281.6833	324.6019	1918.3300	2754.8200
QUADRATIC MEAN DIAMETER (IN)	6	10.7293	0.4716	9.9600	11.2990

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	9.9005	8.1445	100.000
200 POUNDS NITROGEN	9.2590	10.5478	129.508
400 POUNDS NITROGEN	10.0325	10.6999	131.376

---------- GEOGRAPHIC REGION=NORTHEAST WASHINGTON INSTALLATION NUMBER=281 ----------

STAND CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
ELEVATION OF INSTALLATION (FEET)	1	3300.0000			
AVERAGE AGE OF INSTALLATION	1	73.0000			
PERCENT SLOPE	6	17.5000	6.8920	5.0000	25.0000
SITE INDEX (DF)	6	61.4917	5.7919	54.5300	68.1900
SOIL TOTAL NITROGEN (PPM)	6	1239.0000	148.4507	1076.0000	1470.0000
SOIL TOTAL PHOSPHORUS (PPM)	6	1444.8333	558.4574	968.0000	2429.0000
INITIAL TREES/ACRE	6	240.0000	34.0583	210.0000	300.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	6	130.3522	21.9697	101.3290	154.7700
INITIAL VOLUME/ACRE (CU.FT)	6	3370.0783	834.6615	2449.9800	4470.0300
QUADRATIC MEAN DIAMETER (IN)	6	9.9915	0.9277	8.9110	11.3570

BASAL AREA GROWTH (1981 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	7.9005	7.5369	100.000
200 POUNDS NITROGEN	9.6060	9.2009	122.077
400 POUNDS NITROGEN	9.0835	9.3094	121.517

Analysis of Variance Table for the 1980 installations.

ANALYSIS OF VARIANCE TABLE AND PARAMETER ESTIMATES

DEPENDENT VARIABLE: BAINC BASAL AREA ACCRETION FROM 1980 TO 1983

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	12	179.28386106	14.94032175	11.60
ERROR	19	24.47429866	1.28812098	PR > F
CORRECTED TOTAL	31	203.75815972		0.0001

R-SQUARE	C.V.	ROOT MSE	BAINC MEAN
0.879886	7.8836	1.13495418	14.39640625

SOURCE	DF	TYPE I SS	F VALUE	PR > F
INSTALLATION	3	77.12537409	19.96	0.0001
TREATMENT	6	31.66289697	4.10	0.0084
SLOPE	1	31.54651647	24.49	0.0001
SITE INDEX	1	19.60988994	15.22	0.0010
BASAL AREA	1	19.33918359	15.01	0.0010

SOURCE	DF	TYPE III SS	F VALUE	PR > F
INSTALLATION	3	78.86241502	20.41	0.0001
TREATMENT	6	25.40841901	3.29	0.0217
SLOPE	1	16.39647825	12.73	0.0021
SITE INDEX	1	13.33677056	10.35	0.0045
BASAL AREA	1	19.33918359	15.01	0.0010

PARAMETER		ESTIMATE	T FOR H0: PARAMETER=0	PR > |T|	STD ERROR OF ESTIMATE
INTERCEPT		1.55950377	0.27	0.7938	5.88231473
INSTALLATION	103	-1.84806574	-0.87	0.3942	2.11973537
	104	-3.01674535	-2.33	0.0310	1.29490232
	105	-9.86780334	-4.39	0.0003	2.24733168
	106	0.00000000	.	.	.
TREATMENT	CONTROL	-2.18564801	-3.02	0.0070	0.72355979
	200--FALL	0.02873546	0.03	0.9728	0.83307872
	400--FALL	0.34017899	0.40	0.6940	0.85146810
	N+S--FALL	-1.19206207	-1.44	0.1671	0.82972901
	200-SPRING	-0.76673717	-0.95	0.3544	0.80773373
	400-SPRING	0.38231343	0.45	0.6573	0.84835224
	N+S-SPRING	0.00000000	.	.	.
SLOPE		-0.13553140	-3.57	0.0021	0.03798770
SITE INDEX		0.19531522	3.22	0.0045	0.06070005
BASAL AREA		0.06914058	3.87	0.0010	0.01784400

Average adjusted three-year basal area per acre increment by treatment.

MEANS ADJUSTED TO A COMMON SLOPE, SITE INDEX AND INITIAL BASAL AREA

TREATMENT	MEAN BA INCREMENT	STD ERR MEAN	% OF CONTROL
CONTROL	12.9081167	0.4340464	
200# N--FALL	15.1225001	0.5874061	117.15
400# N--FALL	15.4339437	0.5981148	119.57
200# N + 50# S--FALL	13.9017026	0.6198605	107.70
200# N--SPRING	14.3270275	0.5718942	110.99
400# N--SPRING	15.4760781	0.5894965	119.89
200# N + 50# S--SPRING	15.0937647	0.5804563	116.93

PROB > |T| HO: MEAN(I) = MEAN(J)

I/J	1	2	3	4	5	6	7
1	.	0.0083	0.0039	0.2159	0.0586	0.0028	0.0070
2	0.0083	.	0.7043	0.1792	0.3488	0.6691	0.9728
3	0.0039	0.7043	.	0.0976	0.2045	0.9589	0.6940
4	0.2159	0.1792	0.0976	.	0.6196	0.0872	0.1671
5	0.0586	0.3488	0.2045	0.6196	.	0.1842	0.3544
6	0.0028	0.6691	0.9589	0.0872	0.1842	.	0.6573
7	0.0070	0.9728	0.6940	0.1671	0.3544	0.6573	.

Adjusted and unadjusted three-year basal area per acre increment and site and stand characteristics for each 1980 installation.

---------- INSTALLATION NUMBER=103 ----------

INSTALLATION CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
INSTALLATION ELEVATION (FT)	1	5000.0000			
INSTALLATION AGE	1	61.0000			
DOUGLAS-FIR SITE INDEX	8	56.4688	4.3199	48.3300	61.2600
SLOPE (%)	8	21.8750	7.9899	10.0000	30.0000
INITIAL TREES/ACRE	8	163.7500	24.4584	140.0000	200.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	8	98.3281	20.2170	67.0610	126.7100
INITIAL VOLUME/ACRE (CU.FT)	8	2200.0475	691.2409	1425.4900	3589.4600
QUADRATIC MEAN DIAMETER (IN)	8	10.4956	1.2004	9.3710	12.8820

BASAL AREA ACCRETION (1980 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	14.2696	12.3887	
200 # NITROGEN--FALL	10.0810	14.6031	117.87
400 # NITROGEN--FALL	10.2450	14.9145	120.39
200 # NITROGEN + 50 # SULPHUR--FALL	17.2740	13.3823	108.02
200 # NITROGEN--SPRING	16.5900	13.8076	111.45
400 # NITROGEN--SPRING	14.4680	14.9567	120.73
200 # NITROGEN + 50 # SULPHUR--SPRING	15.3450	14.5744	117.64

---------- INSTALLATION NUMBER=104 ----------

INSTALLATION CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
INSTALLATION ELEVATION (FT)	1	4400.0000			
INSTALLATION AGE	1	42.0000			
DOUGLAS-FIR SITE INDEX	8	70.0013	2.0609	67.0700	73.0800
SLOPE (%)	8	26.2500	6.4087	15.0000	35.0000
INITIAL TREES/ACRE	8	181.6666	28.0023	140.0000	220.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	8	80.6273	6.0983	73.0810	91.3150
INITIAL VOLUME/ACRE (CU.FT)	8	1553.7575	145.8141	1384.9600	1794.9200
QUADRATIC MEAN DIAMETER (IN)	8	9.0840	0.7428	8.3980	10.4780

BASAL AREA ACCRETION (1980 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	14.2376	12.0463	
200 # NITROGEN--FALL	13.5260	14.2607	118.38
400 # NITROGEN--FALL	14.7750	14.5722	120.97
200 # NITROGEN + 50 # SULPHUR--FALL	13.6210	13.0399	108.25
200 # NITROGEN--SPRING	11.8080	13.4652	111.78
400 # NITROGEN--SPRING	15.6770	14.6143	121.32
200 # NITROGEN + 50 # SULPHUR--SPRING	12.8200	14.2320	118.14

---------- INSTALLATION NUMBER=105 ----------

INSTALLATION CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
INSTALLATION ELEVATION (FT)	1	2800.0000			
INSTALLATION AGE	1	83.0000			
DOUGLAS-FIR SITE INDEX	8	67.5900	5.1878	62.4000	76.9400
SLOPE (%)	8	12.5000	5.3452	10.0000	25.0000
INITIAL TREES/ACRE	8	177.5000	31.9598	140.0000	220.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	8	153.6951	16.9935	125.9470	176.1790
INITIAL VOLUME/ACRE (CU.FT)	8	4853.5013	624.0260	3970.5900	5755.9200
QUADRATIC MEAN DIAMETER (IN)	8	12.7100	1.2644	10.8770	14.6010

BASAL AREA ACCRETION (1980 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	10.4119	11.6398	
200 # NITROGEN--FALL	15.1470	13.8542	119.02
400 # NITROGEN--FALL	16.2030	14.1657	121.70
200 # NITROGEN + 50 # SULPHUR--FALL	14.6600	12.6334	108.54
200 # NITROGEN--SPRING	12.1110	13.0587	112.19
400 # NITROGEN--SPRING	13.5170	14.2078	122.06
200 # NITROGEN + 50 # SULPHUR--SPRING	13.0920	13.8255	118.78

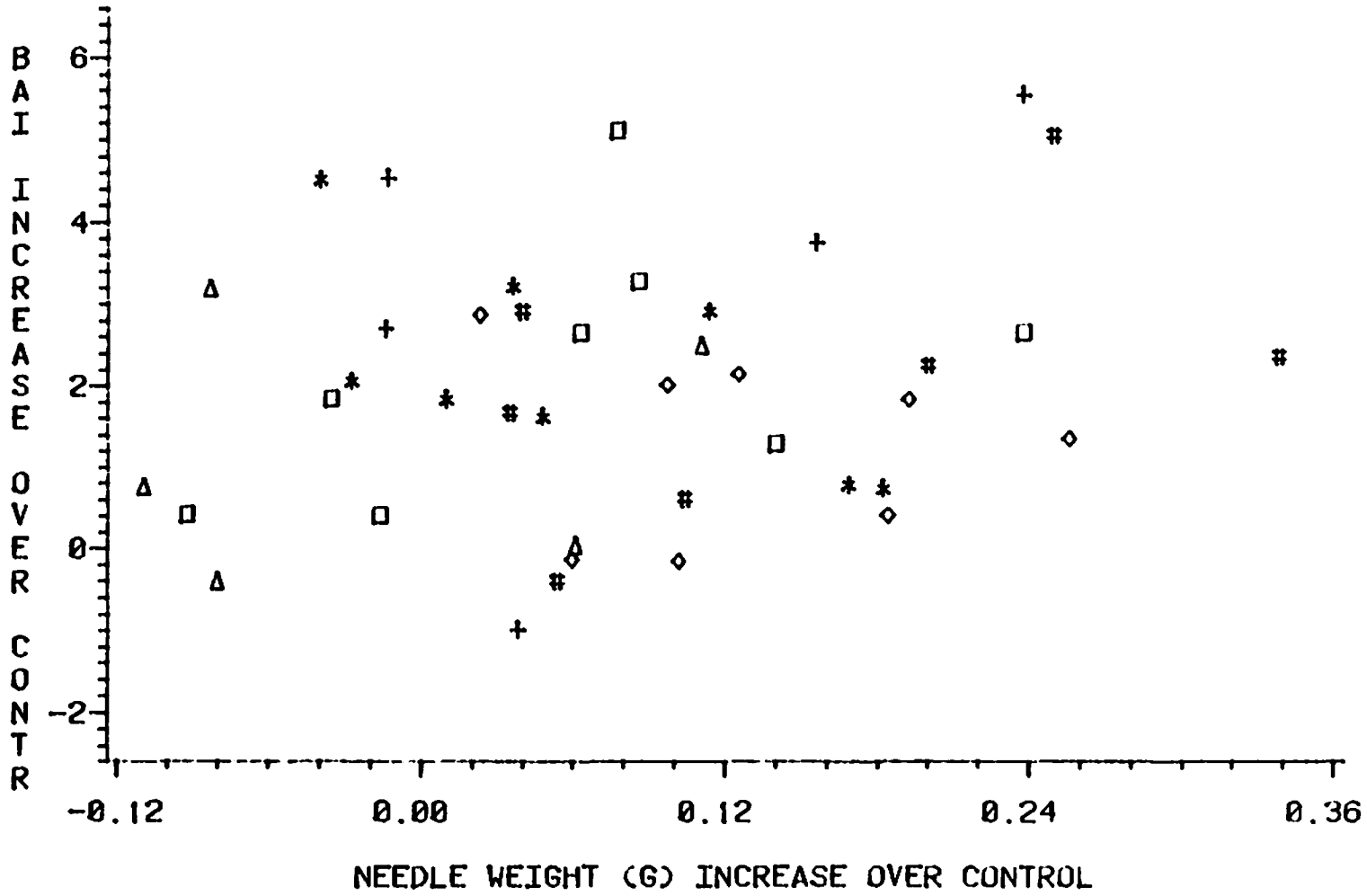
---------- INSTALLATION NUMBER=106 ----------

INSTALLATION CHARACTERISTIC:	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
INSTALLATION ELEVATION (FT)	1	2700.0000			
INSTALLATION AGE	1	41.0000			
DOUGLAS-FIR SITE INDEX	8	81.9225	4.7039	75.0100	88.4000
SLOPE (%)	8	45.0000	4.6291	40.0000	50.0000
INITIAL TREES/ACRE	8	240.0000	43.4248	200.0000	330.0000
INITIAL BASAL AREA/ACRE (SQ.FT)	8	90.8574	8.3736	80.8410	106.2610
INITIAL VOLUME/ACRE (CU.FT)	8	2079.0875	222.0583	1796.0900	2417.2500
QUADRATIC MEAN DIAMETER (IN)	8	8.3843	0.4954	7.3280	8.9590

BASAL AREA ACCRETION (1980 TO 1983):	UNADJUSTED	ADJUSTED	% OF CONTROL
CONTROL	14.3388	15.5576	
200 # NITROGEN--FALL	18.6120	17.7720	114.23
400 # NITROGEN--FALL	18.7370	18.0834	116.24
200 # NITROGEN + 50 # SULPHUR--FALL	16.1120	16.5512	106.39
200 # NITROGEN--SPRING	16.6670	16.9765	109.12
400 # NITROGEN--SPRING	17.6970	18.1255	116.51
200 # NITROGEN + 50 # SULPHUR--SPRING	19.4100	17.7432	114.05

The relationship between change in first-year needle weight and basal area growth response.

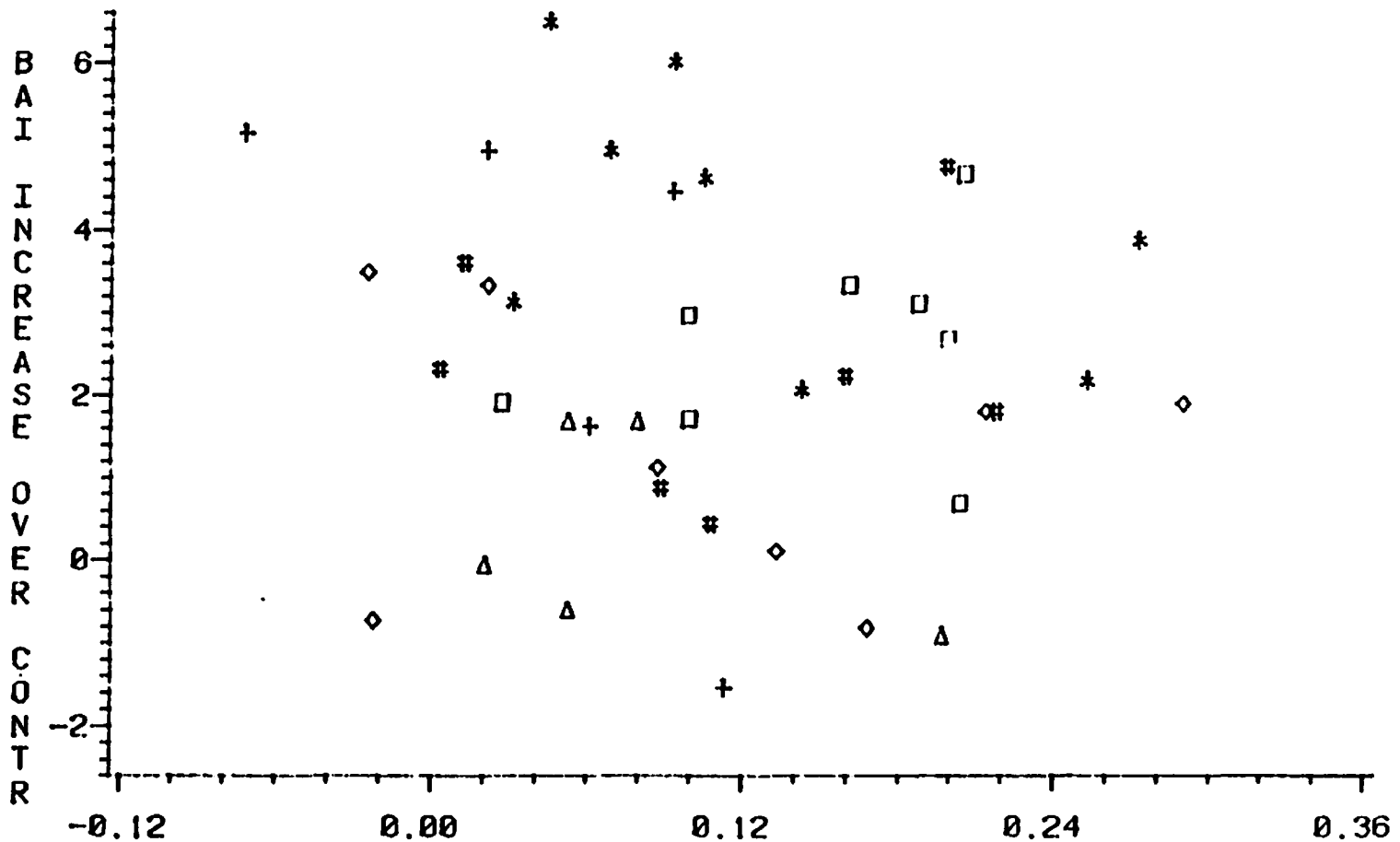
GROWTH RESPONSE VERSUS CHANGE IN NEEDLE WEIGHT
FERT=200 # NITROGEN



LEGEND: REGION

* * * CENT WASHINGTON	□ □ □ CENTRAL IDAHO
◇ ◇ ◇ MONTANA	Δ Δ Δ NE OREGON
# # # NE WASHINGTON	+ + + NORTH IDAHO

GROWTH RESPONSE VERSUS CHANGE IN NEEDLE WEIGHT
FERT=400 # NITROGEN

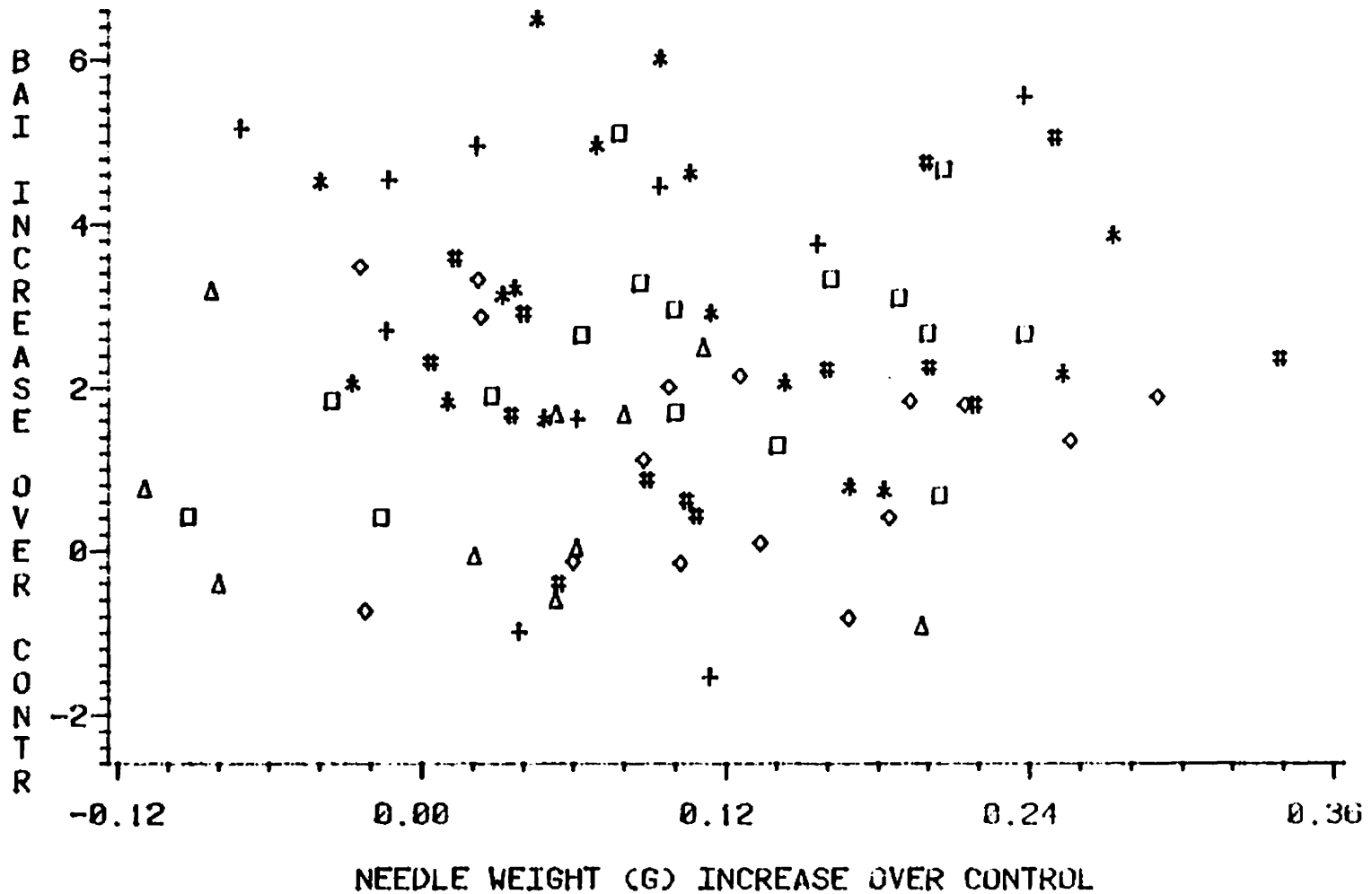


NEEDLE WEIGHT (G) INCREASE OVER CONTROL

LEGEND: REGION

* * * CENT WASHINGTON
◇ ◇ ◇ MONTANA
NE WASHINGTON
□ □ □ CENTRAL IDAHO
Δ Δ Δ NE OREGON
+ + + NORTH IDAHO

GROWTH RESPONSE VERSUS CHANGE IN NEEDLE WEIGHT
BOTH FERTILIZATION TREATMENTS



LEGEND: REGION

* * * CENT WASHINGTON
◇ ◇ ◇ MONTANA
NE WASHINGTON
□ □ □ CENTRAL IDAHO
Δ Δ Δ NE OREGON
+ + + NORTH IDAHO

Summaries of the physical characteristics of each installation, including habitat type and soil parent material.

Ecological Summary

Installation 201
Geographical Region: Central Idaho
Ownership: Boise Cascade Corp.

Plot 1

Elevation: 5625' Aspect: 246° % Slope: 25-30%
Site position: Concave slope near ravine; just below roadcut.
Habitat type: ABGR/LIBO VAGL phase.
Soil characteristics: Deep, highly micaceous soil derived from granite.
Range & wildlife impact: Light to moderate.

Plot 2

Elevation: 5665' Aspect: 288° % Slope: 10-20%
Site position: Gently sloping bench below ridgetop.
Habitat type: ABGR/SPBE.
Soil characteristics: Moderate to deep sand derived from granite.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 3

Elevation: 5675' Aspect: 312° % Slope: 20-30%
Site position: Irregular slope below ridgetop.
Habitat type: PSME/LIBO.
Soil characteristics: Deep, micaceous sand derived from granite.
Range & wildlife impact: Moderate cattle use; light wildlife use.

Plot 4

Elevation: 5650' Aspect: 84° % Slope: 10-15%
Site position: Undulating slope near bottom of ravine.
Habitat type: ABGR/LIBO VAGL phase.
Soil characteristics: Deep micaceous sand derived from granite; compacted at 18".
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 5

Elevation: 5700' Aspect: 22° % Slope: 15-20%
Site position: Upper slope below rounded ridgetop.
Habitat type: PSME/LIBO.
Soil characteristics: Deep, white sand derived from granite.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 6

Elevation: 5690' Aspect: 79° % Slope: 20-30%
Site position: Undulating upper slope near ridgetop.
Habitat type: PSME/LIBO.
Soil characteristics: Deep, white sand derived from granite.
Range & wildlife impact: Moderate cattle use; light wildlife use.

Installation 202
Geographical Region: Central Idaho
Ownership: Boise Cascade Corp.

Plot 1

Elevation: 5450' Aspect: 288° % Slope: 10-15%
Site position: Rounded ridgetop running down to a saddle.
Habitat type: PSME/VAGL
Soil characteristics: Deep, coarse sand derived from granite; considerable mica present.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 2

Elevation: 5500' Aspect: 323° % Slope: 40-50%
Site position: Steep slope running from ridgetop to ravine bottom.
Habitat type: PSME/LIBO.
Soil characteristics: Deep, coarse sand derived from granite.
Range & wildlife impact: Light to moderate.

Plot 3

Elevation: 5600' Aspect: 329° % Slope: 20-35%
Site position: Upper slope near top of rounded ridge.
Habitat type: PSME/VAGL.
Soil characteristics: Shallow to deep, gravelly sand derived from granite.
Range & wildlife impact: Moderate cattle use; light wildlife use.

Plot 4

Elevation: 5525' Aspect: 292° % Slope: 10-15%
Site position: Rounded slope near top of ridge.
Habitat type: PSME/VACA.
Soil characteristics: Moderate to deep sand derived from granite; compacted at 8".
Range & wildlife impact: Moderate cattle use; light to moderate wildlife use.

Plot 5

Elevation: 5600' Aspect: 338° % Slope: 35-55%
Site position: Steep upper slope running into ravine.
Habitat type: PSME/VAGL.
Soil characteristics: Moderate to deep sand derived from granite.
Range & wildlife impact: Light to moderate.

Plot 6

Elevation: 5675' Aspect: 298° % Slope: 25-40%
Site position: Ravine between two broad ridges.
Habitat type: PSME/VAGL.
Soil characteristics: Deep sand derived from granite.
Range & wildlife impact: Light to moderate.

Installation 203
Geographical Region: Central Idaho
Ownership: Boise Cascade Corp.

Plot 1

Elevation: 5560' Aspect: 341° % Slope: 20-35%
Site position: Undulating slope below ridgetop.
Habitat type: PSME/VAGL.
Soil characteristics: Deep sand derived from granite.
Range & wildlife impact: Light to moderate.

Plot 2

Elevation: 5530' Aspect: 348° % Slope: 5-25%
Site position: Sloping benchtop just above break in slope.
Habitat type: ABGR/LIBO VAGL phase.
Soil characteristics: Deep sand derived from granite.
Range & wildlife impact: Light cattle use, light to moderate wildlife use.

Plot 3

Elevation: 5535' Aspect: 24°, variable % Slope: 25-30%
Site position: Undulating slope in small bowl.
Habitat type: ABGR/LIBO VAGL phase.
Soil characteristics: Deep sand derived from granite.
Range & wildlife impact: Light cattle use; light to moderate wildlife use.

Plot 4

Elevation: 5525' Aspect: 86° % Slope: 25%
Site position: Rounded bench to undulating slope.
Habitat type: ABGR/SPBE.
Soil characteristics: Deep sand derived from granite.
Range & wildlife impact: Moderate cattle use; light to moderate wildlife use.

Plot 5

Elevation: 5515' Aspect: 146° % Slope: 25%
Site position: Rounded bench to undulating slope.
Habitat type: ABGR/SPBE.
Soil characteristics: Deep sand derived from granite.
Range & wildlife impact: Moderate cattle use; light to moderate wildlife use.

Plot 6

Elevation: 5540' Aspect: 90° % Slope: 20-25%
Site position: Irregular slope near rounded spur.
Habitat type: ABGR/SPBE.
Soil characteristics: Deep sand derived from granite; compacted at 24".
Range & wildlife impact: Light to moderate.

Installation 204
Geographical Region: North Idaho
Ownership: Idaho Dept. of Lands

Plot 1

Elevation: 3100' Aspect: 222° % Slope: 30-35%
Site position: Undulating slope easing off above and below.
Habitat type: ABGR/CLUN ASCA phase.
Soil characteristics: Volcanic ash over metasediments; deep with compaction at 20".
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Plot 2

Elevation: 3100' Aspect: 184° % Slope: 35-40%
Site position: Steep, irregular slope bordering rounded ridge on west.
Habitat type: ABGR/CLUN ASCA phase.
Soil characteristics: Thick ash layer over micaceous metasedimentary materials; compacted at 18".
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Plot 3

Elevation: 3100' Aspect: 223° % Slope: 40-45%
Site position: Rounded ridgetop, slope easing near top.
Habitat type: ABGR/CLUN ASCA phase.
Soil characteristics: Thick ash layer over micaceous metasediments; compacted at 20".
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Plot 4

Elevation: 3100' Aspect: 225° % Slope: 50%
Site position: Steep upper slope.
Habitat type: ABGR/CLUN ASCA phase.
Soil characteristics: Thick ash layer over micaceous metasediments; compacted at 6-10".
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Plot 5

Elevation: 3050' Aspect: 160° % Slope: 25-30%
Site position: Concave slope running into ravine.
Habitat type: ABGR/CLUN ASCA phase.
Soil characteristics: Thick ash layer over sandy material derived from metasediments.
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Plot 6

Elevation: 3100' Aspect: 211° % Slope: 35%
Site position: Shallow undulating ravine.
Habitat type: ABGR/CLUN ASCA phase.
Soil characteristics: Ash layer over micaceous metasediments; depth to rock variable.
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Installation 205
Geographical Region: North Idaho
Ownership: Idaho Dept. of Lands

Plot 1

Elevation: 3000' Aspect: 20° % Slope: 17%
Site position: Lower position on crest of rounded ridge.
Habitat type: THPL/CLUN ASCA phase.
Soil characteristics: Volcanic ash over metasedimentary materials.
Range & wildlife impact: Little cattle use; light wildlife use.

Plot 2

Elevation: 3030' Aspect: 20° % Slope: 13%
Site position: Mid-position on crest of rounded ridge.
Habitat type: THPL/CLUN CLUN phase.
Soil characteristics: Volcanic ash over metasedimentary materials.
Range & wildlife impact: Little cattle use; light wildlife use.

Plot 3

Elevation: 3060' Aspect: 20° % Slope: 13%
Site position: Mid-position on crest of rounded ridge.
Habitat type: THPL/CLUN ASCA phase.
Soil characteristics: Volcanic ash over metasedimentary materials.
Range & wildlife impact: Little cattle use; light wildlife use.

Plot 4

Elevation: 3200' Aspect: variable % Slope: 3-5%
Site position: Level benchtop sloping away at edges of plot.
Habitat type: ABGR/CLUN ASCA phase.
Soil characteristics: Thick ash layer over metasedimentary materials.
Range & wildlife impact: Little cattle use; light wildlife use.

Plot 5

Elevation: 3200' Aspect: 290° % Slope: 5-10%
Site position: Gently sloping bench.
Habitat type: ABGR/CLUN ASCA phase.
Soil characteristics: Ash layer over metasedimentary materials.
Range & wildlife impact: Little cattle use; light wildlife use.

Plot 6

Elevation: 3190' Aspect: 190° % Slope: 5-10%
Site position: Gently sloping bench.
Habitat type: ABGR/CLUN ASCA phase.
Soil characteristics: Deep ash layer over metasedimentary materials; restricting layer at 36".
Range & wildlife impact: Little cattle use; light wildlife use.

Installation 206
Geographical Region: North Idaho
Ownership: Idaho Dept. of Lands

Plot 1

Elevation: 3200' Aspect: 282° % Slope: 6%
Site position: Gently sloping, undulating terrain.
Habitat type: THPL/CLUN ASCA phase.
Soil characteristics: Thick (18") ash soil over metasedimentary materials.
Range & wildlife impact: Moderate wildlife use.

Plot 2

Elevation: 3200' Aspect: 256° % Slope: 4%
Site position: Very gently sloping terrain.
Habitat type: THPL/CLUN CLUN phase.
Soil characteristics: Thick ash soil over metasedimentary materials.
Range & wildlife impact: Heavy wildlife use.

Plot 3

Elevation: 3200' Aspect: - % Slope: 0%
Site position: Nearly flat terrain.
Habitat type: THPL/CLUN ASCA phase.
Soil characteristics: Thick ash soil over metasedimentary materials.
Range & wildlife impact: Heavy wildlife use.

Plot 4

Elevation: 3200' Aspect: 108° % Slope: 5%
Site position: Flat to gently sloping terrain.
Habitat type: THPL/CLUN CLUN phase.
Soil characteristics: Thick ash soil over metasedimentary materials.
Range & wildlife impact: Light cattle use; moderate wildlife use.

Plot 5

Elevation: 3200' Aspect: 86° % Slope: 6%
Site position: Nearly flat terrain with numerous hummocks.
Habitat type: THPL/CLUN CLUN phase.
Soil characteristics: Thick ash soil over metasedimentary materials.
Range & wildlife impact: Moderate wildlife use.

Plot 6

Elevation: 3200' Aspect: 61° % Slope: 9-10%
Site position: Gently sloping terrain.
Habitat type: THPL/CLUN ASCA phase.
Soil characteristics: Thick ash soil over metasedimentary materials.
Range & wildlife impact: Moderate wildlife use.

Installation 207
Geographical Region: North Idaho
Ownership: Potlatch Corporation

Plot 1

Elevation: 3640' Aspect: 328° % Slope: 20%
Site position: Sloping ridgecrest.
Habitat type: PSME/PHMA PHMA phase.
Soil characteristics: Shallow, rocky silt loam derived from basalt.
Range & wildlife impact: Moderate cattle use; light to moderate wildlife use.

Plot 2

Elevation: 3675' Aspect: 338° % Slope: 15%
Site position: Lower slope just above bench.
Habitat type: PSME/SYAL → ABGR series.
Soil characteristics: Moderately deep silt loam derived from basalt.
Range & wildlife impact: Moderate.

Plot 3

Elevation: 3700' Aspect: 309° % Slope: 30%
Site position: Lower slope just above bench.
Habitat type: PSME/SYAL
Soil characteristics: Rocky silt loam derived from basalt.
Range & wildlife impact: Moderate.

Plot 4

Elevation: 3650' Aspect: 326° % Slope: 10-15%
Site position: Undulating bench above steep slope.
Habitat type: PSME/SYAL
Soil characteristics: Very rocky silt loam derived from basalt.
Range & wildlife impact: Moderate cattle use; light to moderate wildlife use.

Plot 5

Elevation: 3550' Aspect: 330° % Slope: 20-30%
Site position: Small basin levelling out at bottom of plot.
Habitat type: PSME/SYAL -> ABGR series.
Soil characteristics: Rocky, silt loam derived from basalt; possibly some ash mixed in.
Range & wildlife impact: Light cattle use; light to moderate wildlife use.

Plot 6

Elevation: 3500' Aspect: 307° % Slope: 15-20%
Site position: Sloping bench below steep slope.
Habitat type: PSME/PHMA PHMA
Soil characteristics: Rocky silt loam derived from basalt.
Range & wildlife impact: Light to moderate.

Installation 208
Geographical Region: North Idaho
Ownership: Potlatch Corporation

Plot 1

Elevation: 2925' Aspect: 111° % Slope: 10-15%
Site position: Gently undulating, rounded benchtop.
Habitat type: ABGR/CLUN CLUN phase.
Soil characteristics: Loess and ash over metasedimentary materials.
Range & wildlife impact: Light wildlife use.

Plot 2

Elevation: 2920' Aspect: 172° % Slope: 10-15%
Site position: Gentle slope below flat hilltop.
Habitat type: ABGR/LIBO
Soil characteristics: Loess and ash over metasediments; shallow soil (15" deep).
Range & wildlife impact: Light wildlife use.

Plot 3

Elevation: 2900' Aspect: 174° % Slope: 10-15%
Site position: Gently sloping hillside.
Habitat type: PSME/PHMA PHMA phase.
Soil characteristics: Shallow loess (and ash?) soil over metasedimentary rock.
Range & wildlife impact: Light wildlife use.

Plot 4

Elevation: 2905' Aspect: 220° % Slope: 10-15%
Site position: Undulating slope on side of rounded ridge.
Habitat type: PSME/PHMA PHMA phase -> ABGR series.
Soil characteristics: Shallow loess over metasedimentary rock.
Range & wildlife impact: Light wildlife use.

Plot 5

Elevation: 2870' Aspect: 216° % Slope: 20%
Site position: Uniform slope above steep slope on rounded hill.
Habitat type: PSME/PHMA PHMA phase -> PSME/SYAL.
Soil characteristics: Moderately deep loess soil over metasedimentary rock.
Range & wildlife impact: Little to no cattle use; light wildlife use.

Plot 6

Elevation: 2885' Aspect: 267° % Slope: 25%
Site position: Upper slope on rounded hillside.
Habitat type: PSME/PHMA PHMA phase.
Soil characteristics: Moderately shallow loess over metasedimentary rock.
Range & wildlife impact: Little to no cattle use; light wildlife use.

Installation 209
Geographical Region: N. E. Washington
Ownership: Boise Cascade Corporation

Plot 1

Elevation: 2825' Aspect: 70° % Slope: 25-30%
Site position: Sloping bench at mid-slope on mountainside.
Habitat type: PSME/PHMA PHMA phase.
Soil characteristics: Ash layer over shale.
Range & wildlife impact: Little or no cattle use; moderate wildlife use.

Plot 2

Elevation: 2850' Aspect: 38° % Slope: 30%
Site position: Concave mid-slope
Habitat type: PSME/PHMA PHMA phase.
Soil characteristics: Ash over and mixed with glacial till.
Range & wildlife impact: Little or no cattle use; light wildlife use.

Plot 3

Elevation: 2875' Aspect: 88° % Slope: 23%
Site position: Uniform mid-slope
Habitat type: PSME/PHMA CARU phase
Soil characteristics: Shallow; ash layer over shale or glacial till.
Range & wildlife impact: Little or no cattle use; moderate wildlife use.

Plot 4

Elevation: 2750' Aspect: 68° % Slope: 40%
Site position: Steep mid to lower slope.
Habitat type: PSME/PHMA CARU phase.
Soil characteristics: Volcanic ash mixed with glacial till.
Range & wildlife impact: Light, wildlife use.

Plot 5

Elevation: 2775' Aspect: 45° % Slope: 33%
Site position: Undulating mid-slope.
Habitat type: PSME/PHMA PHMA phase.
Soil characteristics: Volcanic ash mixed with glacial till.
Range & wildlife impact: Little or no cattle use; moderate wildlife use.

Plot 6

Elevation: 2775' Aspect: 64° % Slope: 20-25%
Site position: Concave mid-slope.
Habitat type: ABGR/LIBO
Soil characteristics: Volcanic ash mixed with glacial till.
Range & wildlife impact: Light to moderate wildlife use.

Installation 210
Geographical Region: N. E. Washington
Ownership: Inland Empire Paper Co.

Plot 1

Elevation: 2630' Aspect: 298° % Slope: 45%
Site position: Mid-slope below rocky ridgetop.
Habitat type: PSME/PHMA CARU phase.
Soil characteristics: Shallow, sandy soil derived from granite; numerous exposed boulders.
Range & wildlife impact: Light wildlife use.

Plot 2

Elevation: 2640' Aspect: 330° % Slope: 10-40%
Site position: Upper slope near ridgetop; shallow drainage through part of plot.
Habitat type: PSME/PHMA CARU phase.
Soil characteristics: Ash and loess over granite; very rocky; depth variable.
Range & wildlife impact: Light wildlife use.

Plot 3

Elevation: 2600' Aspect: 310° % Slope: 25-35%
Site position: Variable; lower slope on rounded ridge.
Habitat type: PSME/PHMA CARU phase.
Soil characteristics: Very rocky & gravelly soil derived from granite; some ash/loess present.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 4

Elevation: 2575' Aspect: 278° % Slope: 20-35%
Site position: Toeslope at bottom of steep slope.
Habitat type: PSME/PHMA CARU phase -> ABGR/CLUN ASCA phase (bottom of plot)
Soil characteristics: Shallow, ash/loess over granite; numerous exposed boulders.
Range & wildlife impact: Light to moderate wildlife use.

Plot 5

Elevation: 2550' Aspect: 294° % Slope: 20%
Site position: Lower slope with small knoll in plot.
Habitat type: PSME/PHMA CARU phase.
Soil characteristics: Ash/loess over granite; shallow with many boulders.
Range & wildlife impact: Light to moderate wildlife use.

Plot 6

Elevation: 2525' Aspect: 320° % Slope: 10-25%
Site position: Knoll with irregular slope.
Habitat type: PSME/PHMA CARU phase -> ABGR/CLUN ASCA phase.
Soil characteristics: Shallow to moderately shallow ash/loess over granite; extremely rocky.
Range & wildlife impact: Light wildlife use.

Installation 211
Geographical Region: N.E. Wash.
Ownership: Inland Empire Paper Co.

Plot 1

Elevation: 2850' Aspect: 117° % Slope: 30-35%
Site position: Undulating upper slope
Habitat type: ABGR/PHMA
Soil characteristics: Ash/loess mixed with granitic colluvium or till.
Range & wildlife impact: Light wildlife use.

Plot 2

Elevation: 2775' Aspect: 144° % Slope: 35-40%
Site position: Uniform slope
Habitat type: ABGR/PHMA
Soil characteristics: Ash/loess mixed with granitic colluvium or till.
Range & wildlife impact: Light wildlife use.

Plot 3

Elevation: 2750' Aspect: 134° % Slope: 45%
Site position: Uniform steep slope
Habitat type: ABGR/PHMA
Soil characteristics: ash/loess mixed with granitic colluvium or till.
Range & wildlife impact: Light wildlife use.

Plot 4

Elevation: 2775' Aspect: 133° % Slope: 35-40%
Site position: Convex to uniform slope, slightly undulating
Habitat type: ABGR/CLUN ASCA phase →THPL/CLUN ASCA phase
Soil characteristics: Ash/loess mixed with granitic colluvium or till.
Range & wildlife impact: Light wildlife use.

Plot 5

Elevation: 2775' Aspect: 164° % Slope: 35-40%
Site position: Concave slope
Habitat type: ABGR/PHMA
Soil characteristics: Ash/loess mixed with granitic colluvium or till.
Range & wildlife impact: Light to moderate wildlife use.

Plot 6

Elevation: 2850' Aspect: 135° % Slope: 30-35%
Site position: Undulating upper slope with hummocks
Habitat type: ABGR/PHMA
Soil characteristics: Ash/loess mixed with granitic colluvium or till.
Range & wildlife impact: Light wildlife use.

Installation 212
Geographical Region: N.E. Oregon
Ownership: Boise Cascade Corporation

Plot 1

Elevation: 3800' Aspect: 332° % Slope: 55-60%
Site position: Steep, undulating slope above creek bottom
Habitat type: ABGR/LIBO LIBO phase
Soil characteristics: Very shallow (6-8") silt loam derived from basalt.
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Plot 2

Elevation: 3820' Aspect: 313° % Slope: 50%
Site position: Undulating steep slope
Habitat type: PSME/PHMA PIPO phase → ABGR/LIBO LIBO phase (bottom)
Soil characteristics: Very shallow (2-8") silt loam derived from basalt.
Range & wildlife impact: Little cattle use: light to moderate wildlife use.

Plot 3

Elevation: 3845' Aspect: 308° % Slope: 50-55%
Site position: Undulating steep slope
Habitat type: PSME/PHMA PIPO phase
Soil characteristics: Very shallow (6-10") silt loam derived from basalt
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Plot 4

Elevation: 3860' Aspect: 316° % Slope: 50-55%
Site position: Undulating steep slope
Habitat type: PSME/PHMA PIPO phase
Soil characteristics: Very shallow (10-12") silt loam derived from basalt; numerous exposed rocks.
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Plot 5

Elevation: 3870' Aspect: 326° % Slope: 45-55%
Site position: Undulating steep slope above ravine
Habitat type: PSME/PHMA PIPO phase → ABGR/LIBO LIBO phase (bottom)
Soil characteristics: Very shallow (2-6") silt loam derived from basalt.
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Plot 6

Elevation: 3900' Aspect: 338° % Slope: 40-50%
Site position: Undulating steep slope above ravine
Habitat type: PSME/PHMA PIPO phase → ABGR/LIBO LIBO phase (bottom)
Soil characteristics: Very shallow (6-10") silt loam derived from basalt.
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Installation 216
Geographical Region: N.E. Wash.
Ownership: Boise Cascade Corporation

Plot 1

Elevation: 3215' Aspect: 180° % Slope: 5-10%
Site position: Gently undulating slope on bench
Habitat type: PSME/PHMA PHMA phase → PSME/SYAL
Soil characteristics: Ash/loess mantle over glacial till; shallow; very rocky.
Range & wildlife impact: Little or no cattle use; moderate wildlife use.

Plot 2

Elevation: 3200' Aspect: 246° % Slope: 0-10%
Site position: Gently sloping ridgetop with undulations
Habitat type: PSME/PHMA CARU phase
Soil characteristics: Loess/ash over glacial till; very rocky; shallow.
Range & wildlife impact: Little or no cattle use; moderate wildlife use.

Plot 3

Elevation: 3190' Aspect: 184° % Slope: 10-15%
Site position: Rounded Knob, lower portion of plot steeper
Habitat type: PSME/PHMA CARU phase
Soil characteristics: Thin loess/ash layer over glacial till.
Range & wildlife impact: Little or no cattle use; moderate wildlife use.

Plot 4

Elevation: 3175' Aspect: 91° % Slope: 5-20%
Site position: Irregular ravine bottom and side slopes
Habitat type: PSME/SYAL
Soil characteristics: Ash/loess over glacial till; shallow.
Range & wildlife impact: Little or no cattle use; moderate wildlife use.

Plot 5

Elevation: 3190' Aspect: 93° % Slope: 25-30%
Site position: Concave depression and side slopes
Habitat type: PSME/PHMA PHMA phase
Soil characteristics: Ash over glacial till; very rocky.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 6

Elevation: 3200' Aspect: 152° % Slope: 10-15%
Site position: Undulating slope
Habitat type: PSME/PHMA PHMA phase
Soil characteristics: Loess/ash over glacial till; very rocky.
Range & wildlife impact: Little or no cattle use; moderate wildlife use.

Installation 217
Geographical Region: N.E. Wash.
Ownership: Boise Cascade Corporation

Plot 1

Elevation: 3125' Aspect: 10° % Slope: 10%
Site position: Sloping benchtop
Habitat type: PSME/VACA
Soil characteristics: Volcanic ash over glacial till; gravelly.
Range & wildlife impact: Light to moderate cattle use; moderate wildlife use.

Plot 2

Elevation: 3125' Aspect: 75° % Slope: 5-10%
Site position: Small bench above meadow
Habitat type: PSME/VACA
Soil characteristics: Volcanic ash over glacial till; very rocky; possibly some lake sediments.
Range & wildlife impact: Moderate.

Plot 3

Elevation: 3100' Aspect: 300° % Slope: slight
Site position: Nearly flat valley bottom
Habitat type: PSME/SYAL
Soil characteristics: Volcanic ash over glacial till (& lake sediments?)
Range & wildlife impact: Moderate wildlife use.

Plot 4

Elevation: 3100' Aspect: 180° % Slope: 3%
Site position: Nearly flat valley bottom
Habitat type: PSME/SYAL
Soil characteristics: Volcanic ash over glacial till.
Range & wildlife impact: Light.

Plot 5

Elevation: 3100' Aspect: 260° % Slope: 8%
Site position: Slightly depressional with undulations
Habitat type: PSME/VACA
Soil characteristics: Volcanic ash over glacial till.
Range & wildlife impact: Little cattle use; moderate wildlife use

Plot 6

Elevation: 3120' Aspect: 0° % Slope: 5%
Site position: Gently sloping, undulating
Habitat type: PSME/VACA
Soil characteristics: Volcanic ash over glacial till (& lake sediments).
Range & wildlife impact: Light to moderate cattle use; moderate wildlife use.

Installation 218
Geographical Region: N.E. Wash.
Ownership: Boise Cascade Corporation

Plot 1

Elevation: 3535' Aspect: 231° % Slope: 0-5%
Site position: Sloping, undulating bench with drainage down plot center
Habitat type: PSME/PHMA CARU phase
Soil characteristics: Very rocky glacial till over gneiss bedrock.
Range & wildlife impact: Light to moderate cattle use; light wildlife use.

Plot 2

Elevation: 3540' Aspect: 235° % Slope: 10-15%
Site position: Undulating, convex, sloping bench
Habitat type: PSME/PHMA CARU phase
Soil characteristics: Very rocky glacial till over gneiss bedrock.
Range & wildlife impact: Light.

Plot 3

Elevation: 3525' Aspect: 240° % Slope: 25-30%
Site position: Undulating slope
Habitat type: PSME/PHMA CARU phase
Soil characteristics: Very rocky glacial till over gneiss bedrock.
Range & wildlife impact: Little or no cattle use; light wildlife use.

Plot 4

Elevation: 3460' AspectL 229° % Slope: 20-25%
Site position: Undulating midslope above valley floor
Habitat type: PSME/SYAL
Soil characteristics: Very rocky glacial till over gneiss bedrock.
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Plot 5

Elevation: 3470' Aspect: 222° % Slope: 20-25%
Site position: Broadly undulating slope (concave)
Habitat type: PSME/PHMA CARU phase
Soil characteristics: Very rocky loam derived from glacial till over gneiss bedrock.
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Plot 6

Elevation: 3475' Aspect: 229° % Slope: 15-20%
Site position: Gently undulating, sloping bench
Habitat type: PSME/PHMA CARU phase
Soil characteristics: Very rocky loam derived from glacial till over gneiss bedrock.
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Installation 219
Geographical Region: Central Idaho
Ownership: Boise Cascade Corporation

Plot 1

Elevation: 4795' Aspect: 52° % Slope: 20-30%
Site position: Plot top-sloping bench; plot bottom - ravine bottom
Habitat type: PSME/PHMA PIPO phase
Soil characteristics: Shallow to moderately deep silt loam derived from basalt p.m.
Range & wildlife impact: Moderate cattle use; light wildlife use.

Plot 2

Elevation: 4790' Aspect: 349° % Slope: 20-35%
Site position: Plot top-sloping bench; plot bottom-ravine
Habitat type: PSME/SPBE PIPO phase
Soil characteristics: Shallow to moderately deep silt loam derived from basalt p.m.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 3

Elevation: 4775' Aspect: 349° % Slope: 30-35%
Site position: Strongly undulating slope
Habitat type: PSME/PHMA PIPO phase
Soil characteristics: Fairly deep (36") silt loam derived from basalt p.m.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 4

Elevation: 4810' Aspect: 315° % Slope: 5-15%
Site position: Gently sloping hilltop
Habitat type: PSME/SYAL PIPO phase
Soil characteristics: Shallow silt loam derived from basalt p.m.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 5

Elevation: 4775' Aspect: 306° % Slope: 25%
Site position: Undulating slope with depressional areas
Habitat type: PSME/SYAL PIPO phase
Soil characteristics: Very shallow silt loam derived from basalt p.m.
Range & wildlife impact: Moderate cattle use; light wildlife use.

Plot 6

Elevation: 4785' Aspect: 306° % Slope: 15-25%
Site position: Sloping bench
Habitat type: PSME/CAGE PIPO phase
Soil characteristics: Very rocky & shallow silt loam derived from basalt p.m.
Range & wildlife imapct: Heavy cattle use; light wildlife use.

Installation 220
Geographical Region: Central Idaho
Ownership: Idaho Dept. of Lands

Plot 1

Elevation: 5620' Aspect: 280° % Slope: 20-25%
Site position: Rounded ridge, broadening to a sloping bench.
Habitat type: PSME/VAGL.
Soil characteristics: Moderately deep gravelly sand derived from granite.
Range & wildlife impact: Light cattle use; moderate wildlife use.

Plot 2

Elevation: 5700' Aspect: 286°-326° % Slope: 35-45%
Site position: Steep broad ridgeline.
Habitat type: ABGR/VAGL.
Soil characteristics: Gravelly sand derived from granite; depth quite variable.
Range & wildlife impact: Little or no cattle use; moderate wildlife use.

Plot 3

Elevation: 5620' Aspect: 294° % Slope: 25-35%
Site position: Undulating slope.
Habitat type: PSME/VAGL.
Soil characteristics: Gravelly sand derived from granite; depth variable.
Range & wildlife impact: Little cattle use; moderate wildlife use.

Plot 4

Elevation: 5570' Aspect: 254° % Slope: 20%
Site position: Slightly elevated knoll in ravine bottom.
Habitat type: ABGR/VAGL.
Soil characteristics: Deep, gravelly sand derived from granite.
Range & wildlife impact: Light cattle use; moderate wildlife use.

Plot 5

Elevation: 5710' Aspect: 303° % Slope: 40-50%
Site position: Very irregular steep slope on side of spur.
Habitat type: ABGR/VAGL.
Soil characteristics: Deep, gravelly sand derived from granite.
Range & wildlife impact: Little or no cattle use; moderate to heavy wildlife use.

Plot 6

Elevation: 5700' Aspect: 264° % Slope: 35-40%
Site position: Spur running down slope flanked by ravines.
Habitat type: ABGR/VAGL.
Soil characteristics: Deep, gravelly sand derived from granite.
Range & wildlife impact: Light cattle use; moderate to heavy wildlife use.

Installation 221
Geographical Region: Central Idaho
Ownership: Boise Cascade Corp.

Plot 1

Elevation: 4175' Aspect: 52° % Slope: 40-45%
Site position: Undulating and irregular steep slope.
Habitat type: ABGR/CLUN.
Soil characteristics: Very rocky silt loam derived from basalt; depth variable.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 2

Elevation: 4190' Aspect: 106° % Slope: 45%
Site position: Undulating mid slope.
Habitat type: PSME/PHMA PIPO phase.
Soil characteristics: Extremely rocky silt loam derived from basalt; shallow.
Range & wildlife impact: Moderate cattle use; light wildlife use.

Plot 3

Elevation: 4190' Aspect: 90° % Slope: 50-55%
Site position: Steep, undulating slope, easing at top of plot.
Habitat type: ABGR/VAGL.
Soil characteristics: Extremely rocky silt loam derived from basalt; shallow.
Range & wildlife impact: Light to moderate cattle use; light wildlife use.

Plot 4

Elevation: 4250' Aspect: 112° % Slope: 30-35%
Site position: Gently undulating slope.
Habitat type: PSME/PHMA PIPO phase.
Soil characteristics: Rocky silt loam derived from basalt; depth variable.
Range & wildlife impact: Moderate cattle use; light wildlife use.

Plot 5

Elevation: 4275' Aspect: 87° % Slope: 35-40%
Site position: Undulating slope.
Habitat type: ABGR/ACGL PHMA phase.
Soil characteristics: Rocky silt loam derived from basalt; moderately deep.
Range & wildlife impact: Light to moderate cattle use; light wildlife use.

Plot 6

Elevation: 4190' Aspect: 97° % Slope: 40%
Site position: Undulating slope.
Habitat type: ABGR/ACGL PHMA phase.
Soil characteristics: Extremely rocky silt loam derived from basalt; moderately shallow.
Range & wildlife impact: Light to moderate cattle use; light wildlife use.

Installation 222
Geographical Region: Central Idaho
Ownership: Idaho Dept. of Lands

Plot 1

Elevation: 4825' Aspect: 3° % Slope: 30-40%
Site position: Undulating slope running into ravine.
Habitat type: PSME/SPBE PIPO phase.
Soil characteristics: Silt loam derived from basalt; very rocky; moderately deep.
Range & wildlife impact: Light cattle use; light to moderate wildlife use.

Plot 2

Elevation: 4925' Aspect: 80° % Slope: 35-40%
Site position: Gently undulating slope.
Habitat type: PSME/SYAL PIPO phase.
Soil Characteristics: Rocky silt loam derived from basalt; depth variable.
Range & wildlife impact: Light cattle use; light to moderate wildlife use.

Plot 3

Elevation: 4850' Aspect: 96° % Slope: 35-45%
Site position: Gently undulating mid slope.
Habitat type: PSME/PHMA PIPO phase.
Soil characteristics: Rocky silt loam derived from basalt; shallow.
Range & wildlife impact: Light cattle use; light to moderate wildlife use.

Plot 4

Elevation: 4800' Aspect: 49° % Slope: 15-20%
Site position: Undulating and irregular slope below road.
Habitat type: ABGR/ACGL PHMA phase.
Soil characteristics: Very rocky and compacted soil derived from basalt; depth variable.
Range & wildlife impact: Moderate to heavy cattle use; light to moderate wildlife use.

Plot 5

Elevation: 4850' Aspect: 345° % Slope: 30-40%
Site position: Irregular slope above bench on east and slope on west.
Habitat type: PSME/PHMA PIPO phase.
Soil characteristics: Rocky silt loam derived from basalt; moderately deep.
Range & wildlife impact: Moderate.

Plot 6

Elevation: 4900' Aspect: 324° % Slope: 10%
Site position: Gentle slope at edge of grassland bench.
Habitat type: PSME/CAGE PIPO phase.
Soil characteristics: Very shallow and rocky silt loam derived from basalt.
Range & wildlife impact: Light to moderate.

Installation 223
Geographical Region: Central Idaho
Ownership: Idaho Dept. of Lands

Plot 1

Elevation: 4520' Aspect: 23° % Slope: 20-25%
Site position: Gentle, slightly undulating slope.
Habitat type: PSME/SYAL PIPO phase.
Soil characteristics: Rocky silt loam derived from basalt; depth variable.
Range & wildlife impact: Light.

Plot 2

Elevation: 4525' Aspect: 27° % Slope: 25-30%
Site position: Undulating mid slope.
Habitat type: PSME/PHMA PIPO phase.
Soil characteristics: Very rocky silt loam derived from basalt; depth variable.
Range & wildlife impact: Light.

Plot 3

Elevation: 4375' Aspect: 54° % Slope: 40%
Site position: Slightly undulating, moderately steep mid-slope.
Habitat type: ABGR/SPBE.
Soil characteristics: Shallow, rocky soil derived from basalt parent material.
Range & wildlife impact: Light to moderate cattle use; light wildlife use.

Plot 4

Elevation: 4365' Aspect: 58° % Slope: 35%
Site position: Slightly undulating, steep lower slope.
Habitat type: ABGR/SPBE.
Soil characteristics: Silt loam derived from basalt; rocky; moderately deep.
Range & wildlife impact: Light.

Plot 5

Elevation: 4450' Aspect: 28° % Slope: 35-40%
Site position: Steep slope narrowing on both sides to a draw at plot bottom.
Habitat type: ABGR/SPBE.
Soil characteristics: Rocky silt loam derived from basalt; shallow to moderately deep.
Range & wildlife impact: Light to moderate cattle use; light wildlife use.

Plot 6

Elevation: 4575' Aspect: 78° % Slope: 45%
Site position: Gently undulating slope.
Habitat type: PSME/SYAL PIPO phase.
Soil characteristics: Extremely rocky and shallow silt loam derived from basalt.
Range & wildlife impact: Light.

Installation 225
Geographical Region: Central Washington
Ownership: Boise Cascade Corporation

Plot 1

Elevation: 2300' Aspect: 315° % Slope: 0-5%
Site position: Flat to gently rolling plain.
Habitat type: PSME/FEOC CEPR phase.
Soil characteristics: Moderately deep silt loam derived from basalt.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 2

Elevation: 2300' Aspect: 312° % Slope: 0-5%
Site position: Flat to gently rolling basalt plain.
Habitat type: PSME/FEOC CEPR phase.
Soil characteristics: Deep, gravelly silt loam derived from basalt.
Range & wildlife impact: Little or no cattle use; light wildlife use.

Plot 3

Elevation: 2300' Aspect: - % Slope: 0%
Site position: Flat basalt plain.
Habitat type: PSME/FEOC BERE phase.
Soil characteristics: Deep, silt loam derived from basalt; some compaction at 8".
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 4

Elevation: 2300' Aspect: 131° % Slope: 5%
Site position: Mounded basalt flatland.
Habitat type: PSME/FEOC BERE phase.
Soil characteristics: Moderately deep, silt loam derived from basalt.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 5

Elevation: 2300' Aspect: - % Slope: 0-5%
Site position: Flat basalt plain.
Habitat type: PSME/FEOC BERE -> CEPR phase.
Soil characteristics: Deep, silt loam derived from basalt; compacted at 9".
Range & wildlife impact: Little or no cattle use; light wildlife use.

Plot 6

Elevation: 2300' Asepct: - % Slope: 0%
Site position: Flat basalt plain.
Habitat type: PSME/FEOC BERE -> CEPR phase.
Soil characteristics: Deep, silt loam derived from basalt; compacted at 10".
Range & wildlife impact: Little or none.

Installation 226
Geographical Region: Central Washington
Ownership: Boise Cascade Corporation

Plot 1

Elevation: 2870' Aspect: 308° % Slope: 18%
Site position: Undulating side slope of rounded ridge.
Habitat type: PSME/CARU PUTR phase.
Soil characteristics: Deep silt loam (ash?) over basalt bedrock.
Range & wildlife impact: Light cattle use; moderate wildlife use.

Plot 2

Elevation: 2880' Aspect: 259° % Slope: 10%
Site position: Rounded bench with variable slope and aspect.
Habitat type: PSME/CARU PUTR phase.
Soil characteristics: Deep silt loam (ash?) over basalt bedrock.
Range & wildlife impact: Light cattle use; moderate to heavy wildlife use.

Plot 3

Elevation: 2890' Aspect: 236° % Slope: 10%
Site position: Rounded knob along gradual ridge.
Habitat type: PSME/CARU PUTR phase.
Soil characteristics: Deep silt loam (ash?) over basalt bedrock; moderately compacted.
Range & wildlife impact: Light cattle use; moderate to heavy wildlife use.

Plot 4

Elevation: 2900' Aspect: 298° % Slope: 10%
Site position: Undulating slope.
Habitat type: PSME/CARU PUTR -> BERE phase.
Soil characteristics: Deep silt loam (ash?) over basalt bedrock.
Range & wildlife impact: Light cattle use; considerable wildlife use.

Plot 5

Elevation: 2900' Aspect: 297° % Slope: 10%
Site position: Gently sloping convex ridgetop.
Habitat type: PSME/CARU PUTR -> BERE phase.
Soil characteristics: Deep silt loam (ash?) over basalt bedrock.
Range & wildlife impact: Little cattle use; very heavy wildlife use.

Plot 6

Elevation: 2900' Aspect: 246° % Slope: 15%
Site position: Gently sloping rounded ridge.
Habitat type: PSME/CARU PUTR phase.
Soil characteristics: Deep silt loam (ash?) over basalt bedrock.
Range & wildlife impact: Moderate to heavy.

Installation 227
Geographical Region: Central Washington
Ownership: Boise Cascade Corporation

Plot 1

Elevation: 2550' Aspect: 41° % Slope: 30%
Site position: Undulating slope on side of valley.
Habitat type: PSME/SPBE CARU phase.
Soil characteristics: Shallow, rocky silt loam (some ash?) over basalt bedrock.
Range & wildlife impact: Light sheep use; light wildlife use.

Plot 2

Elevation: 2490' Aspect: 79° % Slope: 15-20%
Site position: Rounded knoll of varying slope and aspect on mid slope.
Habitat type: PSME/SPBE CARU phase.
Soil characteristics: Very shallow, rocky soil (ash?) over basalt bedrock.
Range & wildlife impact: Very light sheep use; light wildlife use.

Plot 3

Elevation: 2550' Aspect: 33° % Slope: 30-35%
Site position: Gently undulating mid-slope.
Habitat type: PSME/SPBE PIPO phase.
Soil characteristics: Shallow, rocky silt loam (ash?) over basalt bedrock.
Range & wildlife impact: Little grazing; light wildlife use.

Plot 4

Elevation: 2475' Aspect: 37° % Slope: 25-35%
Site position: Undulating slope above valley bottom.
Habitat type: PSME/SPBE CARU phase.
Soil characteristics: Moderately shallow silt loam (ash?) over basalt bedrock.
Range & wildlife impact: Little grazing; light wildlife use.

Plot 5

Elevation: 2485' Aspect: 29° % Slope: 50%
Site position: Undulating slope above valley bottom.
Habitat type: PSME/SPBE CARU phase.
Soil characteristics: Moderately shallow, rocky silt loam (ash?) over basalt bedrock.
Range & wildlife impact: Little grazing; light wildlife use.

Plot 6

Elevation: 2475' Aspect: 41° % Slope: 25-35%
Site position: Undulating mid slope above valley bottom.
Habitat type: PSME/SYAL PIPO phase.
Soil characteristics: Shallow, rocky silt loam (ash?) over basalt bedrock.
Range & wildlife impact: Little grazing; light wildlife use.

Installation 228
Geographical Region: Central Washington
Ownership: Washington Dept. of Natural Resources

Plot 1

Elevation: 2460' Aspect: 343° % Slope: 30-35%
Site position: Somewhat rounded mid slope (convex).
Habitat type: PSME/SYAL CARU phase.
Soil characteristics: Moderately shallow loam over glacial till.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 2

Elevation; 2525' Aspect: 323° % Slope: 5-15%
Site position: Gently sloping irregular bench.
Habitat type: PSME/SYAL PIPO phase.
Soil characteristics: Very rocky and shallow soil over glacial till.
Range & wildlife impact: Little cattle use; light wildlife use.

Plot 3

Elevation: 2515' Aspect: 6° % Slope: 20%
Site position: Rounded slope near bench.
Habitat type: PSME/SYAL PIPO phase.
Soil characteristics: Moderately shallow and very rocky loam over glacial till.
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Plot 4

Elevation: 2450' Aspect: 4° % Slope: 35-40%
Site position: Convex mid slope above road.
Habitat type: PSME/SYAL PIPO phase.
Soil characteristics: Shallow, rocky silt loam over glacial till.
Range & wildlife impact: Little cattle use; light wildlife use.

Plot 5

Elevation: 2465' Aspect: 340° % Slope: 45%
Site position: Concave slope next to rounded spur.
Habitat type: PSME/SPBE PIPO phase.
Soil characteristics: Moderately shallow to deep, rocky soil over glacial till.
Range & wildlife impact: Little cattle use; light wildlife use.

Plot 6

Elevation: 2450' Aspect: 331° % Slope: 15-20%
Site position: Crest of rounded spur.
Habitat type: PSME/SPBE SPBE phase.
Soil characteristics: Moderately deep, very rocky soil over glacial till.
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Installation 229
Geographical Region: Central Washington
Ownership: Boise Cascade Corporation

Plot 1

Elevation: 2610' Aspect: 50° % Slope: 10%
Site position: Gentle slope above bench.
Habitat type: PSME/CAGE PIPO phase -> ABGR series.
Soil characteristics: Silt loam (ash & loess) over basalt; depth variable.
Range & wildlife impact: Light cattle use; light to moderate wildlife use.

Plot 2

Elevation: 2620' Aspect: 50° % Slope: 10%
Site position: Undulating gentle slope above bench.
Habitat type: PSME/CAGE PIPO phase -> ABGR series.
Soil characteristics: Deep silt loam (ash & loess) over basalt; compacted at 15".
Range & wildlife impact: Light cattle use; light to moderate wildlife use.

Plot 3

Elevation: 2625' Aspect: 67° % Slope: 10-15%
Site position: Undulating slope above bench.
Habitat type: PSME/SPBE PIPO phase -> ABGR/SPBE
Soil characteristics: Moderately deep, compacted, silt loam (ash & loess) over basalt.
Range & wildlife impact: Light.

Plot 4

Elevation: 2625' Aspect: 45° % Slope: 10-15%
Site position: Gentle slope easing onto level bench.
Habitat type: PSME/SPBE PIPO phase -> ABGR/SPBE.
Soil characteristics: Moderately shallow to deep; compacted; basalt; ash & loess at surface.
Range & wildlife impact: Little or no cattle use; light wildlife use.

Plot 5

Elevation: 2640' Aspect: 54° % Slope: 15%
Site position: Undulating slope above and into bench below.
Habitat type: PSME/SPBE PIPO phase -> ABGR/SPBE.
Soil characteristics: Moderately deep, compacted silt loam (ash & loess) over basalt.
Range & wildlife impact: Little or no cattle use; light wildlife use.

Plot 6

Elevation: 2650' Aspect: 46° % Slope: 15-20%
Site position: Undulating toeslope onto a bench.
Habitat type: PSME/SPBE SPBE phase -> ABGR/SPBE.
Soil characteristics: Moderately deep, very compacted silt loam (ash & loess) over basalt.
Range & wildlife impact: Little cattle use; light wildlife use.

Installation 230
Geographical Region: Central Washington
Ownership: Boise Cascade Corporation

Plot 1

Elevation: 2920' Aspect: 280° % Slope: 15%
Site position: Convex ridge near bottom of gentle slope.
Habitat type: ABGR/LIBO LIBO phase.
Soil characteristics: Deep, compacted soil derived from ash & loess over glacial till.
Range & wildlife impact: Light wildlife use.

Plot 2

Elevation: 2920' Aspect: 262° % Slope: 10%
Site position: Convex lower slope, leveling at bottom of plot.
Habitat type: ABGR/CLUN
Soil characteristics: Deep, compacted soil derived from ash & loess over glacial till.
Range & wildlife impact: Little or no grazing; light wildlife use.

Plot 3

Elevation: 2920' Aspect: 240° % Slope: 10%
Site position: Convex lower slope; steeper above.
Habitat type: ABGR/LIBO ACCI phase.
Soil characteristics: Deep, sandy soil with compaction below 8"; ash/loess over till.
Range & wildlife impact: Little or no grazing; light wildlife use.

Plot 4

Elevation: 2925' Aspect: 254° % Slope: 20-30%
Site position: Lower slope, leveling at bottom of plot.
Habitat type: ABGR/LIBO ACCI phase.
Soil characteristics: Moderately shallow to deep ash/loess soil over glacial till; compacted.
Range & wildlife impact: Light wildlife use.

Plot 5

Elevation: 2915' Aspect: 182° % Slope: 5-10%
Site position: Slightly sloping to flat bottom or bench.
Habitat type: ABGR/LIBO ACCI phase.
Soil characteristics: Deep ash/loess soil over glacial till; much compaction.
Range & wildlife impact: Little or no grazing; light wildlife use.

Plot 6

Elevation: 2910' Aspect: 222° % Slope: 5%
Site position: Rounded, nearly flat knoll at bottom of slope.
Habitat type: ABGR/ACCI
Soil characteristics: Moderately deep ash/loess soil over glacial till; compacted.
Range & wildlife impact: Little or no grazing; light wildlife use.

Installation 231
Geographical Region: Montana
Ownership: Flathead Indian Reservation (BIA)

Plot 1

Elevation: 3425' Aspect: 349° % Slope: 35-40%
Site position: Slope with shallow ravine, steeper at top of plot.
Habitat type: PSME/CARU PIPO phase.
Soil characteristics: Shallow, extremely rocky soil derived from glacial till.
Range & wildlife impact: Moderate cattle use; light wildlife use.

Plot 2

Elevation: 3450' Aspect: 356° % Slope: 30-40%
Site position: Uniform mid slope.
Habitat type: PSME/SYAL SYAL phase.
Soil characteristics: Shallow, extremely rocky soil derived from glacial till.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 3

Elevation: 3400' Aspect: 358° % Slope: 35-40%
Site position: Undulating mid slope.
Habitat type: PSME/SPBE.
Soil characteristics: Moderately shallow, rocky soil derived from glacial till.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 4

Elevation: 3375' Aspect: 28° % Slope: 25%
Site position: Sloping--lower part of plot steeper.
Habitat type: PSME/SPBE.
Soil characteristics: Shallow, extremely rocky soil derived from glacial till.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 5

Elevation: 3400' Aspect: 360° % Slope: 15-30%
Site position: Upper half--convex bench; lower part--steepening slope.
Habitat type: PSME/SPBE.
Soil characteristics: Moderately shallow, extremely rocky glacial till soil.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 6

Elevation: 3425' Aspect: 355° % Slope: 5-30%
Site position: Lower half--flattening bench; upper half--sloping.
Habitat type: PSME/CARU PIPO phase.
Soil characteristics: Shallow, very rocky soil derived from glacial till.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Installation 232
Geographical Region: Montana
Ownership: Flathead Indian Reservation (BIA)

Plot 1

Elevation: 3500' Aspect: 297° % Slope: 10-15%
Site position: Undulating, uneven slope.
Habitat type: PSME/SYAL SYAL phase.
Soil characteristics: Shallow, very rocky glacial till soil.
Range & wildlife impact: Light to moderate cattle use; moderate wildlife use.

Plot 2

Elevation: 3510' Aspect: 320° % Slope: 10%
Site position: Slightly undulating gentle slope.
Habitat type: PSME/SYAL SYAL phase.
Soil characteristics: Shallow, very rocky glacial till soil.
Range & wildlife impact: Moderate to heavy cattle use; moderate wildlife use.

Plot 3

Elevation: 3500' Aspect: 326° % Slope: 10-15%
Site position: Undulating gentle slope.
Habitat type: PSME/SYAL SYAL phase.
Soil characteristics: Shallow, extremely rocky glacial till soil.
Range & wildlife impact: Moderate to heavy cattle use; moderate wildlife use.

Plot 4

Elevation: 3510' Aspect: 335° % Slope: 13-17%
Site position: Undulating gentle slope.
Habitat type: PSME/SYAL SYAL phase.
Soil characteristics: Moderately shallow, extremely rocky glacial till soil.
Range & wildlife impact: Moderate to heavy cattle use; light to moderate wildlife use.

Plot 5

Elevation: 3490' Aspect: 339° % Slope: 10-15%
Site position: Undulating slope on benchtop.
Habitat type: PSME/SYAL SYAL phase.
Soil characteristics: Shallow, very rocky glacial till soil.
Range & wildlife impact: Moderate to heavy cattle use; moderate wildlife use.

Plot 6

Elevation: 3490' Aspect: 0° % Slope: 20-25%
Site position: Undulating slope with numerous hummocks.
Habitat type: PSME/SYAL CARU phase.
Soil characteristics: Shallow to moderately shallow, very rocky glacial till soil.
Range & wildlife impact: Moderate to heavy cattle use; light to moderate wildlife use.

Installation 233
Geographical Region: Montana
Ownership: Flathead Indian Reservation (BIA)

Plot 1

Elevation: 3300' Aspect: 296° % Slope: 15-25%
Site position: Upper slope beneath bench.
Habitat type: PSME/PHMA PHMA phase.
Soil characteristics: Moderately shallow; very rocky; mixture of sediments and glacial till.
Range & wildlife impact: Light wildlife use.

Plot 2

Elevation: 3300' Aspect: 244° % Slope: 10-15%
Site position: Somewhat undulating, gently sloping bench.
Habitat type: PSME/PHMA PHMA phase.
Soil characteristics: Moderately shallow to deep; extremely rocky; sediments and glacial till.
Range & wildlife impact: Light wildlife use.

Plot 3

Elevation: 3300' Aspect: 282° % Slope: 5-10%
Site position: Gently sloping bench.
Habitat type: PSME/SYAL CARU phase.
Soil characteristics: Shallow, extremely rocky soil derived from lake sediments and glacial till.
Range & wildlife impact: Light wildlife use.

Plot 4

Elevation: 3250' Aspect: 276° % Slope: 15-20%
Site position: Lower slope and start of bench.
Habitat type: PSME/PHMA CARU phase.
Soil characteristics: Moderately deep, compacted, rocky soil derived from lake sediments and till.
Range & wildlife impact: Light wildlife use.

Plot 5

Elevation: 3400' Aspect: 264° % Slope: 10%
Site position: Gently sloping bench.
Habitat type: PSME/PHMA PHMA phase.
Soil characteristics: Moderately shallow, very rocky and compacted soil; lake sediments and till.
Range & wildlife impact: Light wildlife use.

Plot 6

Elevation: 3350' Aspect: 288° % Slope: 20-30%
Site position: Undulating slope.
Habitat type: PSME/SYAL CARU phase.
Soil characteristics: Moderately shallow, very rocky soil derived from lake sediments and till.
Range & wildlife impact: Light wildlife use.

Installation 234
Geographical Region: Montana
Ownership: Flathead Indian Reservation (BIA)

Plot 1

Elevation: 3200' Aspect: 254° % Slope: 0-5%
Site position: Gently undulating valley floor.
Habitat type: PSME/SYAL SYAL phase.
Soil characteristics: Shallow, extremely rocky soil derived from glacial till and lake sediments.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 2

Elevation: 3200' Aspect: 257° % Slope: 5-10%
Site position: Undulating gentle slope on valley floor.
Habitat type: PSME/SYAL SYAL phase.
Soil characteristics: Shallow, extremely rocky soil derived from glacial deposits and sediments.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 3

Elevation: 3200' Aspect: 251° % Slope: 0-10%
Site position: Undulating gentle slope on valley floor.
Habitat type: PSME/PHMA PHMA phase.
Soil characteristics: Shallow, extremely rocky soil derived from glacial deposits and sediments.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 4

Elevation; 3200' Aspect: 251° % Slope: 5-10%
Site position: Nearly flat to very gently sloping.
Habitat type: PSME/LIBO SYAL phase.
Soil characteristics: Shallow, very rocky soil derived from glacial deposits and sediments.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 5

Elevation: 3200' Aspect: - % Slope: 0%
Site position: Nearly flat with slight undulations.
Habitat type: PSME/LIBO SYAL phase.
Soil characteristics: Shallow, very rocky soil derived from glacial deposits and sediments.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 6

Elevation: 3200' Aspect: 251° % Slope: 5-10%
Site position: Gentle slope on valley floor.
Habitat type: PSME/LIBO SYAL phase.
Soil characteristics: Shallow, very rocky soil derived from glacial deposits and sediments.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Ecological Summary

Installation 235
Geographical Region: Montana
Ownership: Champion Timberlands

Plot 1

Elevation: 3350' Aspect: 329° % Slope: 10-15%
Site position: Uniform slope.
Habitat type: PSME/PHMA CARU phase.
Soil characteristics: Shallow, silty soil derived from valley fill sediments; rocky.
Range & wildlife impact: Moderate wildlife use.

Plot 2

Elevation: 3345' Aspect: 295° % Slope: 10-15%
Site position: Convex slope with drainage on west side of plot.
Habitat type: PSME/PHMA CARU phase.
Soil characteristics: Shallow, rocky, silty soil derived from valley fill sediments.
Range & wildlife impact: Little or no cattle use; moderate wildlife use.

Plot 3

Elevation: 3330' Aspect: 341° % Slope: 10-15%
Site position: Uniform slope.
Habitat type: PSME/PHMA CARU phase.
Soil characteristics: Shallow, very rocky silty soil derived from valley fill sediments.
Range & wildlife impact: Little or no cattle use; moderate wildlife use.

Plot 4

Elevation: 3355' Aspect: 316° % Slope: 10-15%
Site position: Convex slope.
Habitat type: PSME/PHMA CARU phase.
Soil characteristics: Moderately shallow, very rocky soil derived from valley fill sediments.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 5

Elevation: 3370' Aspect: 304° % Slope: 15%
Site position: Uniform slope.
Habitat type: PSME/PHMA PHMA phase.
Soil characteristics: Moderately shallow, very rocky soil derived from valley fill sediments.
Range & wildlife impact: Little or no cattle use; moderate wildlife use.

Plot 6

Elevation: 3400' Aspect: 306° % Slope: 20%
Site position: Somewhat concave, uniform slope.
Habitat type: PSME/PHMA PHMA phase.
Soil characteristics: Shallow, extremely rocky silt loam derived from valley fill sediments.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Installation 236
Geographical Region: Montana
Ownership: Champion Timberlands

Plot 1

Elevation: 3480' Aspect: 20° % Slope: 25%
Site position: Fairly uniform slope.
Habitat type: PSME/CARU CARU phase.
Soil characteristics: Shallow, extremely rocky soil derived from valley fill sediments.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 2

Elevation: 3480' Aspect: 5° % Slope: 25-30%
Site position: Somewhat convex, undulating slope.
Habitat type: PSME/PHMA PHMA phase.
Soil characteristics: Very shallow, extremely rocky soil derived from valley fill sediments.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 3

Elevation: 3425' Aspect: 353° % Slope: 35-40%
Site position: Gently undulating slope.
Habitat type: PSME/PHMA PHMA phase.
Soil characteristics: Very shallow and rocky soil derived from valley fill sediments.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 4

Elevation: 3480' Aspect: 352° % Slope: 40%
Site position: Uniform to gently undulating slope.
Habitat type: PSME/PHMA CARU phase → PSME/CARU CARU phase.
Soil characteristics: Very shallow, extremely rocky soil derived from valley fill sediments.
Range & wildlife impact: Little or no cattle use; light wildlife use.

Plot 5

Elevation: 3425' Aspect: 341° % Slope: 45%
Site position: Slightly undulating slope.
Habitat type: PSME/PHMA PHMA phase.
Soil characteristics: Very shallow, extremely rocky soil derived from valley fill sediments.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 6

Elevation: 3425' Aspect: 347° % Slope: 40%
Site position: Undulating slope.
Habitat type: PSME/PHMA PHMA phase.
Soil characteristics: Very shallow, extremely rocky soil derived from valley fill sediments.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Installation 237
Geographical Region: Montana
Ownership: Champion Timberlands

Plot 1

Elevation: 4500' Aspect: - % Slope: 0%
Site position: Flat bench at base of slope.
Habitat type: PSME/VACA.
Soil characteristics: Shallow, extremely rocky glacial till soil.
Range & wildlife impact: Light to moderate cattle use; moderate wildlife use.

Plot 2

Elevation: 4500' Aspect: - % Slope: 0%
Site position: Large flat bench below slope.
Habitat type: PSME/CAGE
Soil characteristics: Shallow to moderately shallow, extremely rocky glacial till soil.
Range & wildlife impact: Light to moderate grazing; moderate wildlife use.

Plot 3

Elevation: 4500' Aspect: - % Slope: 0%
Site position: Flat bench near base of slope.
Habitat type: PSME/CAGE.
Soil characteristics: Shallow, compacted, and extremely rocky glacial till soil.
Range & wildlife impact: Light to moderate cattle use; moderate wildlife use.

Plot 4

Elevation: 4500' Aspect: variable % Slope: 0-4%
Site position: Slightly depressional near base of slope.
Habitat type: PSME/LIBO CARU phase.
Soil characteristics: Shallow, extremely rocky glacial till soil.
Range & wildlife impact: Light to moderate cattle use; moderate wildlife use.

Plot 5

Elevation: 4500' Aspect: variable % Slope: 0-5%
Site position: Flat broad bench near base of slope.
Habitat type: PSME/LIBO SYAL phase.
Soil characteristics: Shallow, extremely rocky glacial till soil.
Range & wildlife impact: Light to moderate cattle use; moderate to heavy wildlife use.

Plot 6

Elevation: 4500' Aspect: variable % Slope: 5-20%
Site position: Irregular knoll at edge of flat bench.
Habitat type: PSME/CARU PIPO phase.
Soil characteristics: Shallow, extremely rocky glacial till soil.
Range & wildlife impact: Light to moderate cattle use; moderate wildlife use.

Ecological Summary

Installation 238
Geographical Region: Montana
Ownership: Champion Timberlands

Plot 1

Elevation: 3660' Aspect: 321° % Slope: 50-55%
Site position: Undulating steep slope.
Habitat type: ABGR/CLUN CLUN phase.
Soil characteristics: Shallow, extremely rocky soil developed from valley fill sediments.
Range & wildlife impact: Light cattle use; light to moderate wildlife use.

Plot 2

Elevation: 3700' Aspect: 328° % Slope: 45-55%
Site position: Undulating steep slope.
Habitat type: ABGR/CLUN CLUN phase.
Soil characteristics: Shallow, extremely rocky soil derived from valley fill sediments.
Range & wildlife impact: Light to moderate.

Plot 3

Elevation: 3625' Aspect: 334° % Slope: 35-45%
Site position: Undulating lower slope.
Habitat type: ABGR/CLUN CLUN phase.
Soil characteristics: Shallow, extremely rocky soil derived from valley fill sediments.
Range & wildlife impact: Light to moderate.

Plot 4

Elevation: 3640' Aspect: 329° % Slope: 60-70%
Site position: Undulating very steep slope.
Habitat type: PSME/CARU PIPO phase.
Soil characteristics: Shallow, extremely rocky soil derived from valley fill sediments.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 5

Elevation: 3650' Aspect: 286° % Slope: 55-60%
Site position: Undulating steep slope.
Habitat type: PSME/LIBO CARU phase.
Soil characteristics: Shallow, extremely rocky soil derived from valley fill sediments.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 6

Elevation: 3675' Aspect: 280° % Slope: 45-55%
Site position: Undulating steep slope.
Habitat type: PSME/SYAL CARU phase.
Soil characteristics: Shallow, extremely rocky soil derived from valley fill sediments.
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Installation 239
Geographical Region: North Idaho
Ownership: Potlatch Corp.

Plot 1

Elevation: 3625' Aspect: 309° % Slope: 51%
Site position: Moderately steep slope.
Habitat type: PSME/SYAL.
Soil characteristics: Moderately shallow soil derived from basalt; very rocky.
Range & wildlife impact: Little grazing.

Plot 2

Elevation: 3675' Aspect: 320° % Slope: 52%
Site position: Moderately steep slope.
Habitat type: PSME/SYAL.
Soil characteristics: Very shallow and rocky soil derived from basalt.

Plot 3

Elevation: 3600' Aspect: 314° % Slope: 46%
Site position: Moderately steep mid slope.
Habitat type: PSME/PHMA CAGE phase.
Soil characteristics: Moderately shallow and very rocky soil derived from basalt.
Range & wildlife impact: Little or no grazing.

Plot 4

Elevation: 3600' Aspect: 325° % Slope: 49%
Site position: Moderately steep slope near ridgeline.
Habitat type: PSME/PHMA CAGE phase.
Soil characteristics: Moderately shallow and very rocky soil derived from basalt.
Range & wildlife impact: Light or no cattle use.

Plot 5

Elevation: 3575' Aspect: 280° % Slope: 34%
Site position: Moderate mid slope.
Habitat type: PSME/SYAL.
Soil characteristics: Shallow and very rocky soil derived from basalt.
Range & wildlife impact: Little grazing.

Plot 6

Elevation: 3575' Aspect: 291° % Slope: 51%
Site position: Moderately steep slope.
Habitat type: PSME/PHMA CAGE phase.
Soil characteristics: Shallow and very rocky soil derived from basalt.
Range & wildlife impact: Little grazing.

Installation 240
Geographical Region: North Idaho
Ownership: Potlatch Corp.

Plot 1

Elevation: 3450' Aspect: 257° % Slope: 25-30%
Site position: Rounded ridge near bottom.
Habitat type: ABGR/CLUN CLUN phase.
Soil characteristics: Deep ash soil over micaceous metasediments.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 2

Elevation: 3455' Aspect: 263° % Slope: 30-35%
Site position: Rounded ridgetop, sloping and dissected.
Habitat type: ABGR/CLUN ASCA phase.
Soil characteristics: Deep ash soil over micaceous metasediments.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 3

Elevation: 3475' Aspect: 213° % Slope: 30-35%
Site position: Somewhat rounded mid slope.
Habitat type: ABGR/CLUN CLUN phase.
Soil characteristics: Deep ash soil over micaceous metasediments.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 4

Elevation: 3500' Aspect: 215° % Slope: 0-10%
Site position: On rounded ridgetop, sloping away beyond plot edges.
Habitat type: ABGR/LIBO.
Soil characteristics: Deep ash soil over micaceous metasediments.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 5

Elevation: 3510' Aspect: 55° % Slope: 0-10%
Site position: Gently sloping, rounded ridgetop.
Habitat type: ABGR/CLUN ASCA phase.
Soil characteristics: Deep ash soil over micaceous metasediments.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Plot 6

Elevation: 3500' Aspect: 20° % Slope: 5-10%
Site position: Undulating, rounded ridgetop.
Habitat type: ABGR/CLUN ASCA phase.
Soil characteristics: Deep ash soil over micaceous metasediments.
Range & wildlife impact: Little or no cattle use; light to moderate wildlife use.

Installation 241
Geographical Region: Central Washington
Ownership: Washington Dept. of Natural Resources

Plot 1

Elevation: 3225' Aspect: 65° % Slope: 5-10%
Site position: Very gently undulating benchtop.
Habitat type: PSME/CARU PIPO phase.
Soil characteristics: Moderately deep ash over granitic glacial till or out wash.
Range & wildlife impact: Moderate to heavy cattle use; light to moderate wildlife use.

Plot 2

Elevation: 3250' Aspect: 353° % Slope: 5-10%
Site position: Undulating benchtop.
Habitat type: PSME/CARU PIPO phase.
Soil characteristics: Deep ash soil over granitic glacial till or out wash.
Range & wildlife impact: Moderate cattle use; light to moderate wildlife use.

Plot 3

Elevation: 3235' Aspect: 46° % Slope: 5-10%
Site position: Undulating benchtop.
Habitat type: PSME/VACCI.
Soil characteristics: Deep ash soil over granitic glacial till or out wash.
Range & wildlife impact: Light to moderate cattle use; light to moderate wildlife use.

Plot 4

Elevation: 3250' Aspect: 40° % Slope: 5-15%
Site position: Edge of benchtop, gently sloping into a shallow ravine.
Habitat type: PSME/VACCI.
Soil characteristics: Deep ash soil over granitic glacial till or out wash.
Range & wildlife impact: Moderate cattle use; light to moderate wildlife use.

Plot 5

Elevation: 3245' Aspect: variable % Slope: 0-5%
Site position: Undulating benchtop with minor drainage passing through plot.
Habitat type: PSME/VACCI.
Soil characteristics: Deep ash soil over granitic glacial till or out wash.
Range & wildlife impact: Moderate cattle use; light to moderate wildlife use.

Plot 6

Elevation: 3260' Aspect: variable % Slope: 0-5%
Site position: Undulating benchtop.
Habitat type: PSME/VACCI.
Soil characteristics: Deep ash soil over granitic glacial till or out wash.
Range & wildlife impact: Moderate cattle use; light to moderate wildlife use.

Installation 242
Geographical Region: Central Washington
Ownership: Washington Dept. of Natural Resources

Plot 1

Elevation: 4310' Aspect: 279° % Slope: 20%
Site position: Convex slope, levelling slightly at bottom.
Habitat type: PSME/CARU.
Soil characteristics: Shallow, rocky soil derived from volcanic ash and glacial till.
Range & wildlife impact: Moderate to heavy grazing; light to moderate wildlife use.

Plot 2

Elevation: 4325' Aspect: 263° % Slope: 15-20%
Site position: Undulating slope.
Habitat type: PSME/CARU.
Soil characteristics: Moderately deep, rocky soil derived from ash and glacial out wash and till.
Range & wildlife impact: Heavy cattle use; light to moderate wildlife use.

Plot 3

Elevation: 4350' Aspect: 312° % Slope: 15%
Site position: Convex mid slope.
Habitat type: PSME/CARU.
Soil characteristics: Moderately shallow, rocky soil derived from ash over glacial out wash and till.
Range & wildlife impact: Moderate to heavy cattle use; light to moderate wildlife use.

Plot 4

Elevation: 4325' Aspect: 262° % Slope: 20%
Site position: Convex to uniform slope.
Habitat type: PSME/CARU.
Soil characteristics: Moderately shallow, rocky soil derived from ash over glacial out wash and till.
Range & wildlife impact: Heavy cattle use; moderate wildlife use.

Plot 5

Elevation: 4375' Aspect: 262° % Slope: 20%
Site position: Somewhat concave mid slope.
Habitat type: PSME/CARU.
Soil characteristics: Shallow, rocky soil derived from ash over glacial out wash and till.
Range & wildlife impact: Heavy cattle use; light wildlife use.

Plot 6

Elevation: 4425' Aspect: 273° % Slope: 20%
Site position: Slope.
Habitat type: PSME/VACCI.
Soil characteristics: Moderately shallow, rocky soil derived from ash over glacial out wash and till.
Range & wildlife impact: Heavy cattle use; little wildlife use.

Installation 243
Geographical Region: N. E. Washington
Ownership: Washington Dept. of Natural Resources

Plot 1

Elevation: 3460' Aspect: 321° % Slope: 20%
Site position: Gently undulating uniform slope.
Habitat type: PSME/PHMA PHMA phase - ABGR/LIBO.
Soil characteristics: Moderately deep ash/loess soil over glacial till; rocky.
Range & wildlife impact: Little cattle use; light wildlife use.

Plot 2

Elevation: 3460' Aspect: 306° % Slope: 20%
Site position: Gently undulating slope.
Habitat type: PSME/PHMA CARU phase.
Soil characteristics: Moderately deep and rocky ash/loess soil over glacial till.
Range & wildlife impact: Little cattle use; light wildlife use.

Plot 3

Elevation: 3525' Aspect: 320° % Slope: 5-15%
Site position: Small, rounded benchtop on hillside.
Habitat type: PSME/PHMA CARU phase.
Soil characteristics: Moderately deep and rocky ash/loess soil over glacial till.
Range & wildlife impact: Light.

Plot 4

Elevation: 3500' Aspect: 300° % Slope: 15-20%
Site position: Undulating slope.
Habitat type: PSME/PHMA CAGE phase.
Soil characteristics: Moderately shallow and rocky ash soil over glacial till.

Plot 5

Elevation: 3525' Aspect: 296° % Slope: 20-25%
Site position: Rounded spur. with two aspects.
Habitat type: PSME/CARU.
Soil characteristics: Moderately deep, rocky ash soil over glacial till.
Range & wildlife impact: Little cattle use; light wildlife use.

Plot 6

Elevation: 3500' Aspect: 346° % Slope: 15-20%
Site position: Undulating mid slope.
Habitat type: PSME/PHMA PHMA phase.
Soil characteristics: Shallow, ash soil over glacial till; rocky.
Range & wildlife impact: Little cattle use; light to moderate wildlife use.

Installation 244
Geographical Region: N. E. Oregon
Ownership: Bureau of Land Management

Plot 1

Elevation: 5950' Aspect: 285° % Slope: 30%
Site position: Gently undulating slope.
Habitat type: PSME/OSCH.
Soil characteristics: Very deep, rocky soil over granite bedrock.
Range & wildlife impact: Moderate to heavy cattle use; light to moderate wildlife use.

Plot 2

Elevation: 5865' Aspect: 294° % Slope: 30-35%
Site position: Undulating slope.
Habitat type: PSME/OSCH.
Soil characteristics: Deep, rocky soil over granite and/or basalt bedrock.
Range & wildlife impact: Moderate to heavy cattle use; moderate wildlife use.

Plot 3

Elevation: 5850' Aspect: 319° % Slope: 30-40%
Site position: Steep lower slope above small stream. in narrowing ravine.
Habitat type: PSME/ACGL.
Soil characteristics: Deep, gravelly soil over basalt and/or granite bedrock.
Range & wildlife impact: Moderate to heavy cattle use; moderate wildlife use.

Plot 4

Elevation: 5870' Aspect: 271° % Slope: 30-35%
Site position: Sloping benchtop below road.
Habitat type: PSME/OSCH.
Soil characteristics: Very deep, gravelly soil over basalt and/or granite bedrock.
Range & wildlife impact: Moderate to heavy cattle use; moderate wildlife use.

Plot 5

Elevation: 5875' Aspect: 306° % Slope: 45-50%
Site position: Undulating steep slope.
Habitat type: PSME/OSCH.
Soil characteristics: Moderately deep, gravelly soil over granite bedrock.
Range & wildlife impact: Moderate to heavy cattle use; moderate wildlife use.

Plot 6

Elevation: 5925' Aspect: 302° % Slope: 45-50%
Site position: Uniform, moderately steep slope.
Habitat type: PSME/OSCH.
Soil characteristics: Deep, gravelly soil over granite bedrock.
Range & wildlife impact: Moderate to heavy cattle use; moderate wildlife use.

Installation 245
Geographical Region: N. E. Oregon
Ownership: Bureau of Land Management

Plot 1

Elevation: 4970' Aspect: 62° % Slope: 25%
Site position: Undulating slope above intermittant creek bed.
Habitat type: PSME/ACGL SYOR phase? (very disturbed site)
Soil characteristics: Moderately deep, very rocky soil derived from basalt.
Range & wildlife impact: Heavy cattle use; light wildlife use.

Plot 2

Elevation: 4990' Aspect: 25° % Slope: 10-15%
Site position: Gently sloping, uneven bench.
Habitat type: PSME/SYOR? (very disturbed site)
Soil characteristics: Moderately shallow, rocky soil derived from basalt.
Range & wildlife impact: Heavy cattle use; light wildlife use.

Plot 3

Elevation: 5010' Aspect: 32° % Slope: 15-20%
Site position: Gently undulating slope above road.
Habitat type: PSME/SYOR? (very disturbed site)
Soil characteristics: Shallow, very rocky silt loam derived from basalt.
Range & wildlife impact: Heavy cattle use; light wildlife use.

Plot 4

Elevation: 5015' Aspect: 108° % Slope: 25-30%
Site position: Gently undulating slope.
Habitat type: PSME/BERE BERE phase.
Soil characteristics: Shallow to moderately shallow, very rocky soil derived from basalt.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 5

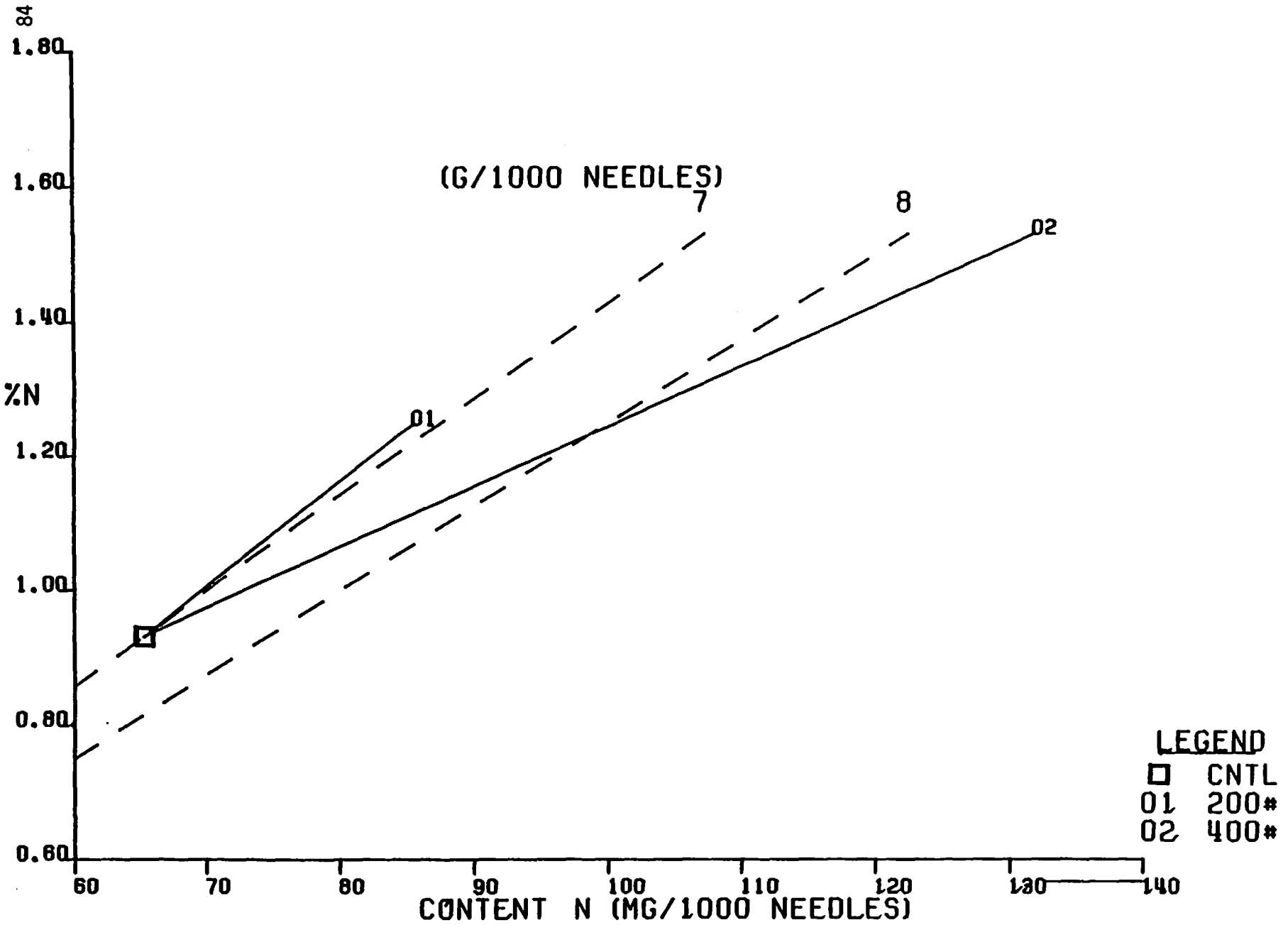
Elevation: 5030' Aspect: 77° % Slope: 20-30%
Site position: Undulating slope below hill/ridge top.
Habitat type: PSME/BERE BERE phase.
Soil characteristics: Shallow to moderately shallow, very rocky soil derived from basalt.
Range & wildlife impact: Moderate to heavy cattle use; light wildlife use.

Plot 6

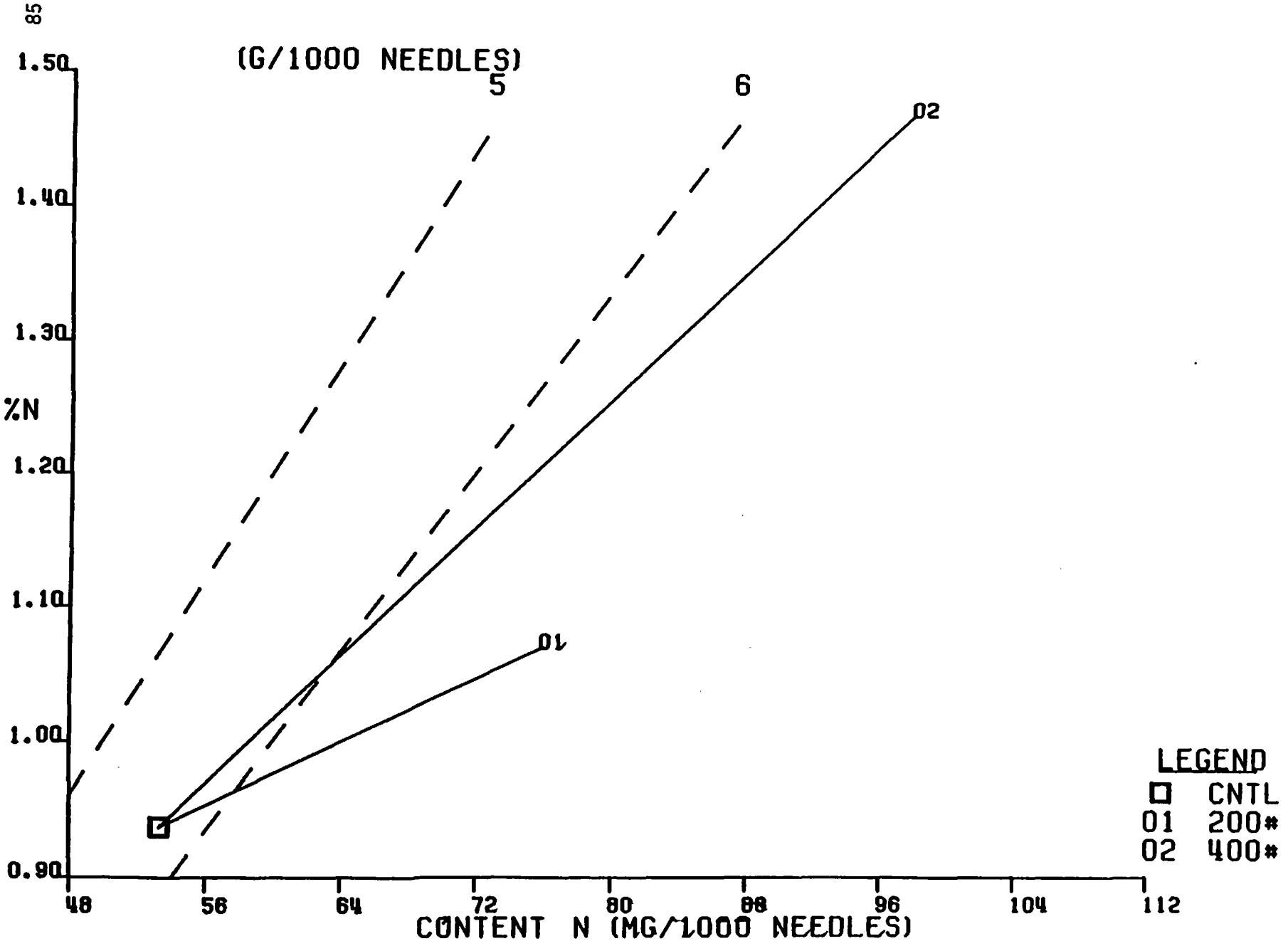
Elevation: 4980' Aspect: 45° % Slope: 20%
Site position: Gently undulating slope above intermittant creek bed.
Habitat type: PSME/SYOR? (very disturbed site)
Soil characteristics: Shallow to moderately deep, very rocky soil derived from basalt.
Range & wildlife impact: Heavy cattle use; light wildlife use.

Nitrogen/needle weight graphs for the 1981 installations.

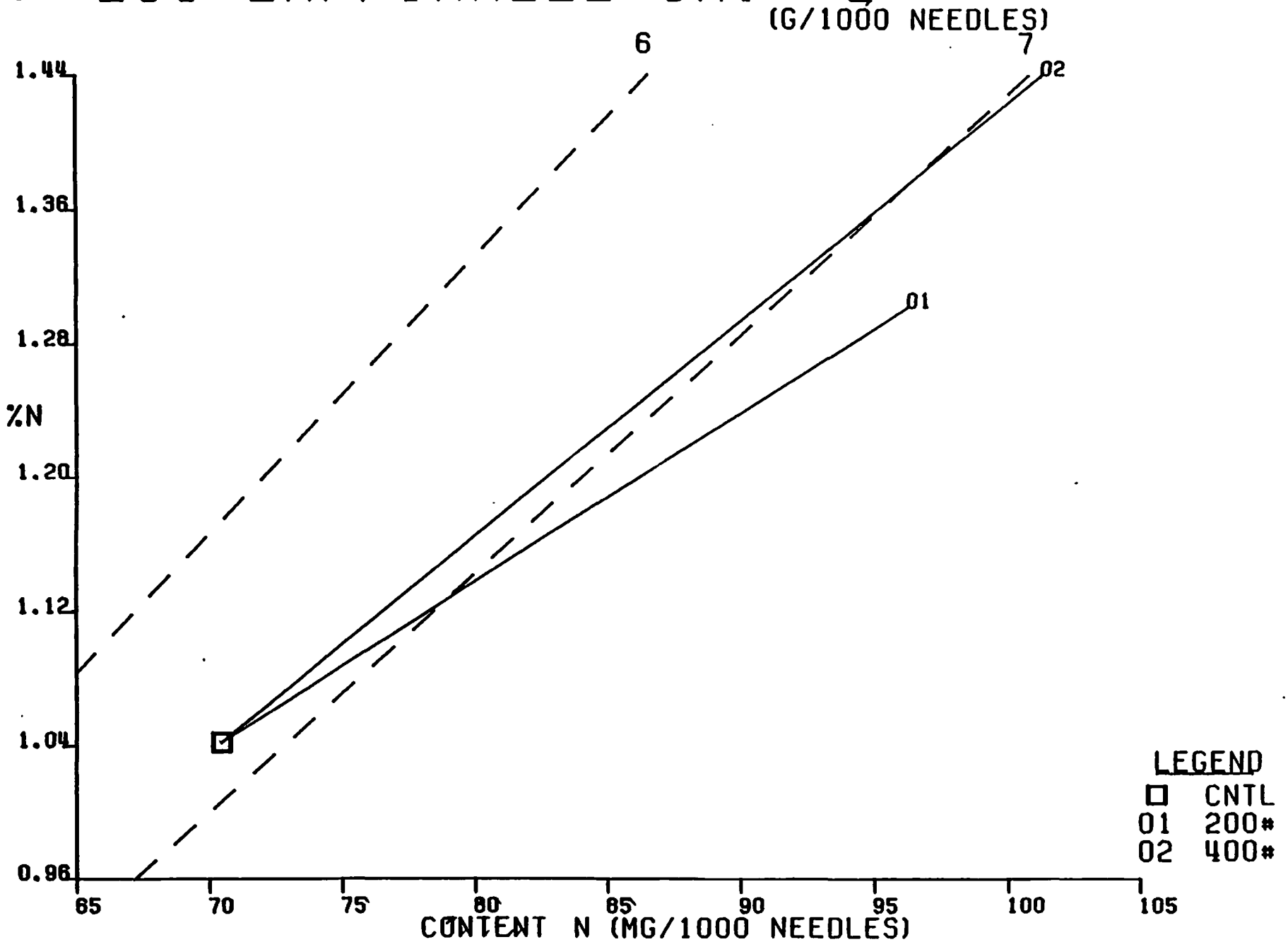
201 LAFFINWELL CR. #1



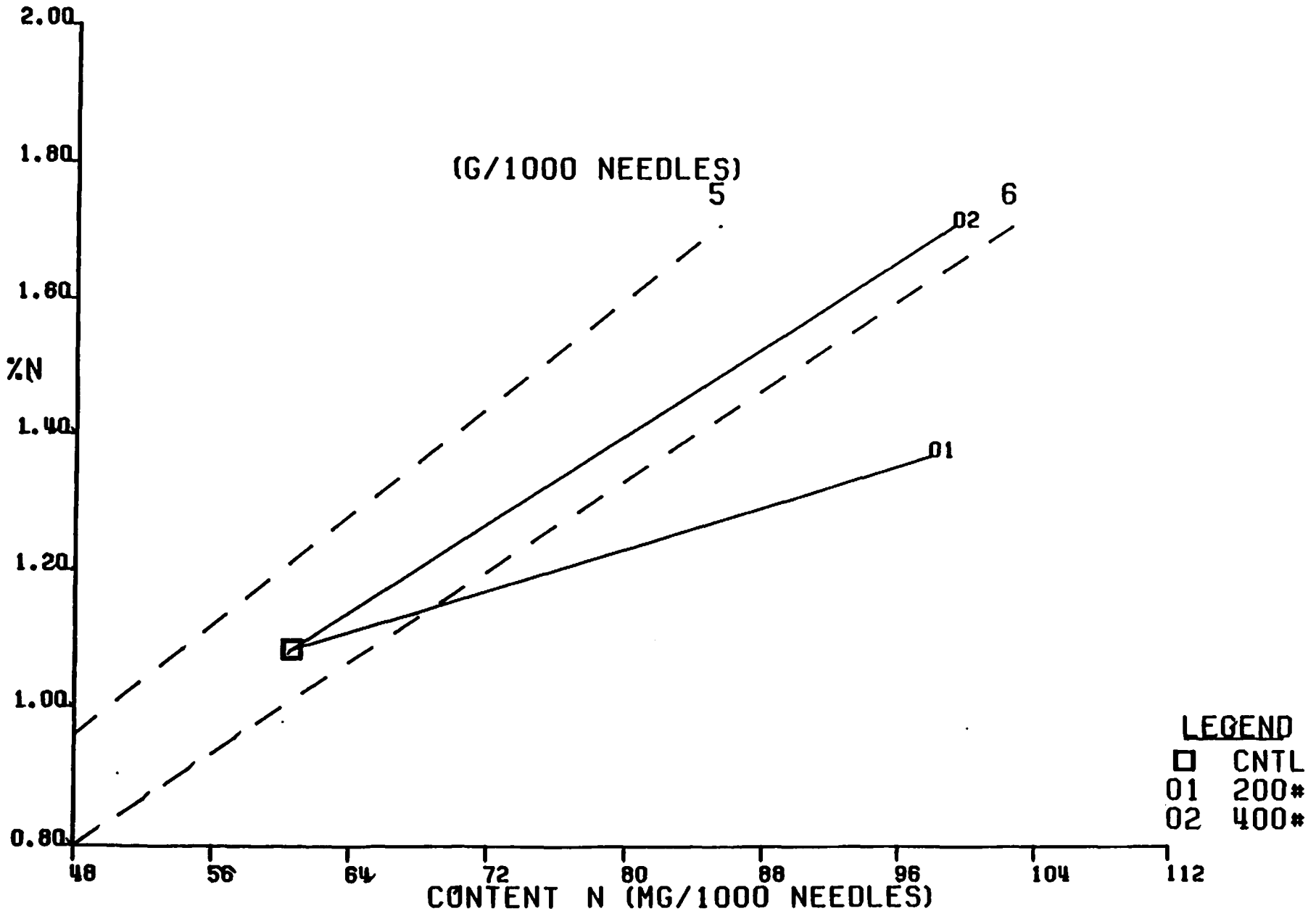
202 HØRSETHIEF BASIN



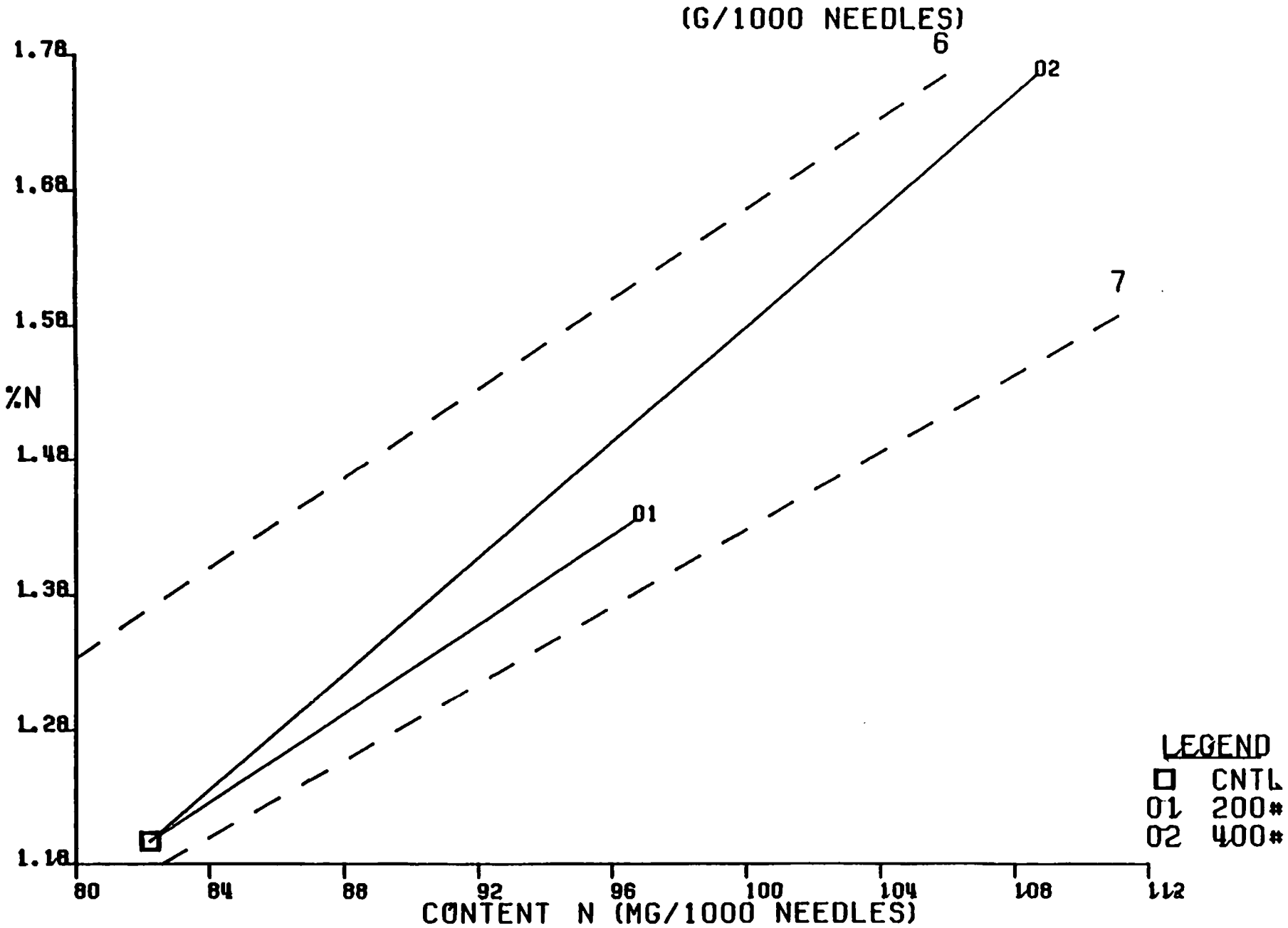
203 LAFFINWELL CR. #2



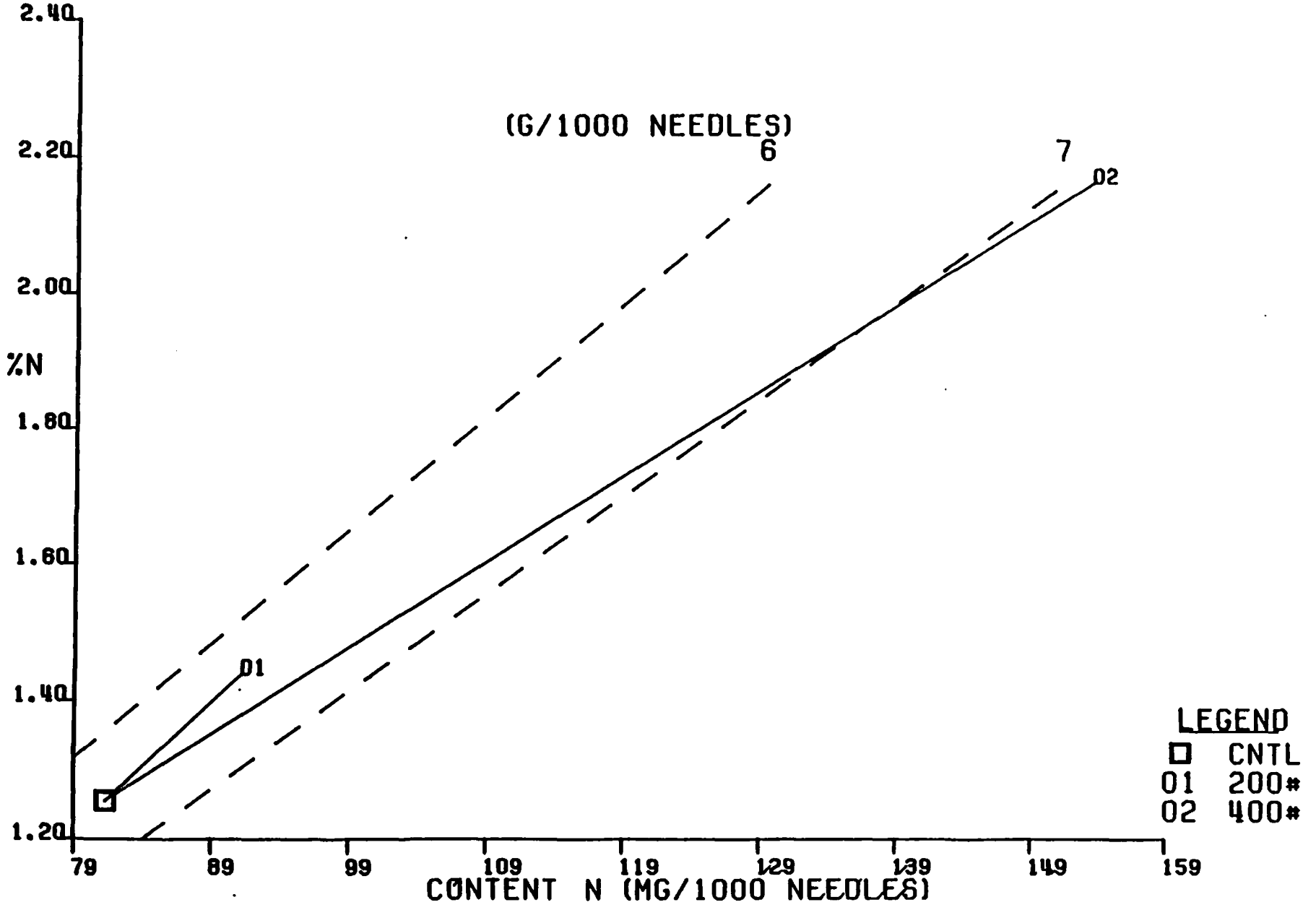
204 JOHNSON MILL #1



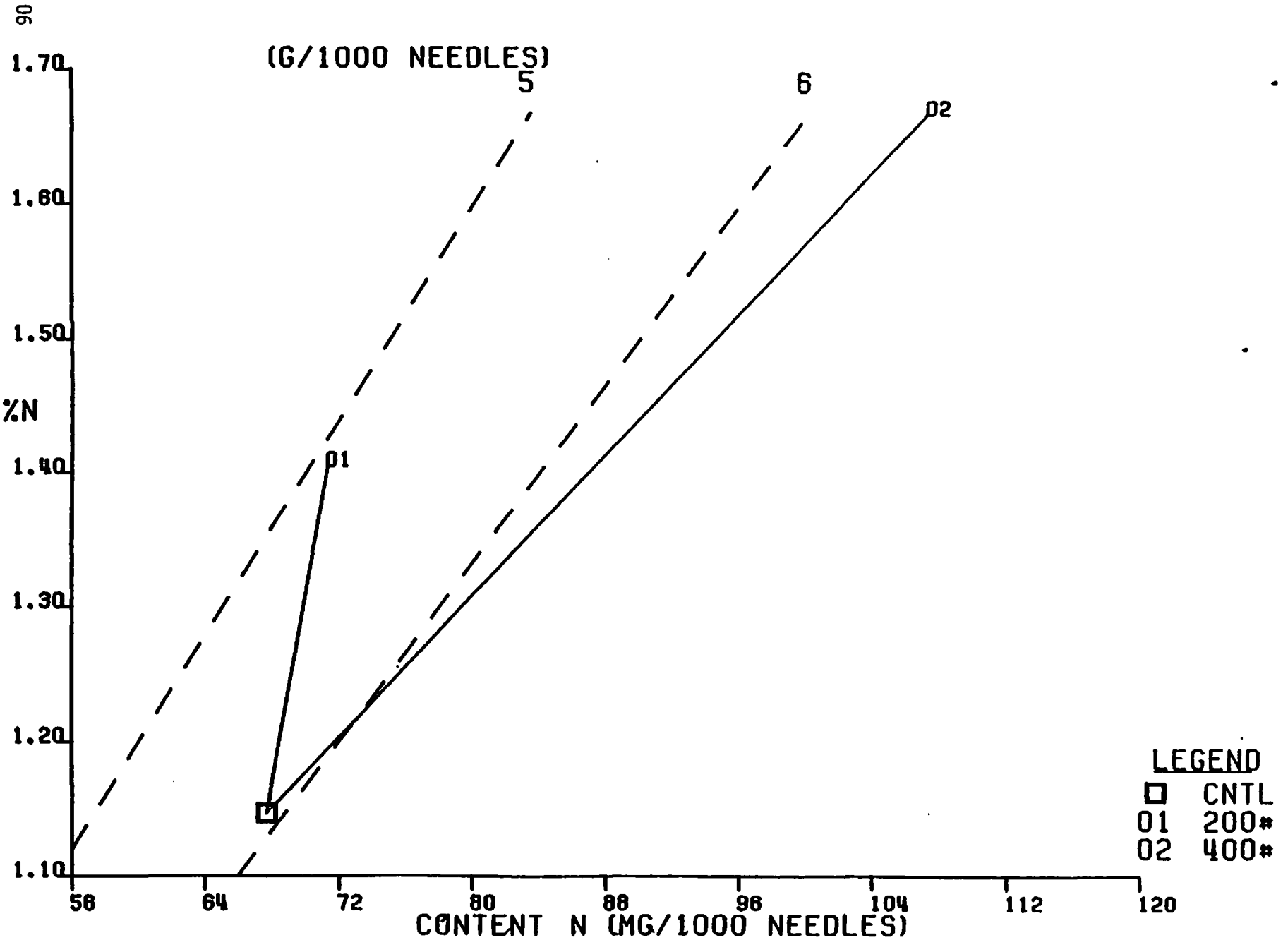
205 JOHNSON MILL #2



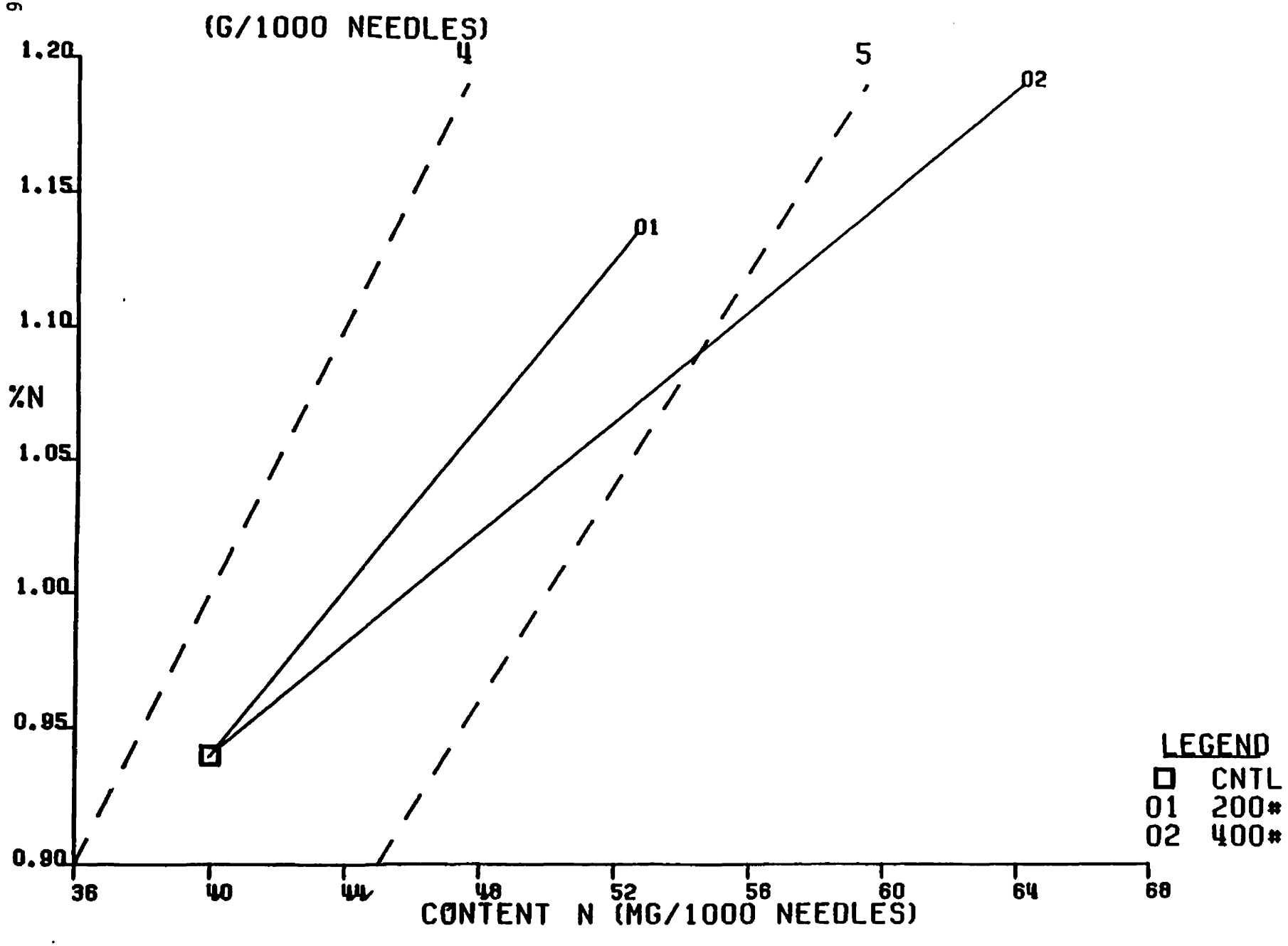
206 CARIBEL #2



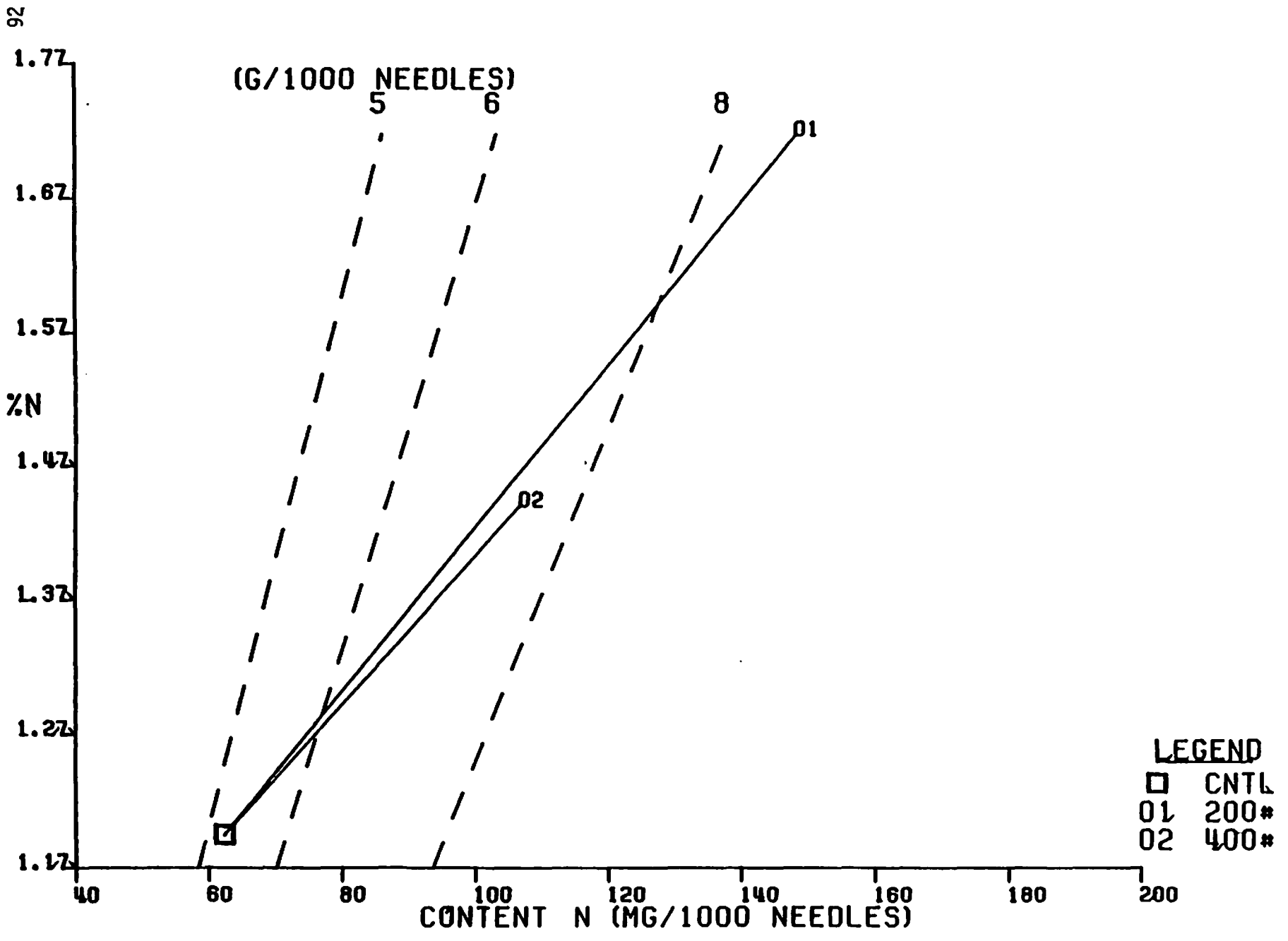
207 WAHA #1


90
(G/1000 NEEDLES)
1.70
1.60
1.50
%N
1.40
1.30
1.20
1.10
5
6
02
01
56
64
72
80
88
96
104
112
120
CONTENT N (MG/1000 NEEDLES)
LEGEND
CNTL
01 200#
02 400#

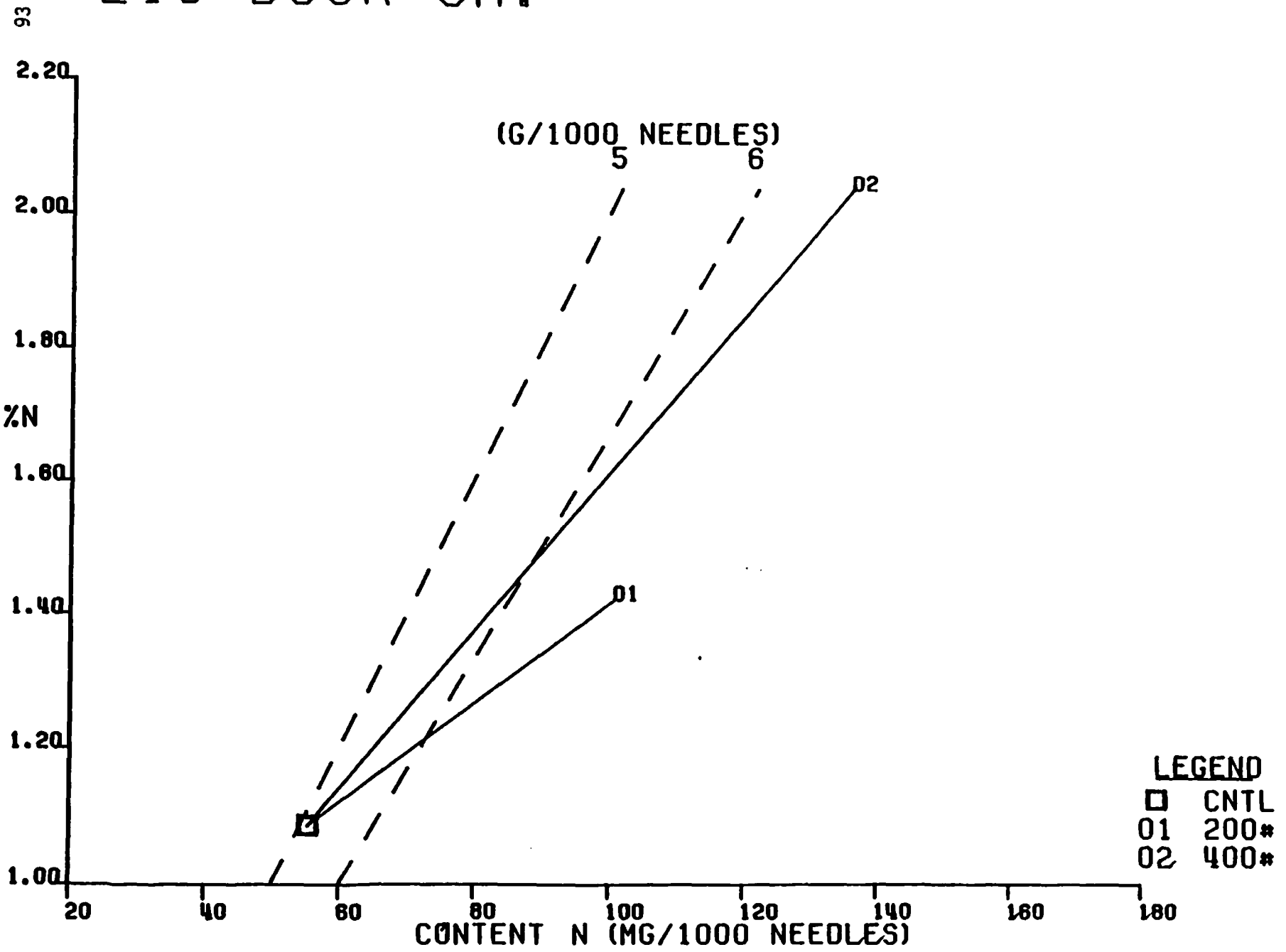
208 LØVELL VALLEY RD.



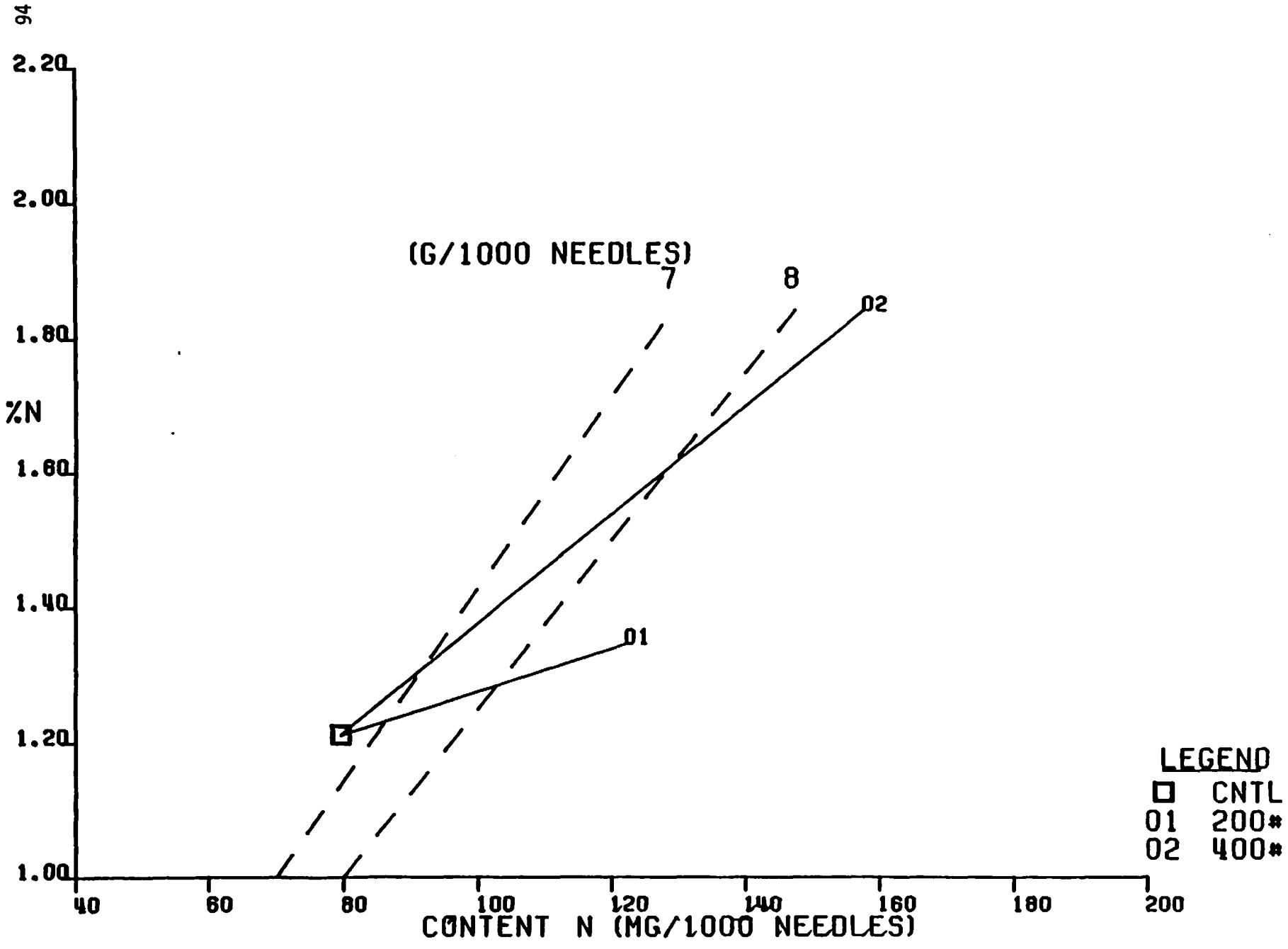
209 ADDEY


92
(G/1000 NEEDLES)
5
6
8
01
02
%N
1.77
1.67
1.57
1.47
1.37
1.27
1.17
40
60
80
100
120
140
160
180
200
CONTENT N (MG/1000 NEEDLES)
LEGEND
CNTL
01 200#
02 400#

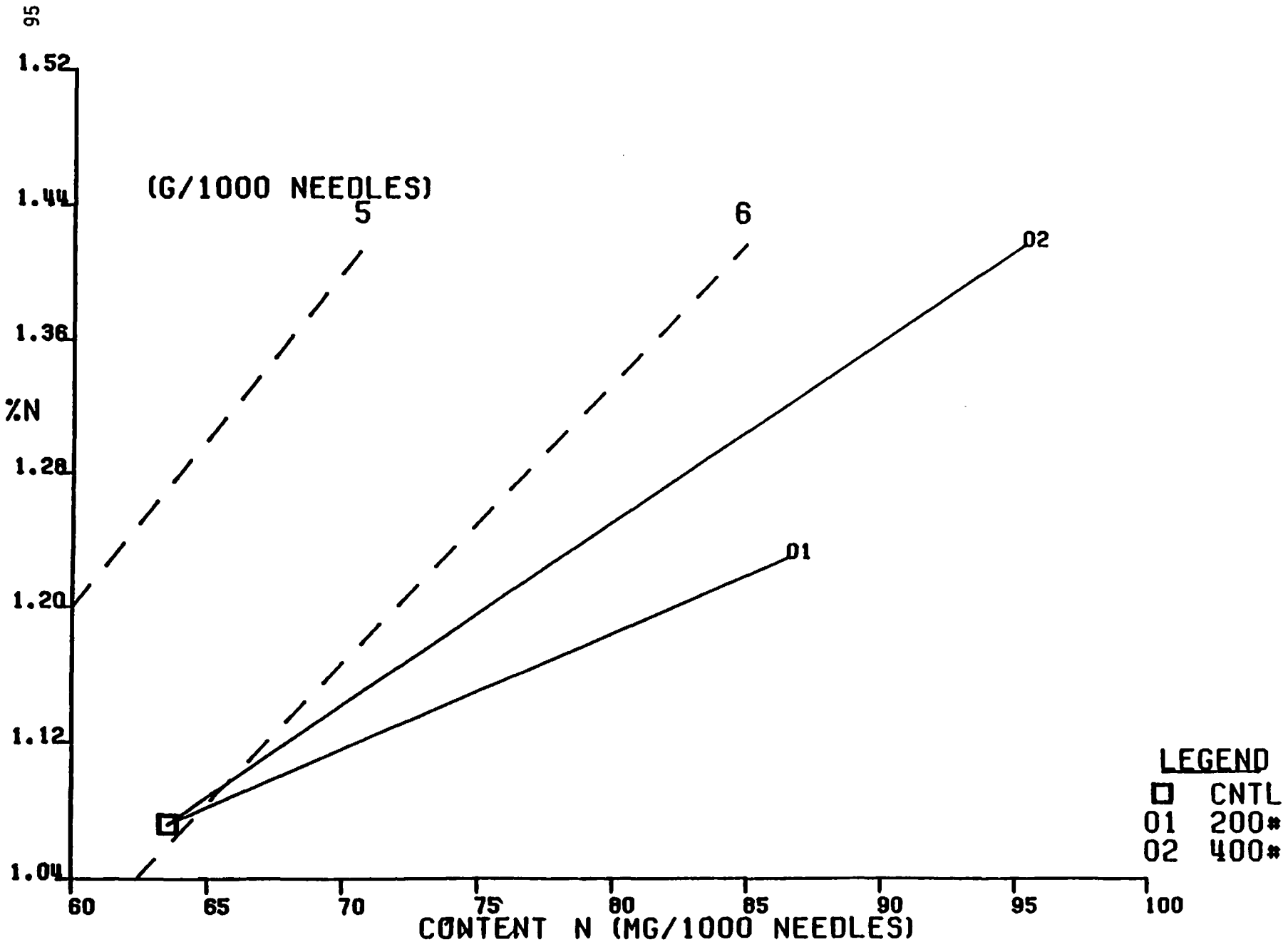
210 BUCK CR.


93
2.20
2.00
1.80
%N
1.60
1.40
1.20
1.00
(G/1000 NEEDLES)
5
6
D2
D1
20
40
60
80
100
120
140
160
180
CONTENT N (MG/1000 NEEDLES)
LEGEND
CNTL
01 200#
02 400#

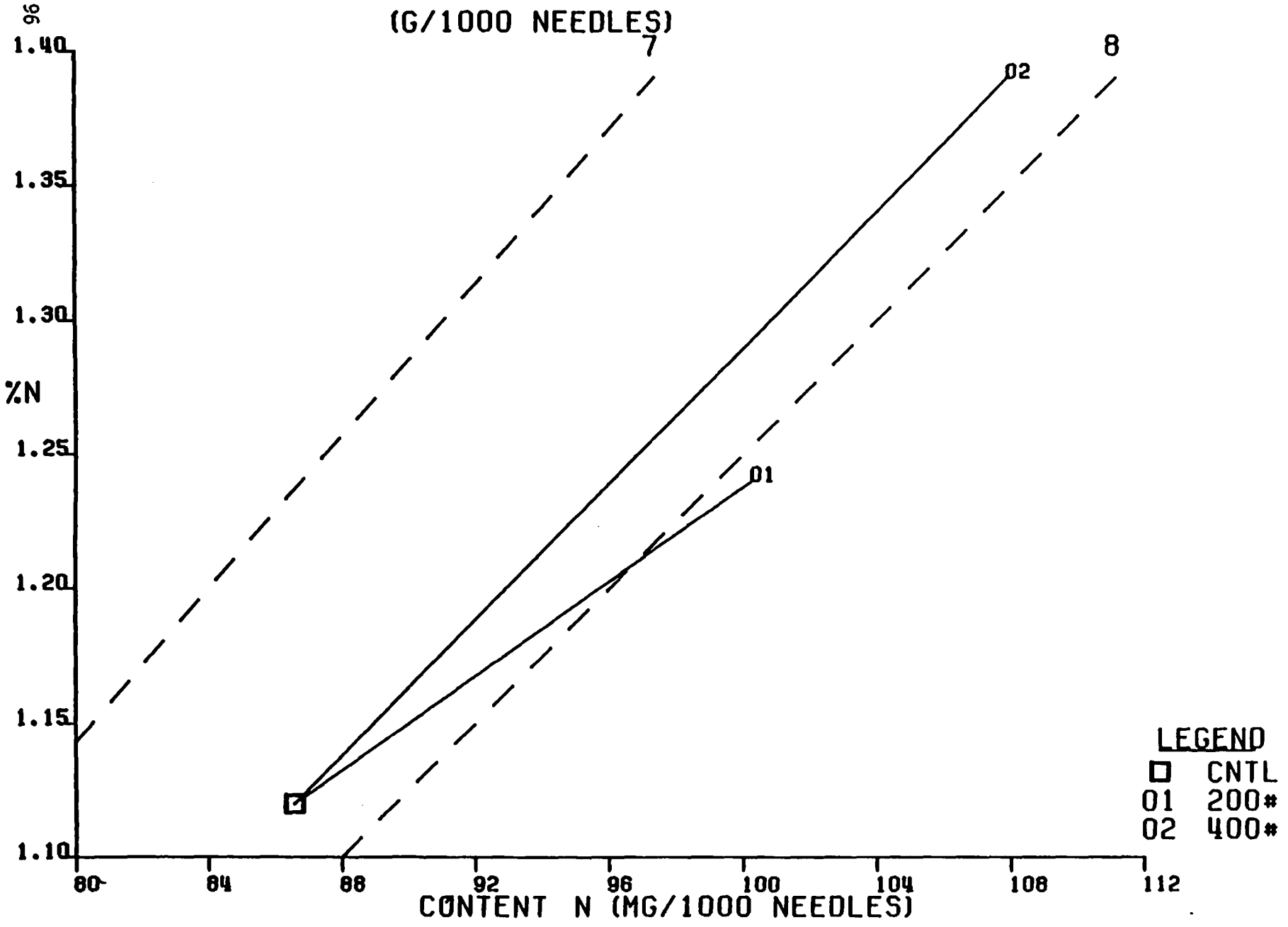
211 HEEL CR.


94
2.20
2.00
1.80
1.60
1.40
1.20
1.00
%N
(G/1000 NEEDLES)
7
8
02
01
LEGEND
CNTL
01 200*
02 400*
40
60
80
100
120
140
160
180
200
CONTENT N (MG/1000 NEEDLES)

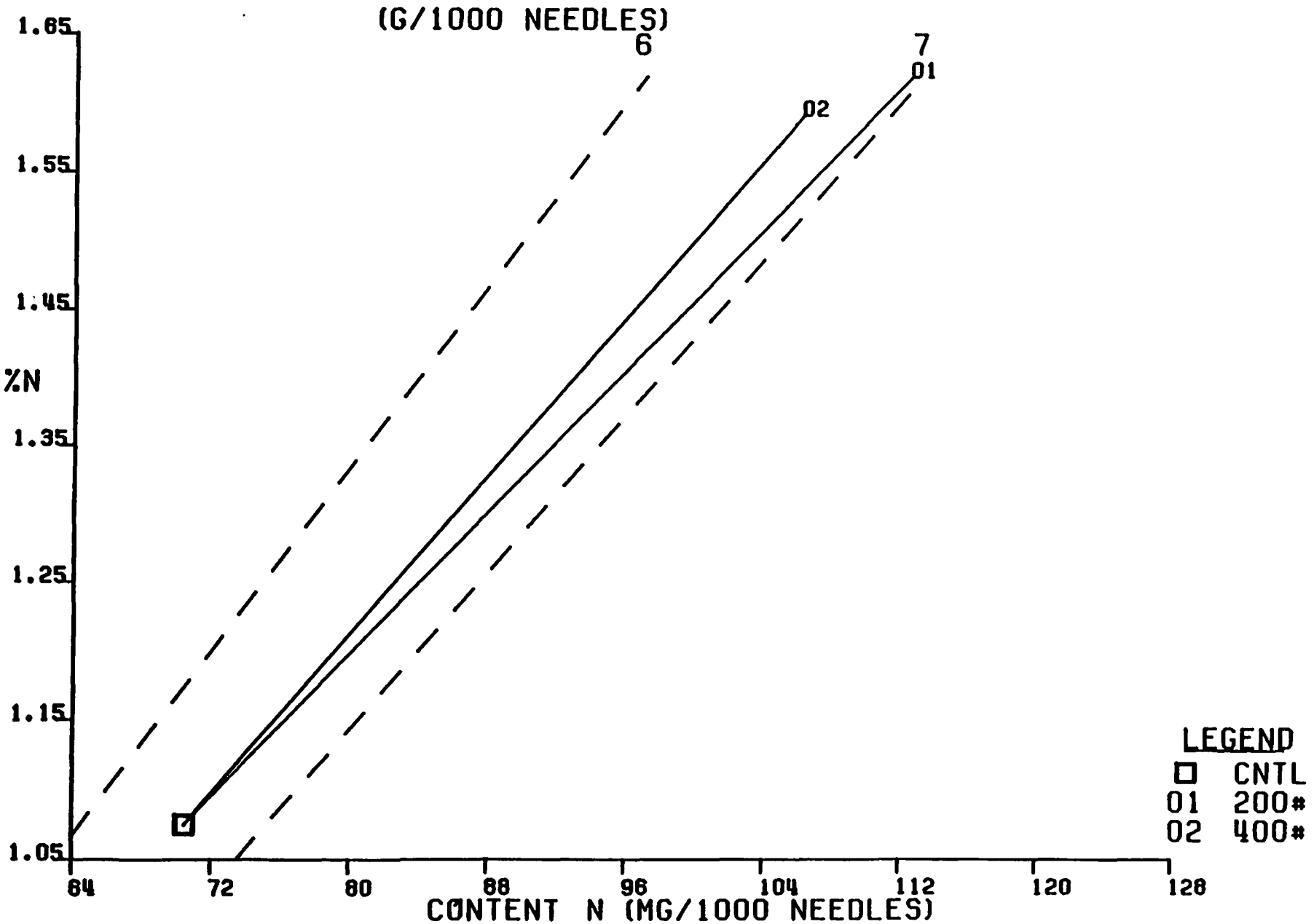
212 SWAMP CR.


95
1.52
1.44
1.36
1.28
1.20
1.12
1.04
%N
(G/1000 NEEDLES)
5
6
02
01
60
65
70
75
80
85
90
95
100
CONTENT N (MG/1000 NEEDLES)
LEGEND
CNTL
01 200*
02 400*

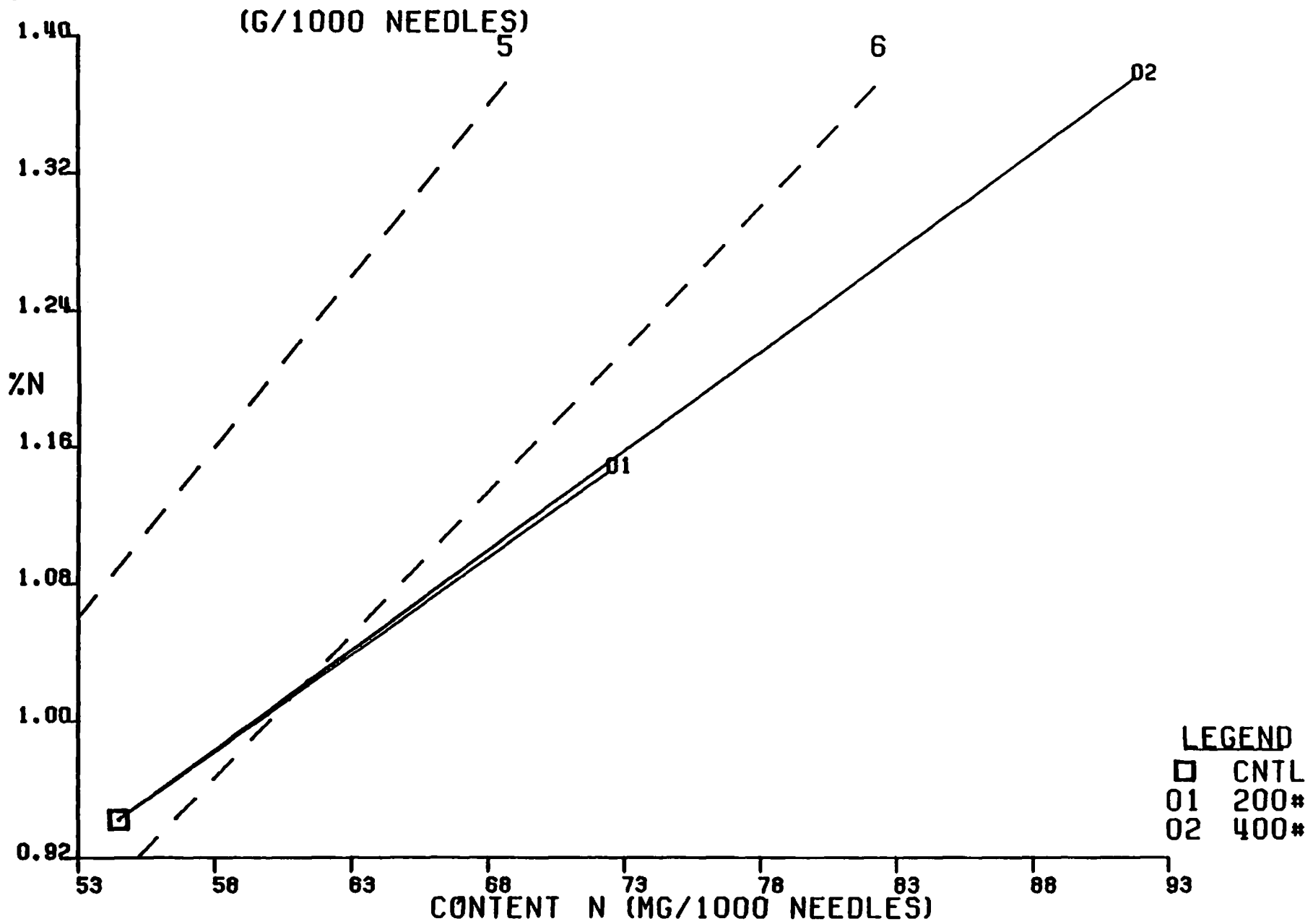
216 SHIMDT MDW.



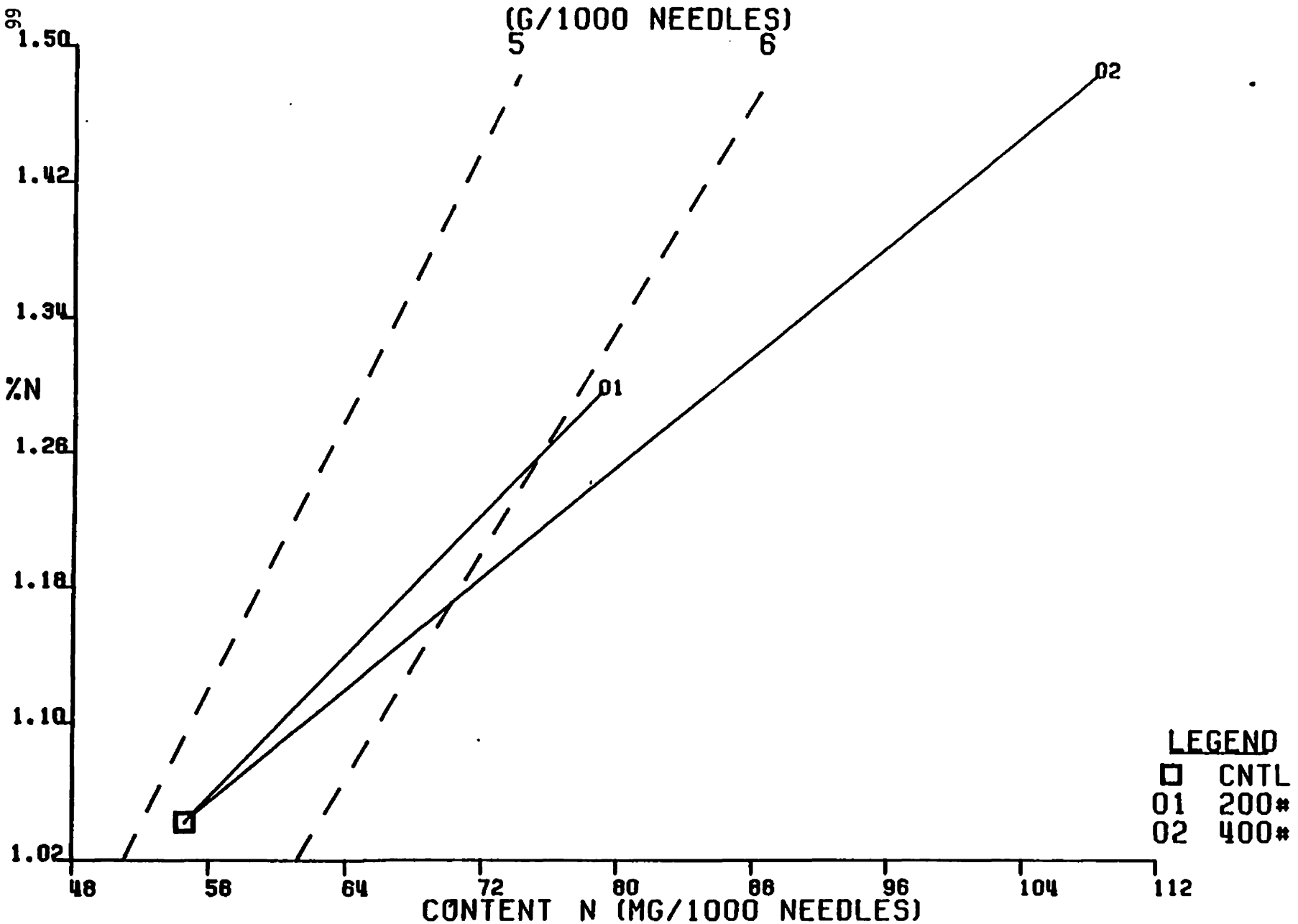
217 EMANUAL CR.

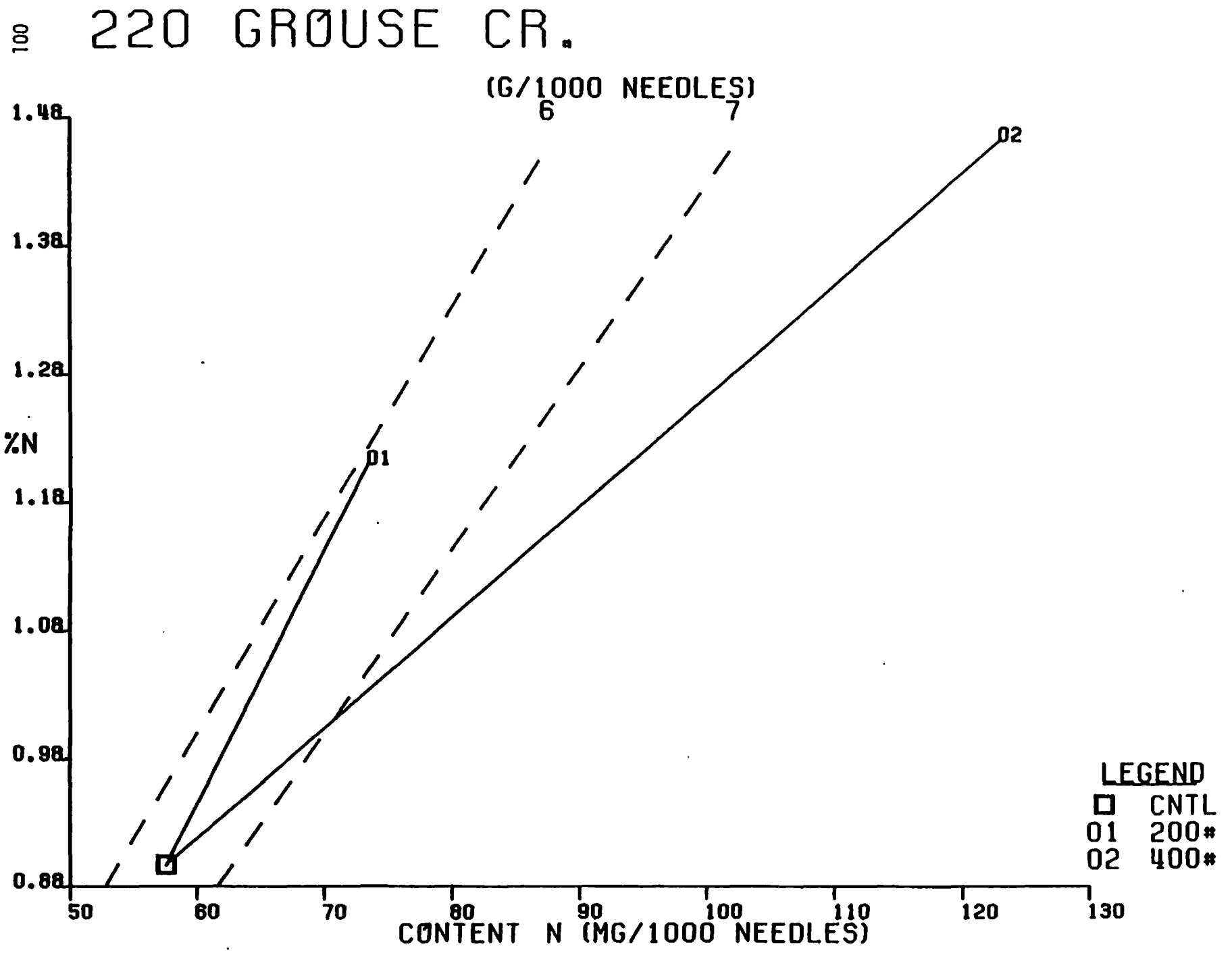


218 SECØND CR.



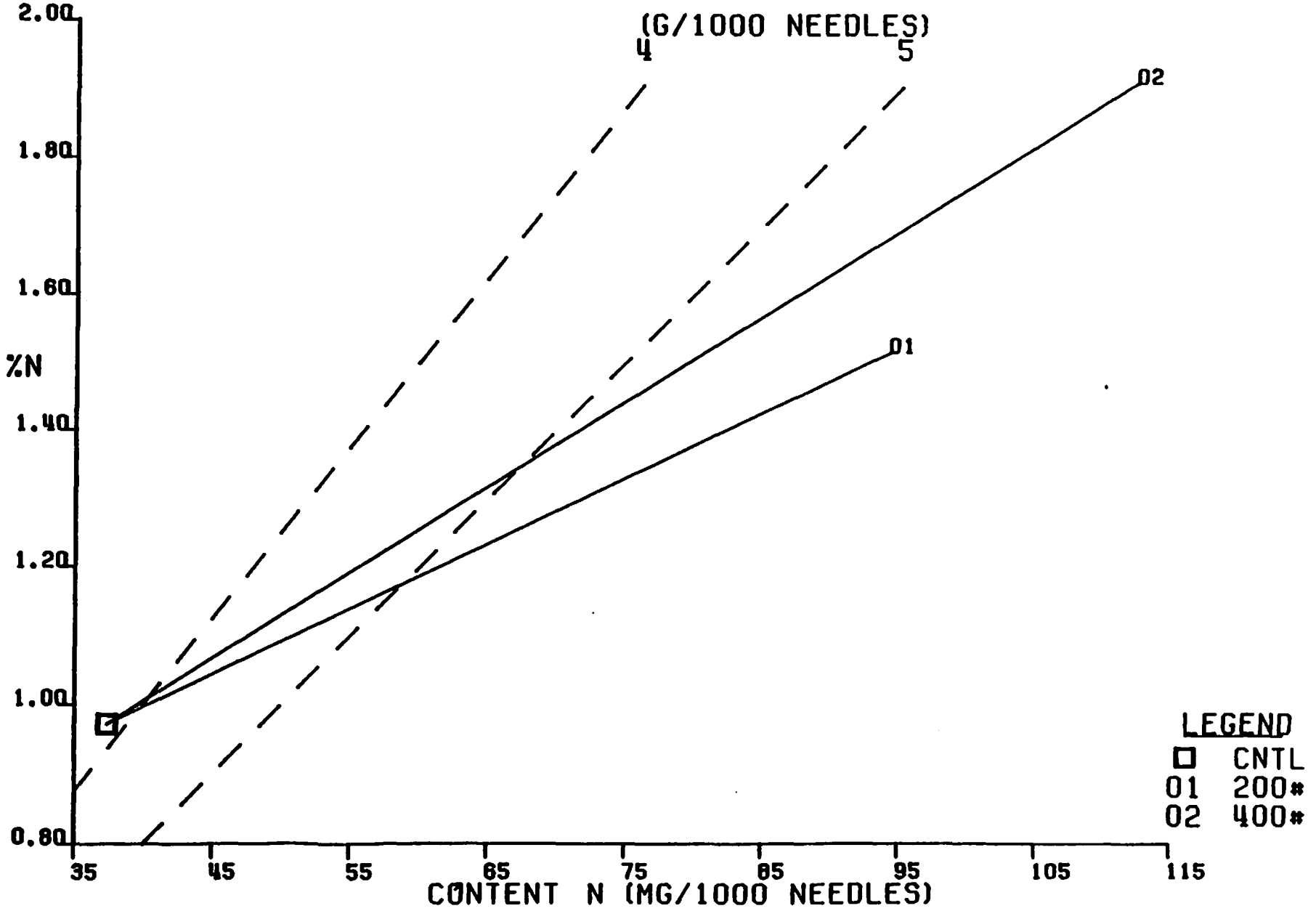
219 LITTLE SALMON RIVER



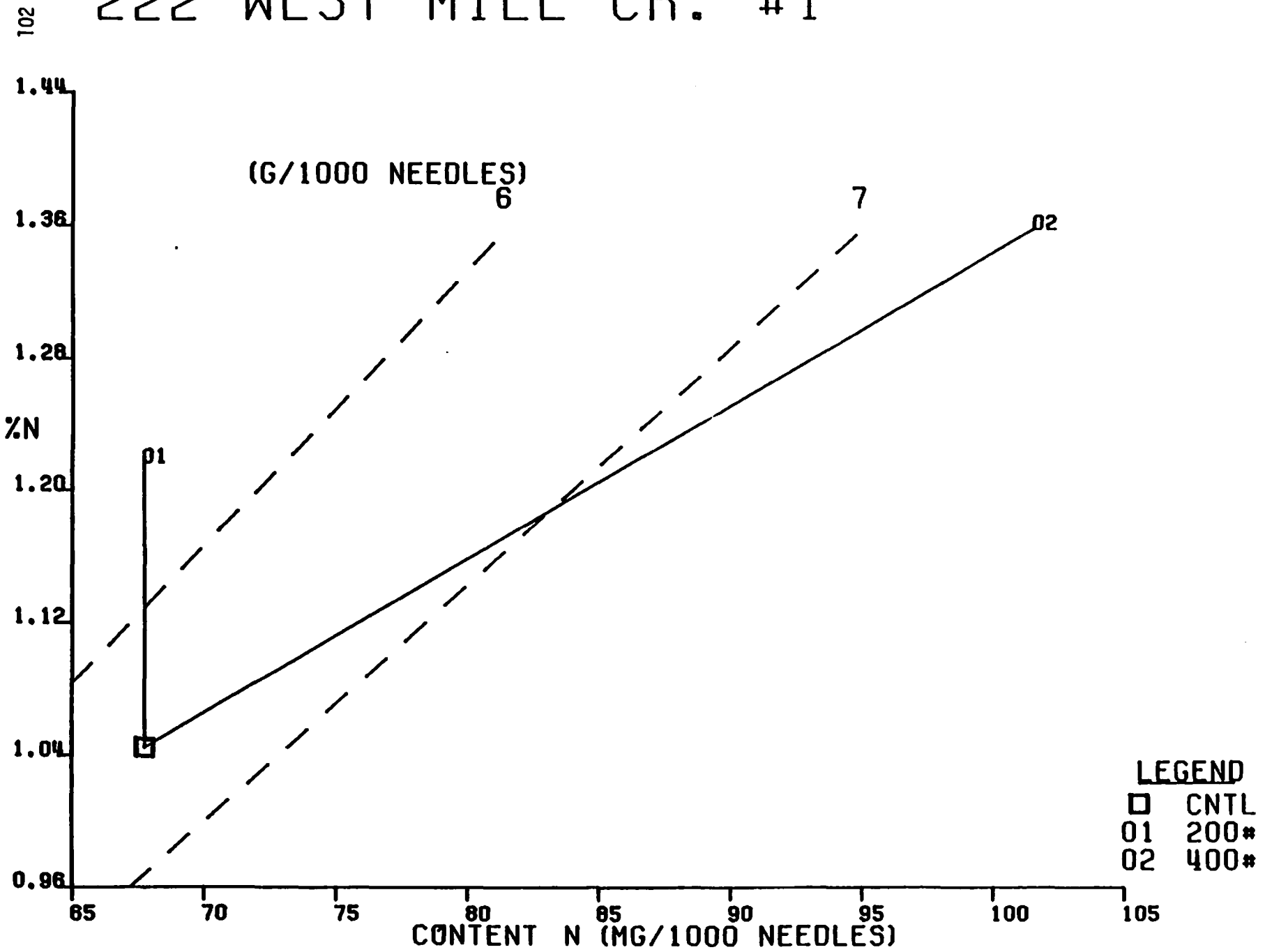

100
220 GROUSE CR.
(G/1000 NEEDLES)
6
7
02
01
1.48
1.38
1.28
%N
1.18
1.08
0.98
0.88
50
60
70
80
90
100
110
120
130
CONTENT N (MG/1000 NEEDLES)
LEGEND
CNTL
01 200#
02 400#

101

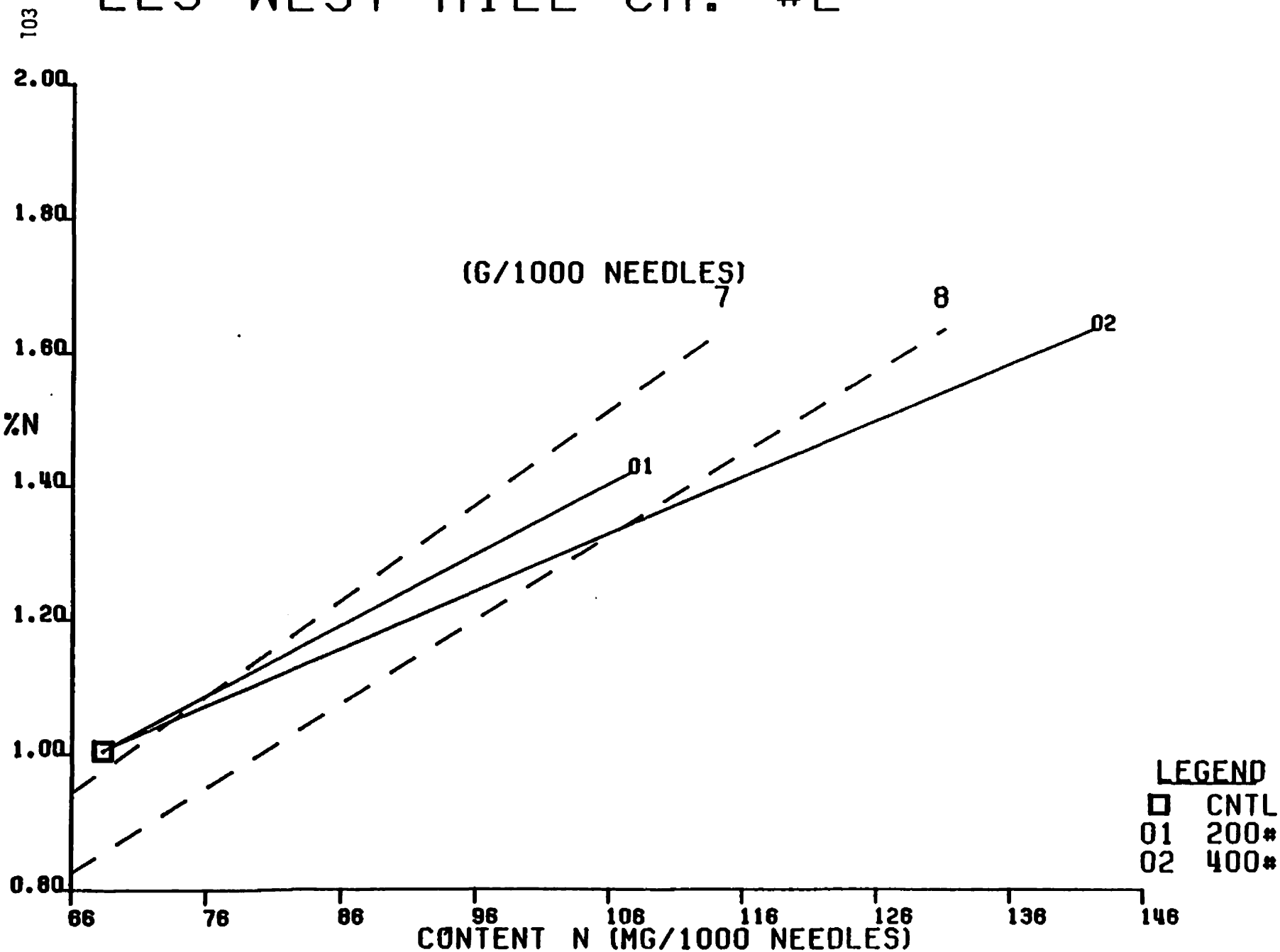
221 LITTLE MUD CR. #1



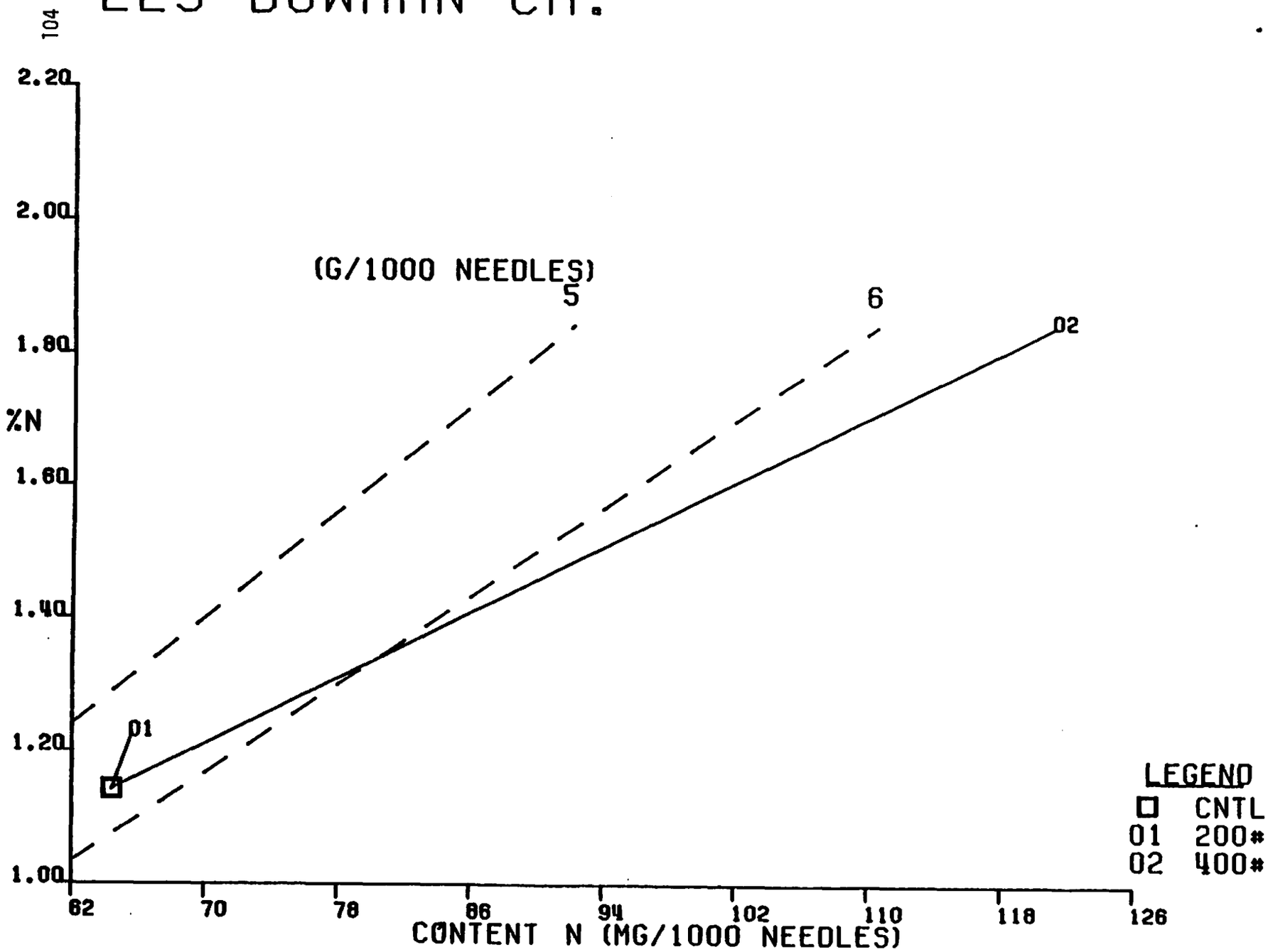
222 WEST MILL CR. #1



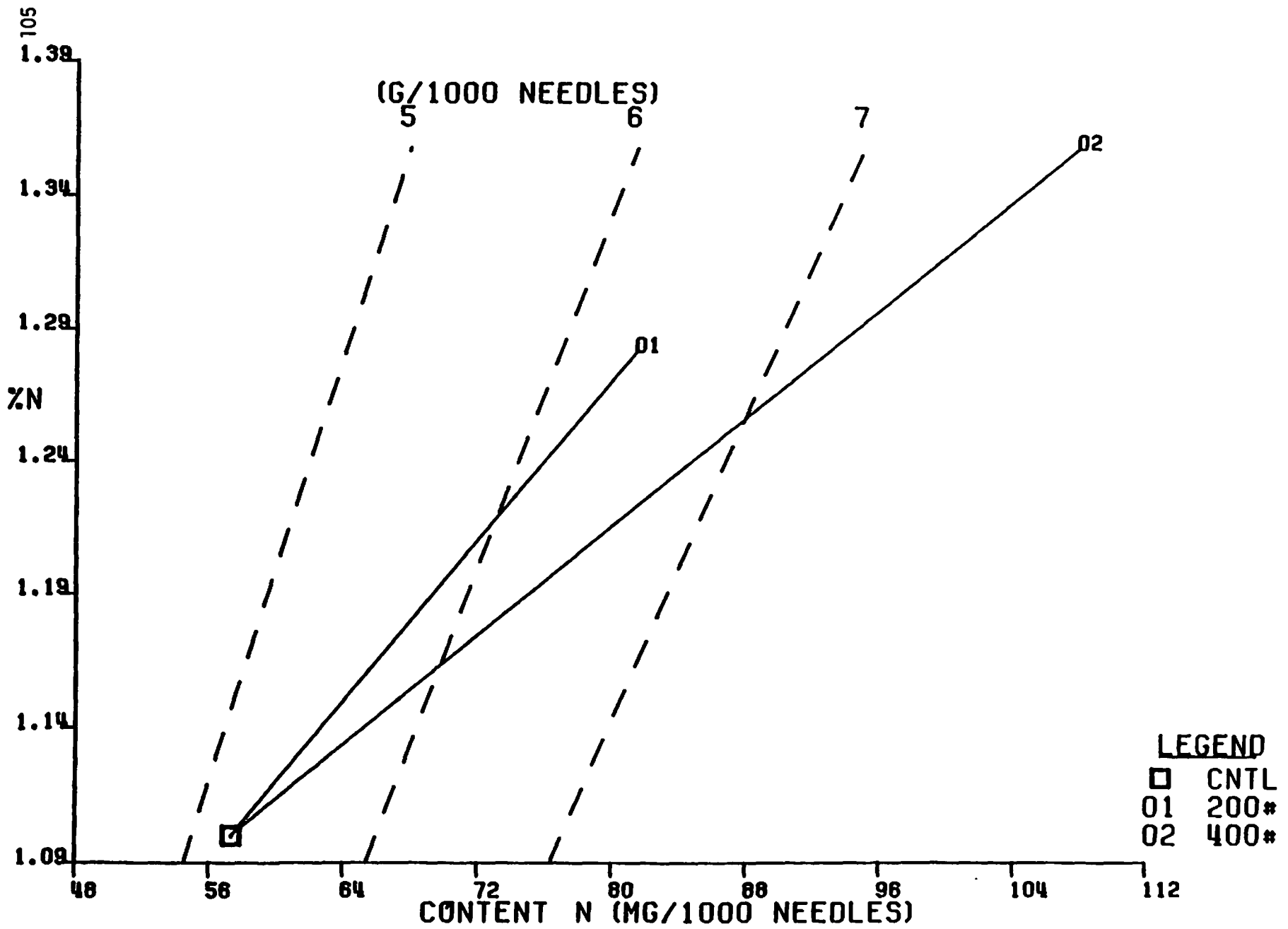
223 WEST MILL CR. #2



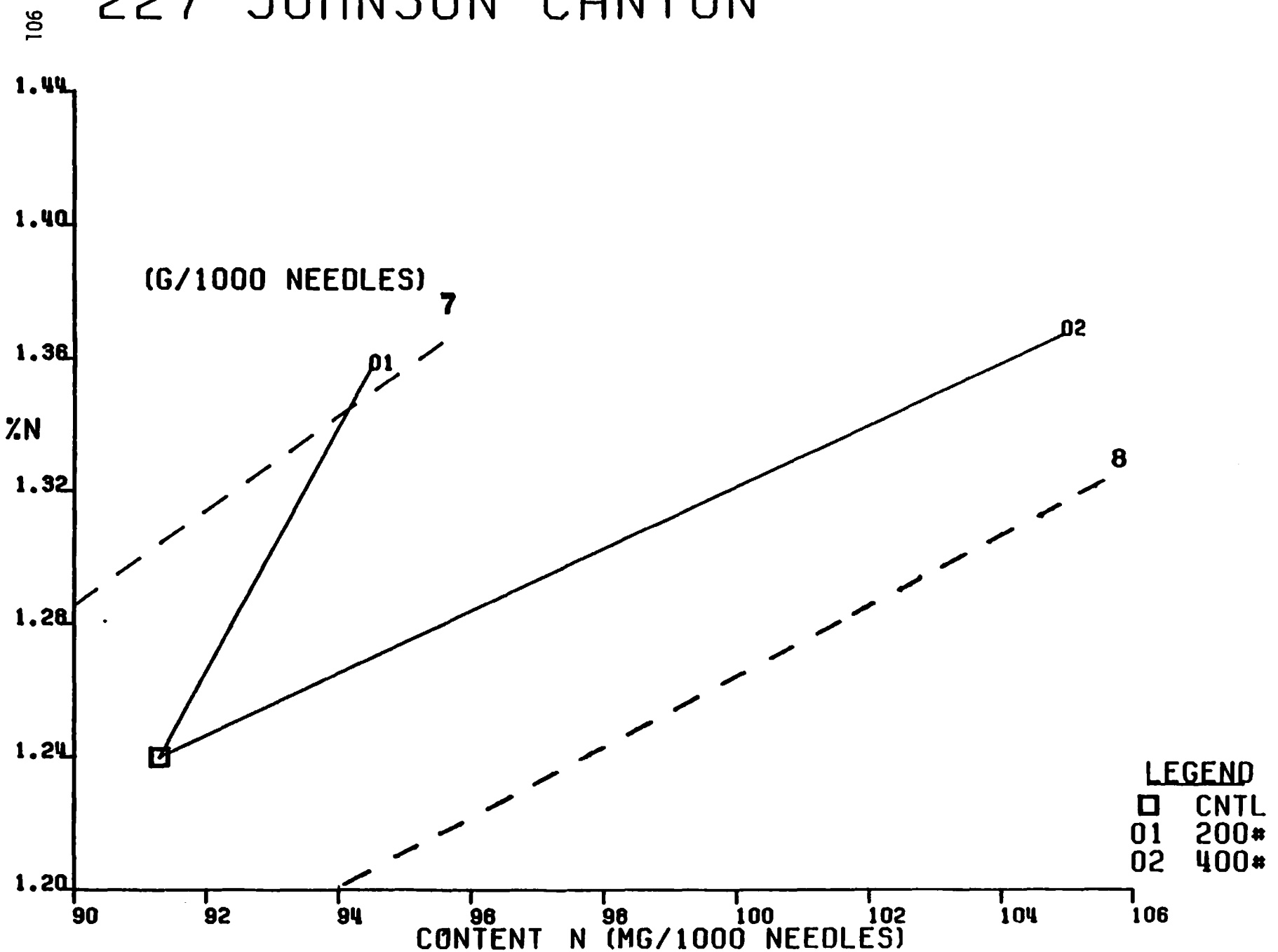
225 BØWMAN CR.



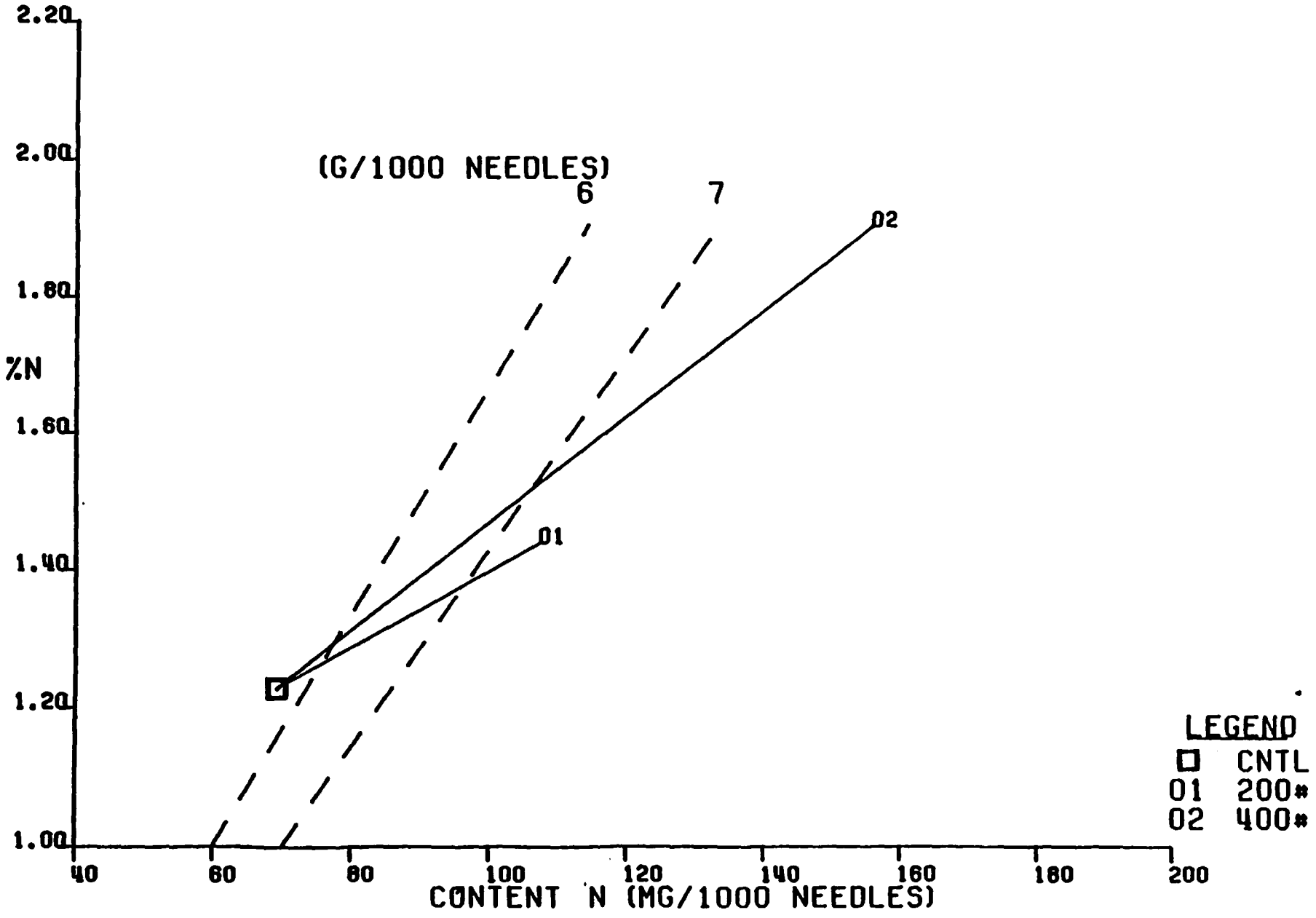
226 CLEMAN MT.



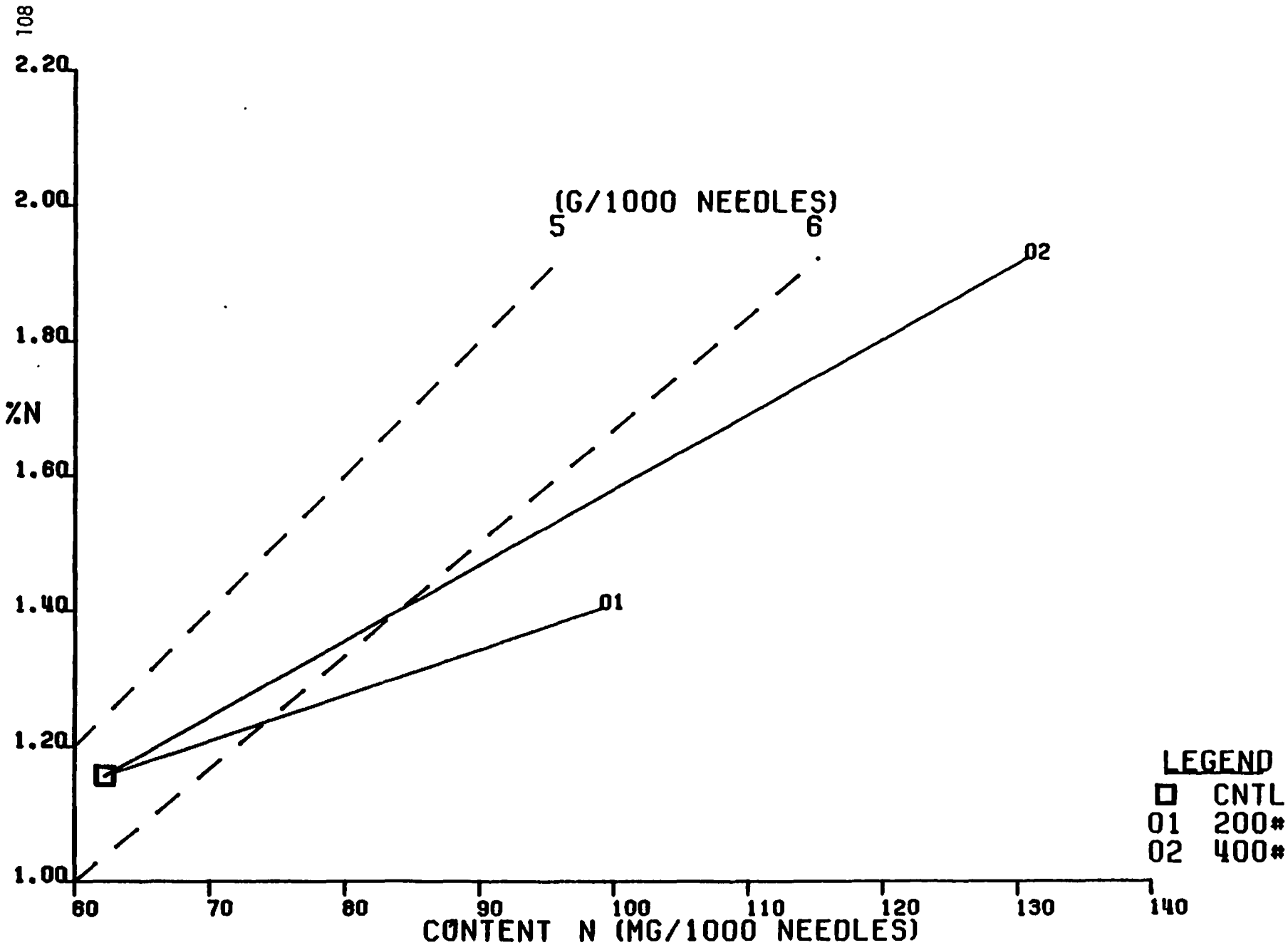
227 JOHNSON CANYON



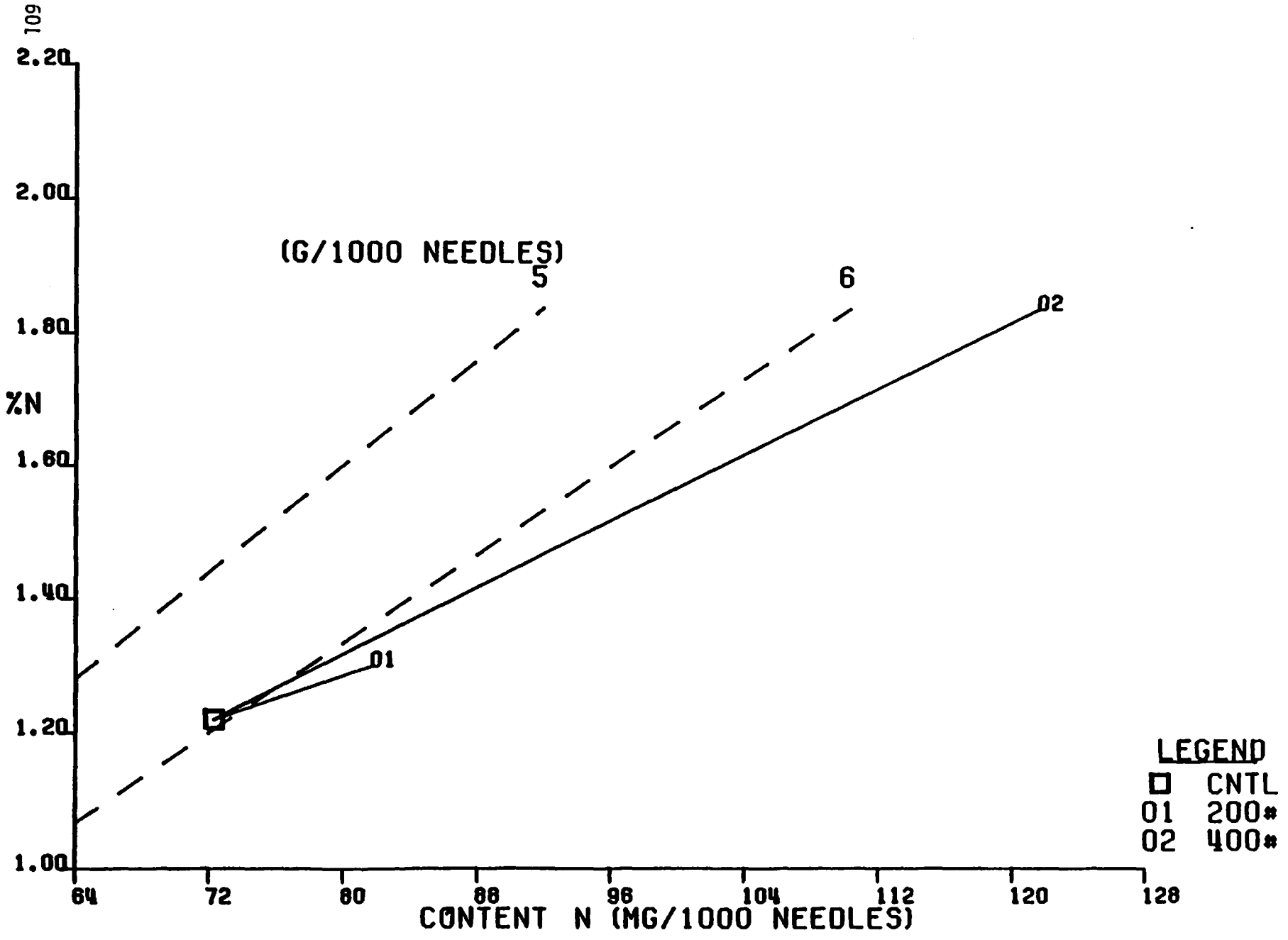
228 LOOKOUT MT. WEST



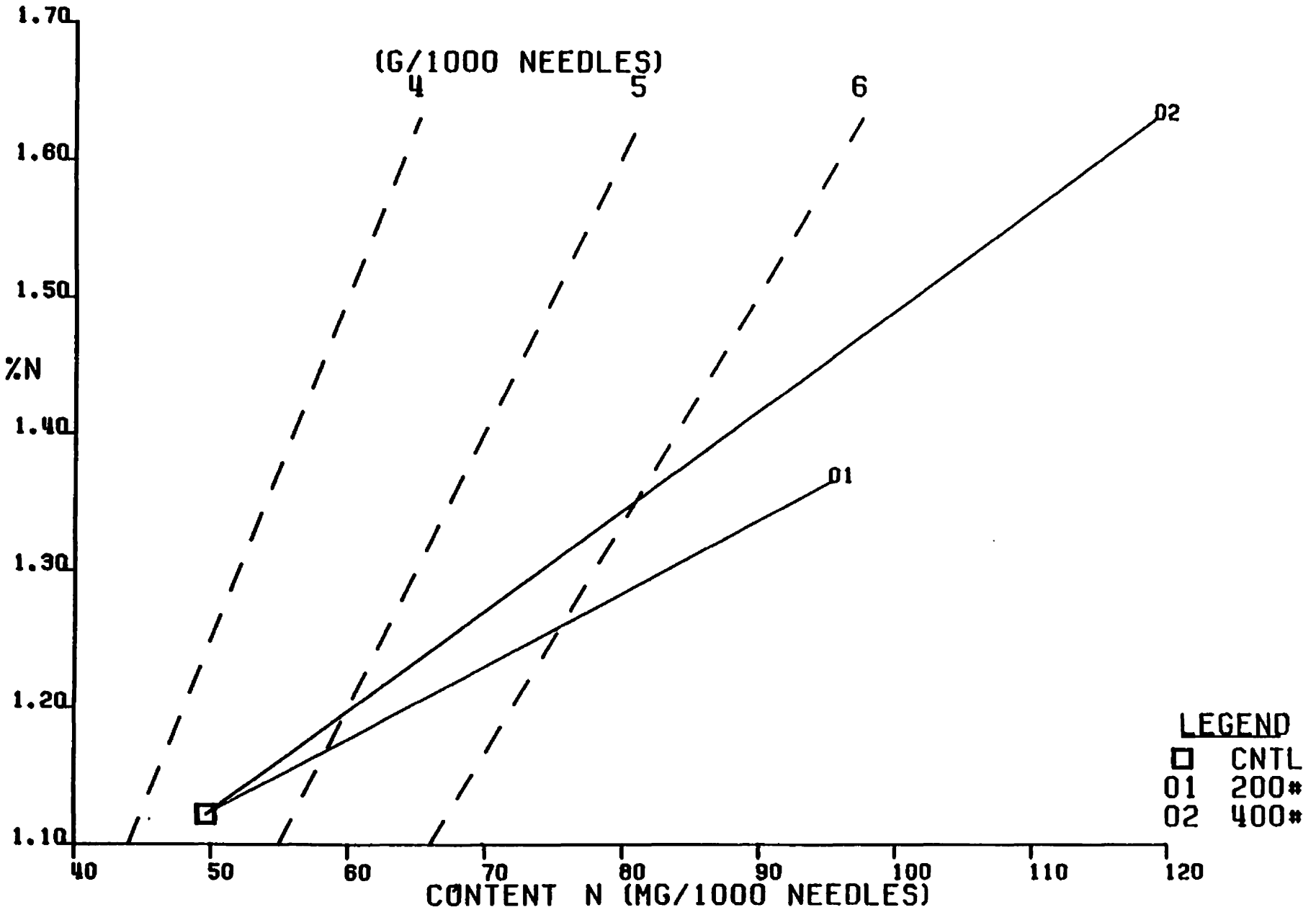
229 LOOKOUT MT. EAST



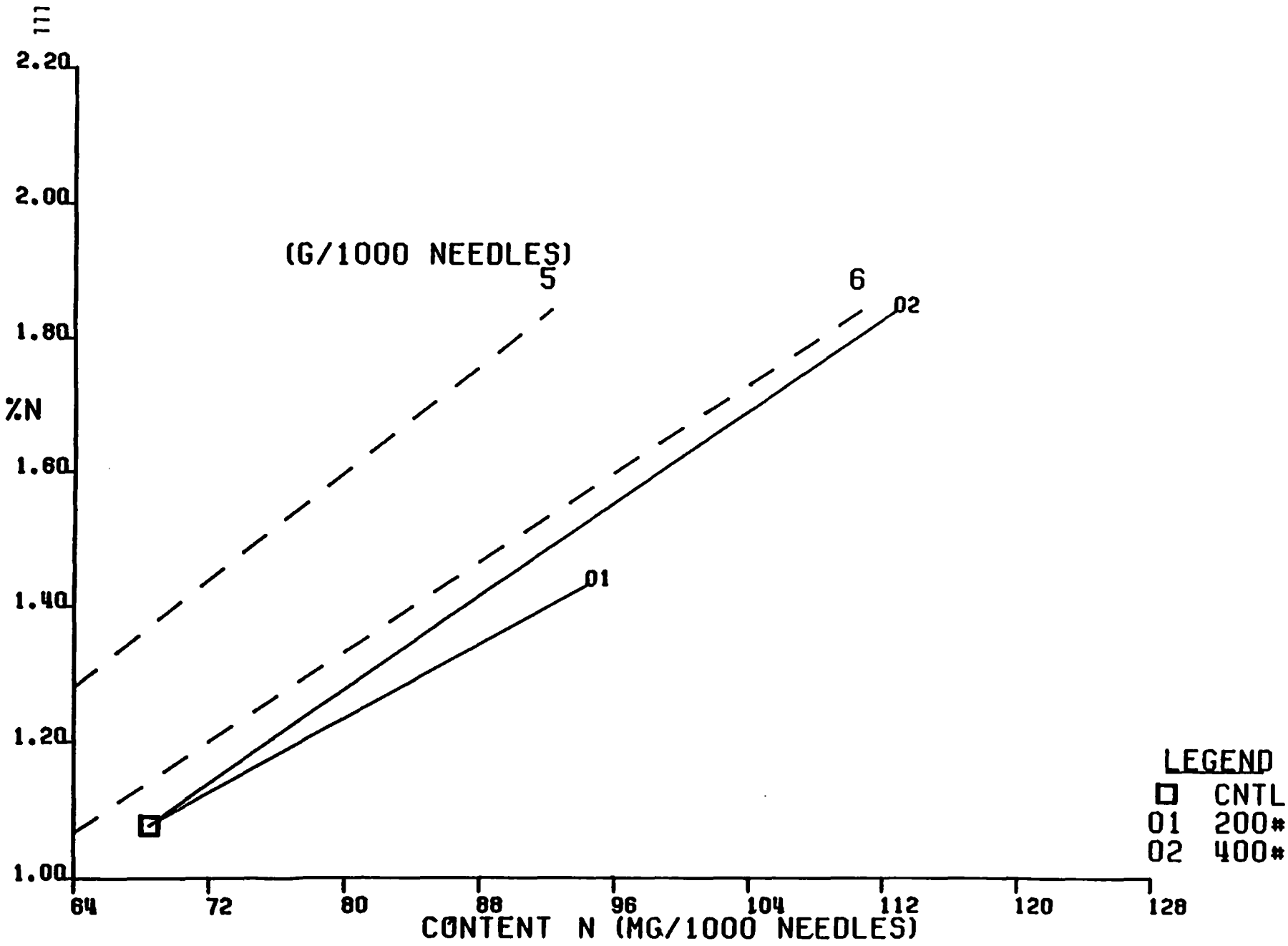
230 M.F. TEANAWAY R.



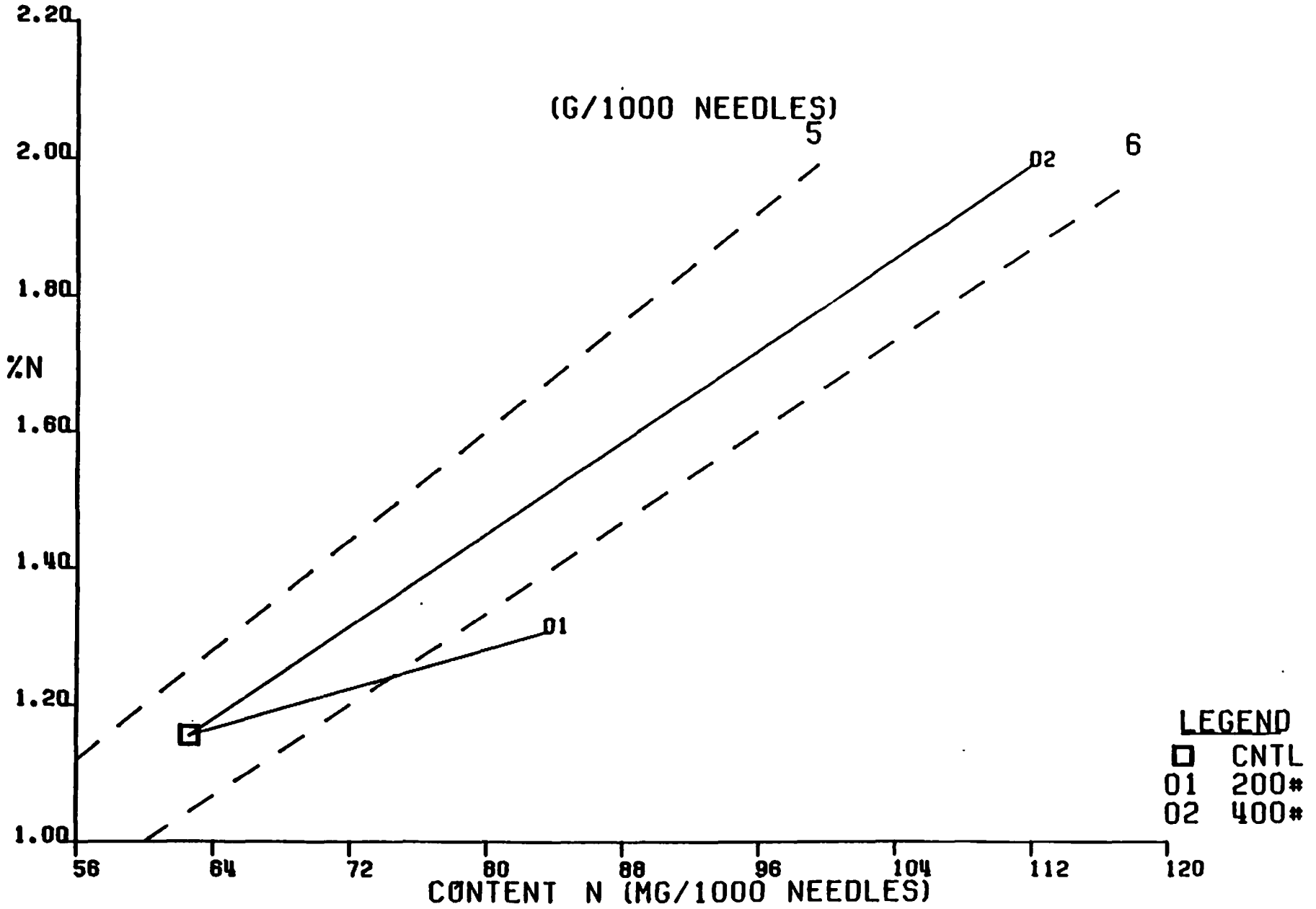
231 ELMØ


110
1.70
1.60
1.50
%N
1.40
1.30
1.20
1.10
(G/1000 NEEDLES)
4
5
6
02
01
LEGEND
CNTL
01 200*
02 400*
40
50
60
70
80
90
100
110
120
CONTENT N (MG/1000 NEEDLES)

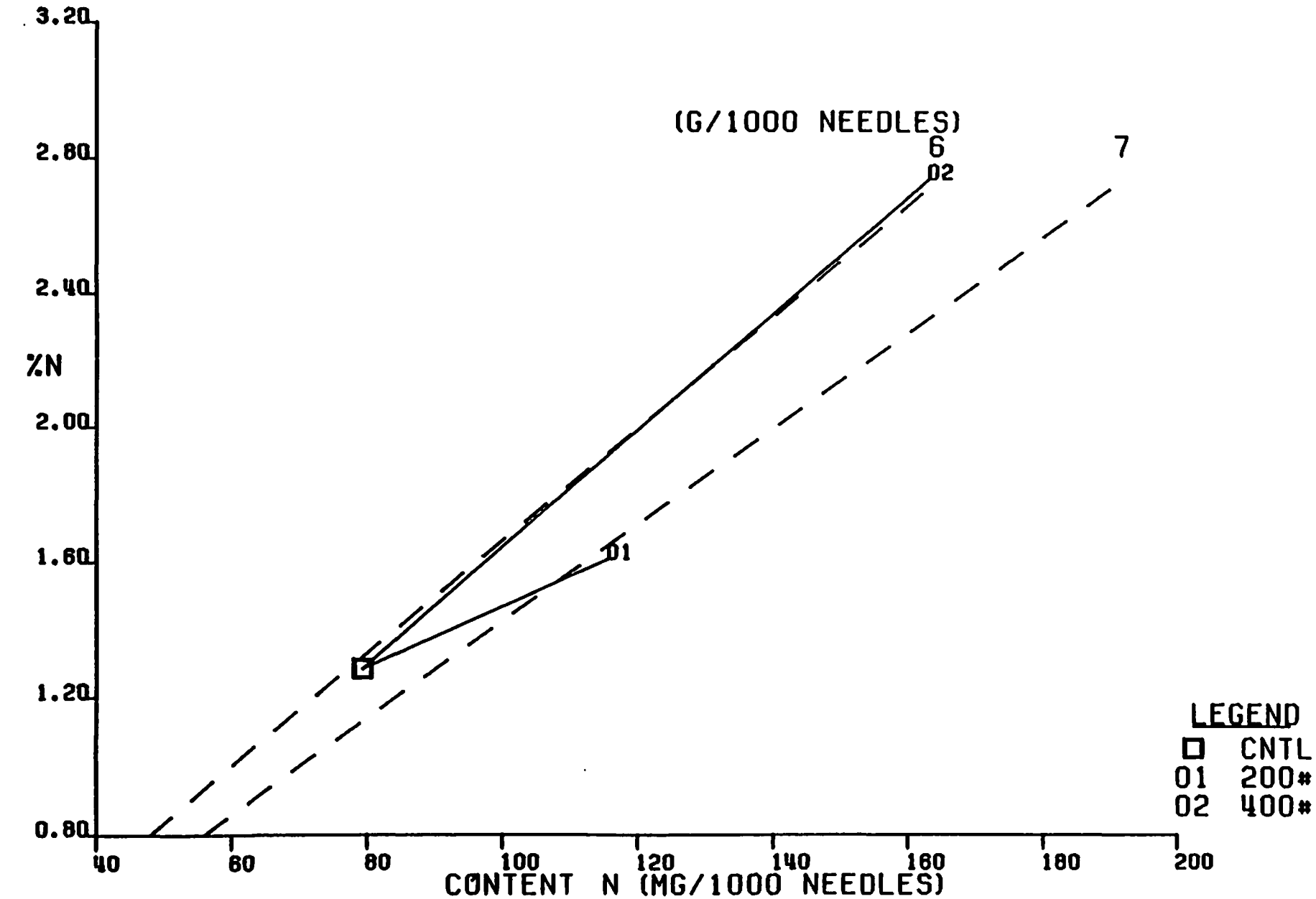
232 SUNNYSLØPE



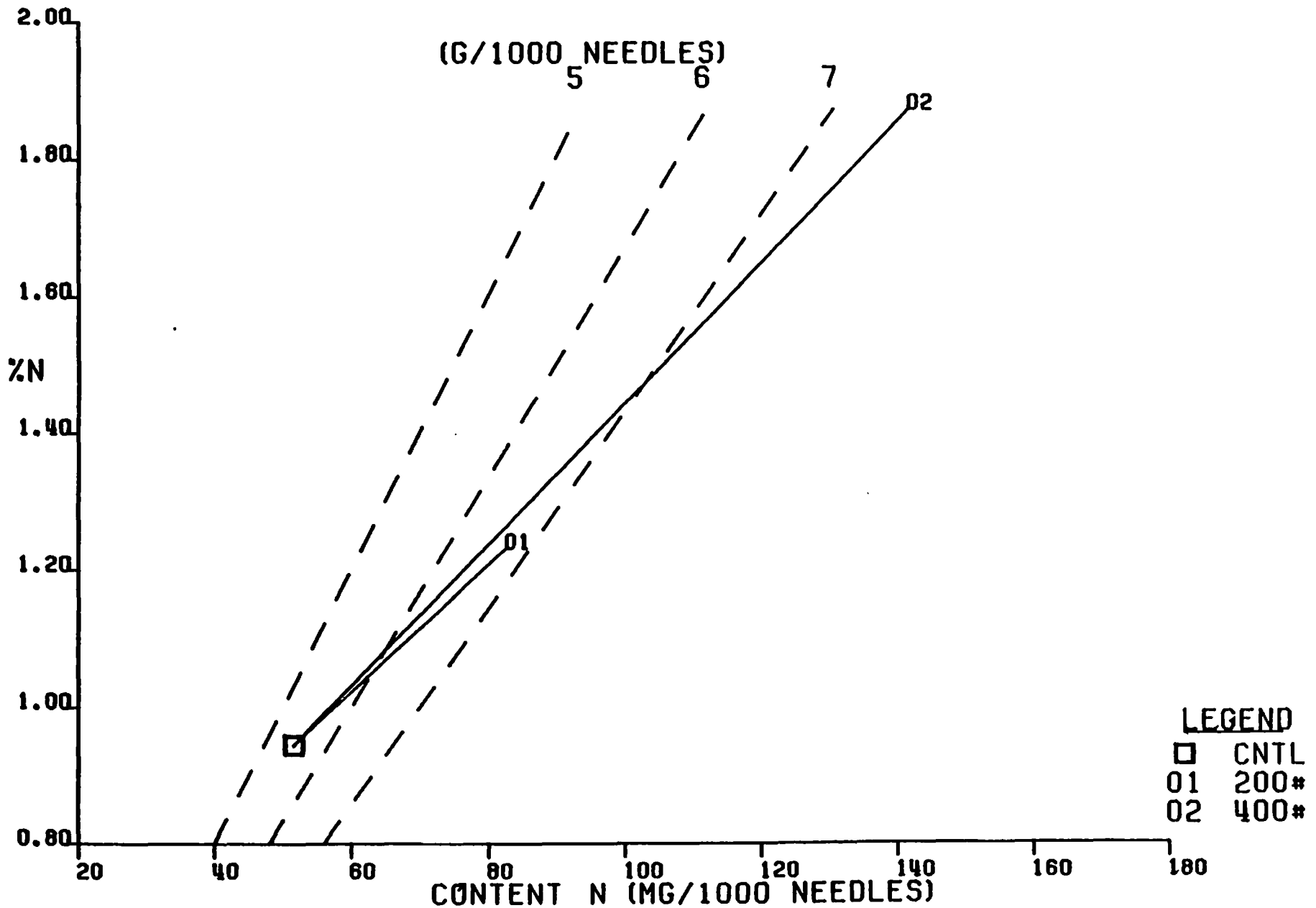
233 HELLRØARING CR.

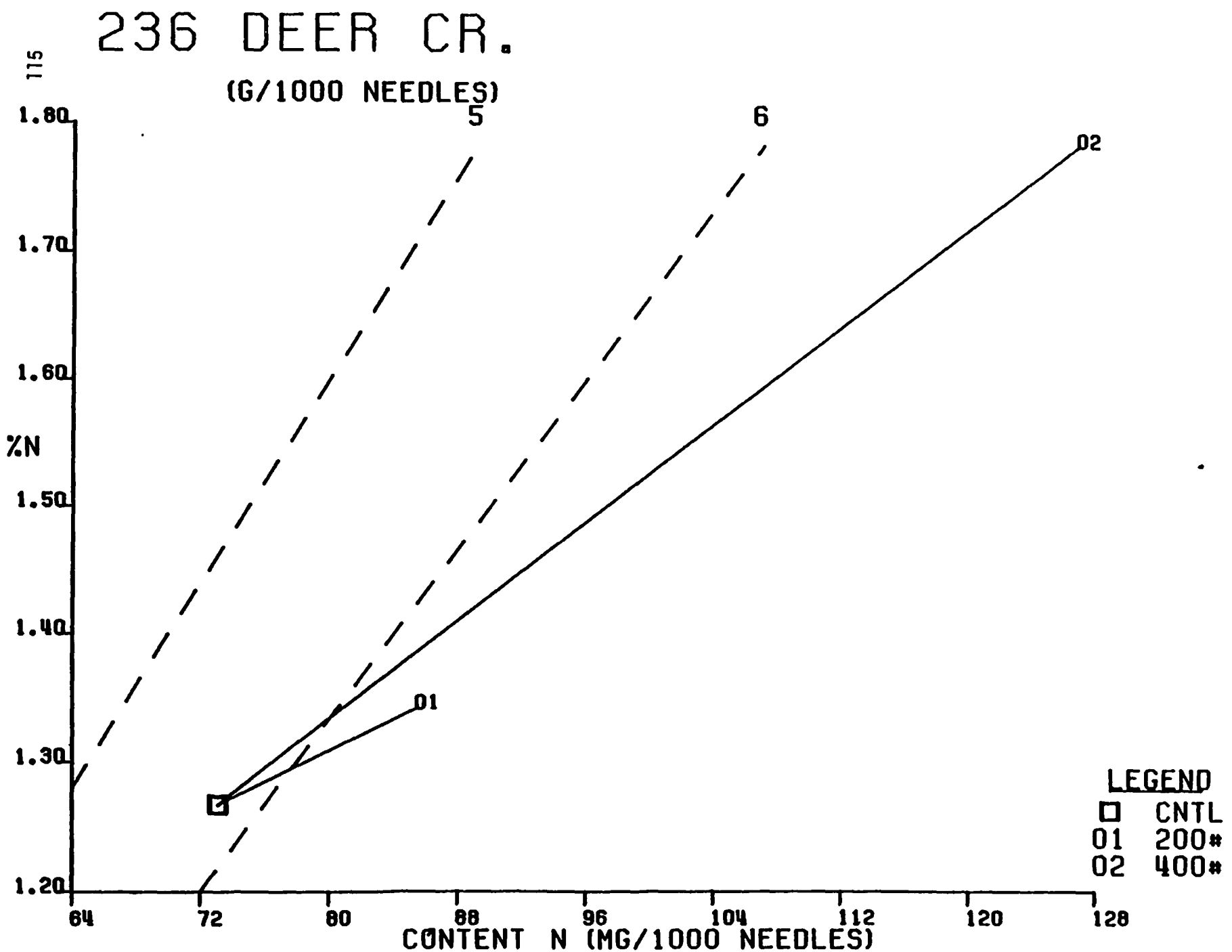


234 RØNAN

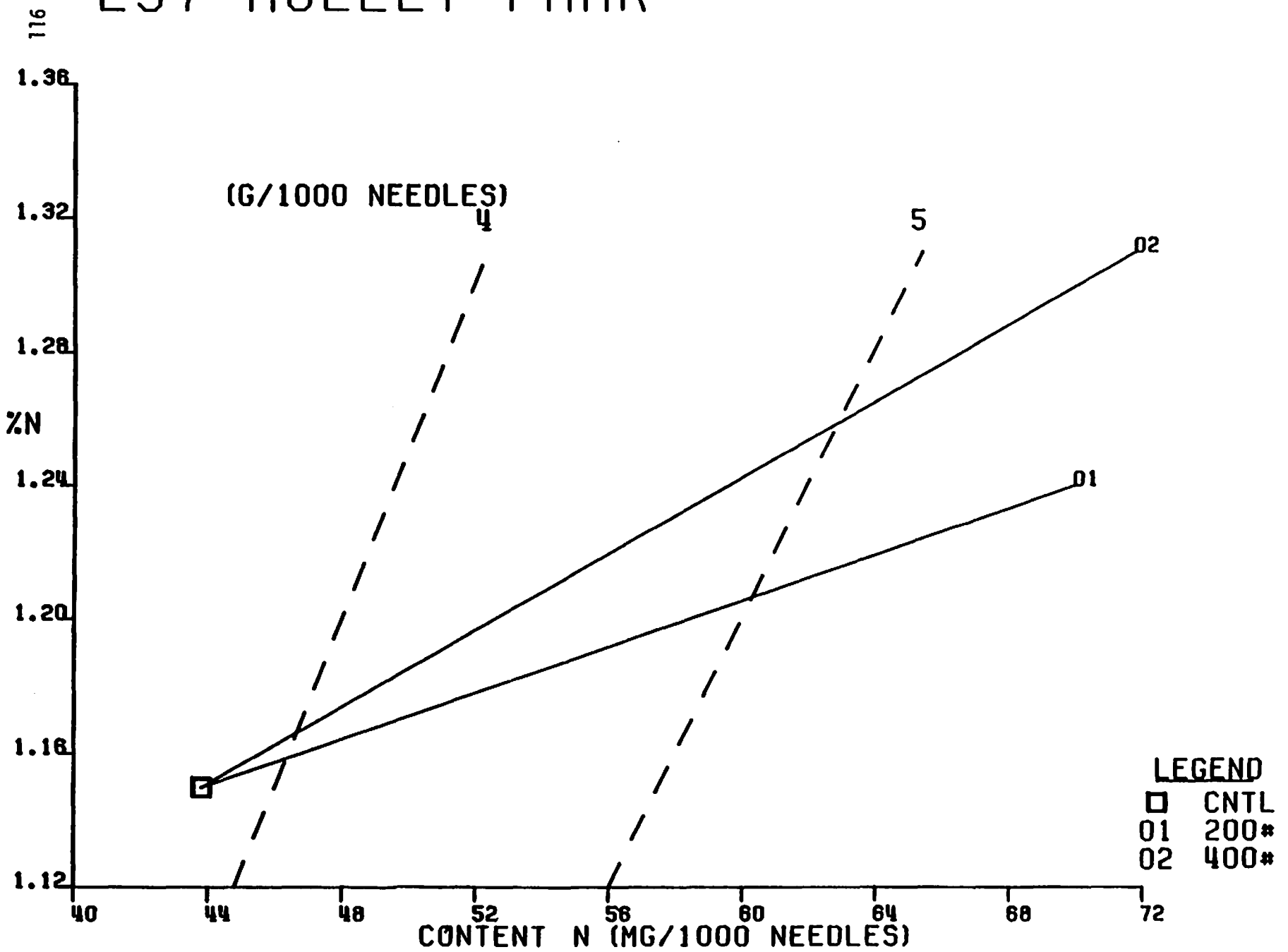

113
(G/1000 NEEDLES)
6
7
02
01
%N
3.20
2.80
2.40
2.00
1.60
1.20
0.80
40
60
80
100
120
140
160
180
200
CONTENT N (MG/1000 NEEDLES)
LEGEND
CNTL
01 200#
02 400#

235 FISH CR.

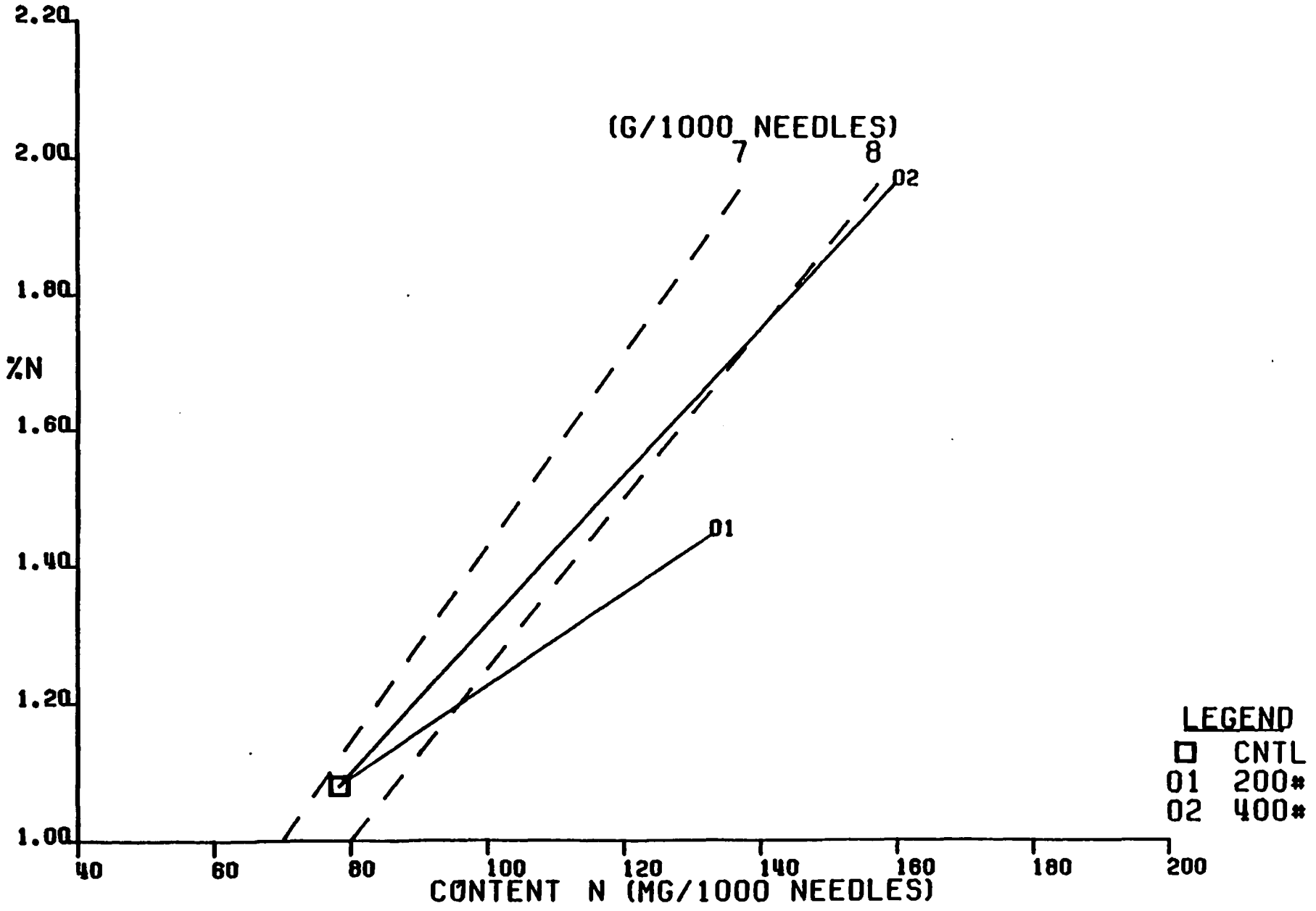

(G/1000 NEEDLES)
5
6
7
02
01
%N
2.00
1.80
1.60
1.40
1.20
1.00
0.80
20
40
60
80
100
120
140
160
180
CONTENT N (MG/1000 NEEDLES)
LEGEND
CNTL
01 200#
02 400#


236 DEER CR.
(G/1000 NEEDLES)
115
%N
1.80
1.70
1.60
1.50
1.40
1.30
1.20
5
6
02
01
64
72
80
88
96
104
112
120
128
CONTENT N (MG/1000 NEEDLES)
LEGEND
CNTL
01 200#
02 400#

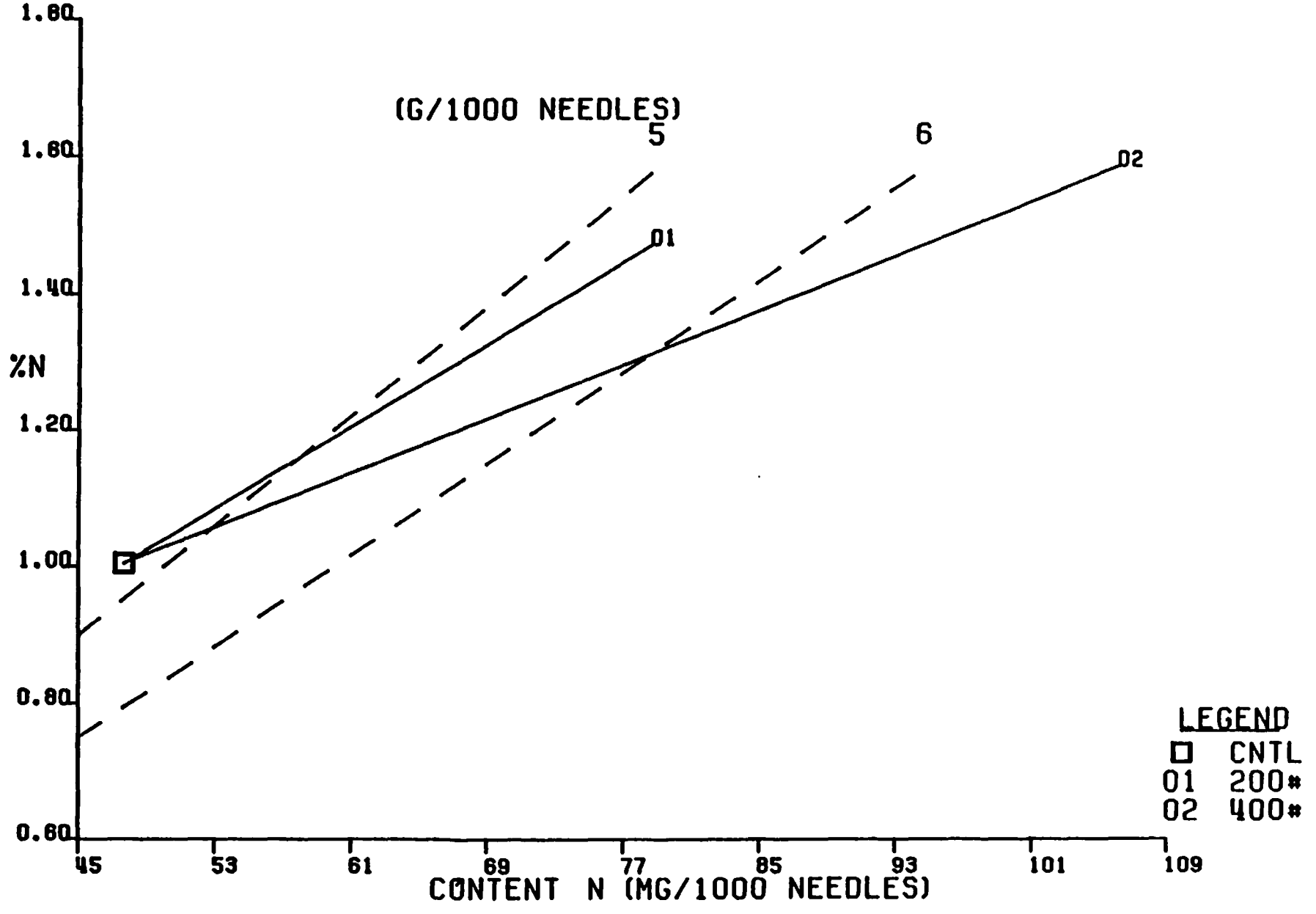
237 MØLLET PARK

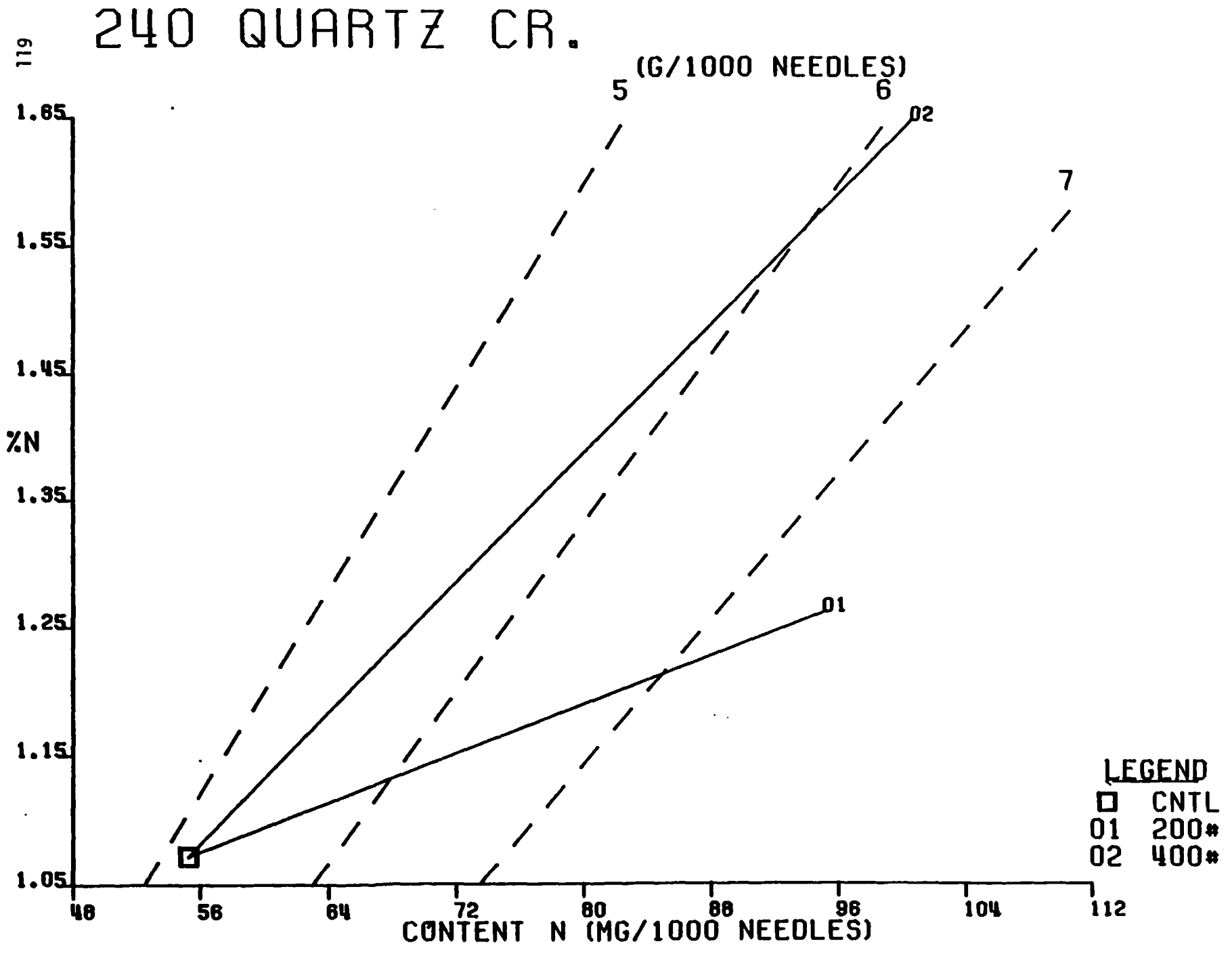


238 BUFFALO BILL CR.

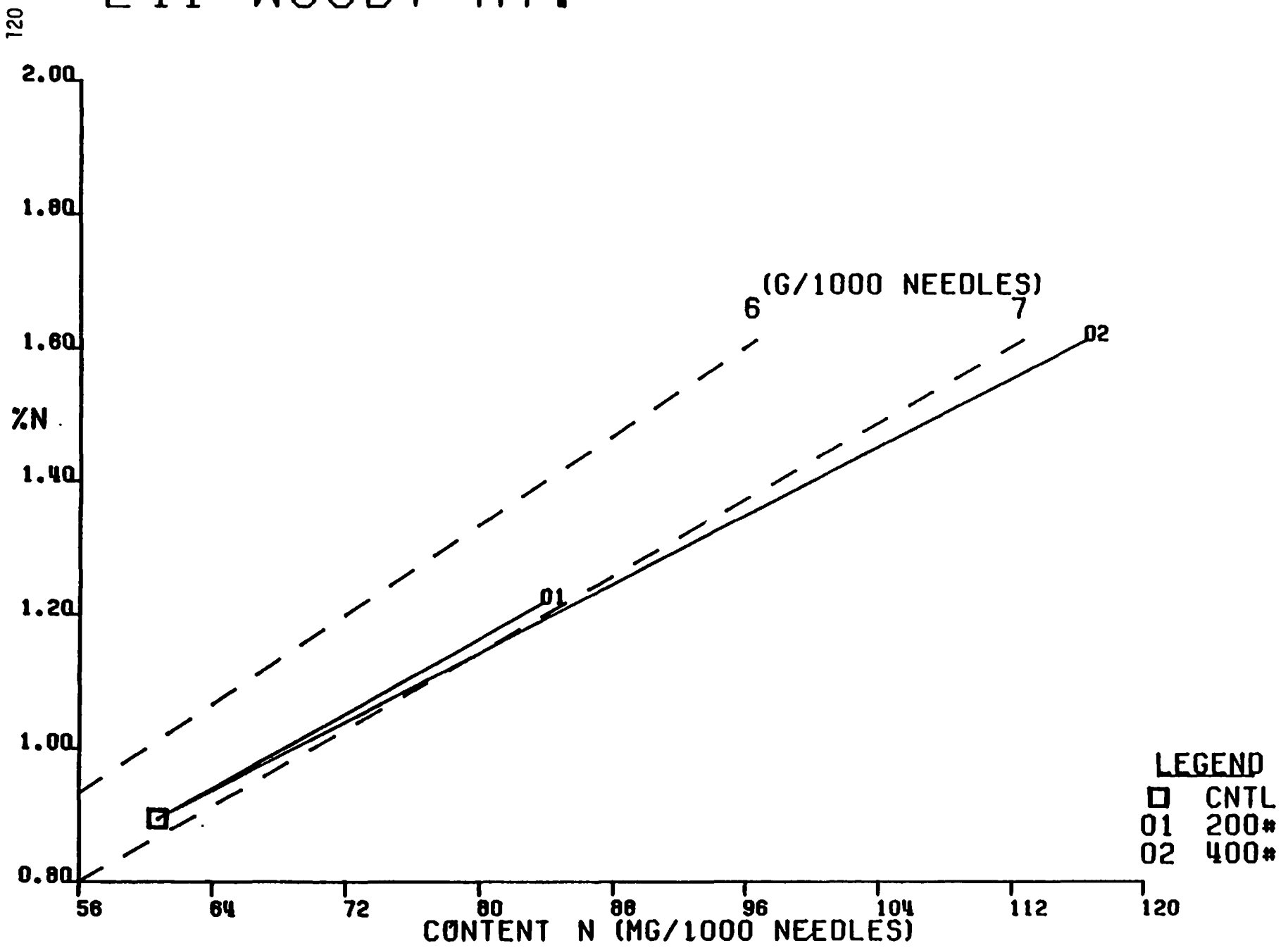


239 WAHA #2

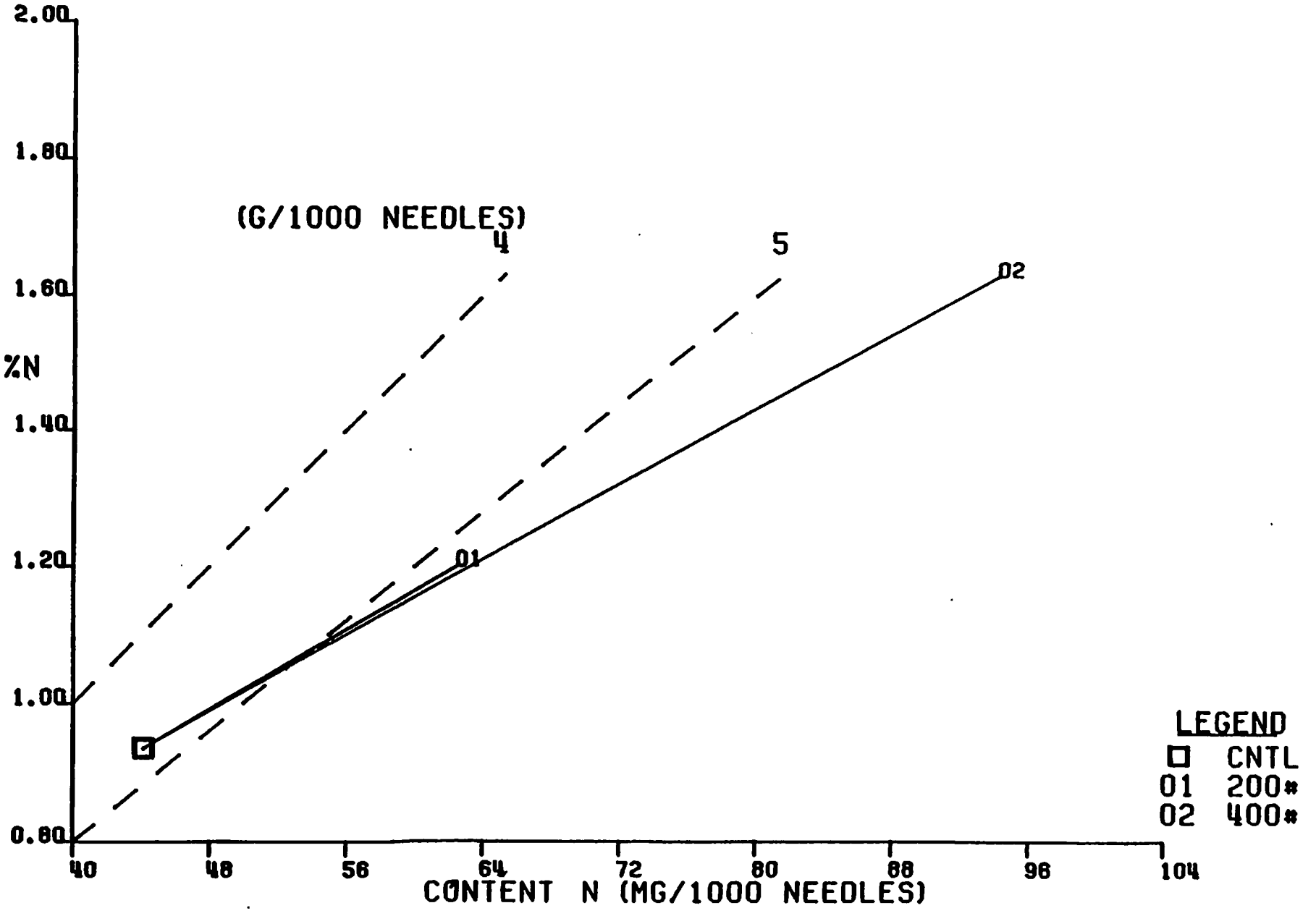

(G/1000 NEEDLES)
5
6
D2
D1
%N
1.80
1.60
1.40
1.20
1.00
0.80
0.60
45
53
61
69
77
85
93
101
109
CONTENT N (MG/1000 NEEDLES)
LEGEND
CNTL
01 200#
02 400#


240 QUARTZ CR.
119
(G/1000 NEEDLES)
5
6
7
02
01
1.65
1.55
1.45
%N
1.35
1.25
1.15
1.05
48
56
64
72
80
88
96
104
112
CONTENT N (MG/1000 NEEDLES)
LEGEND
CNTL
01 200#
02 400#

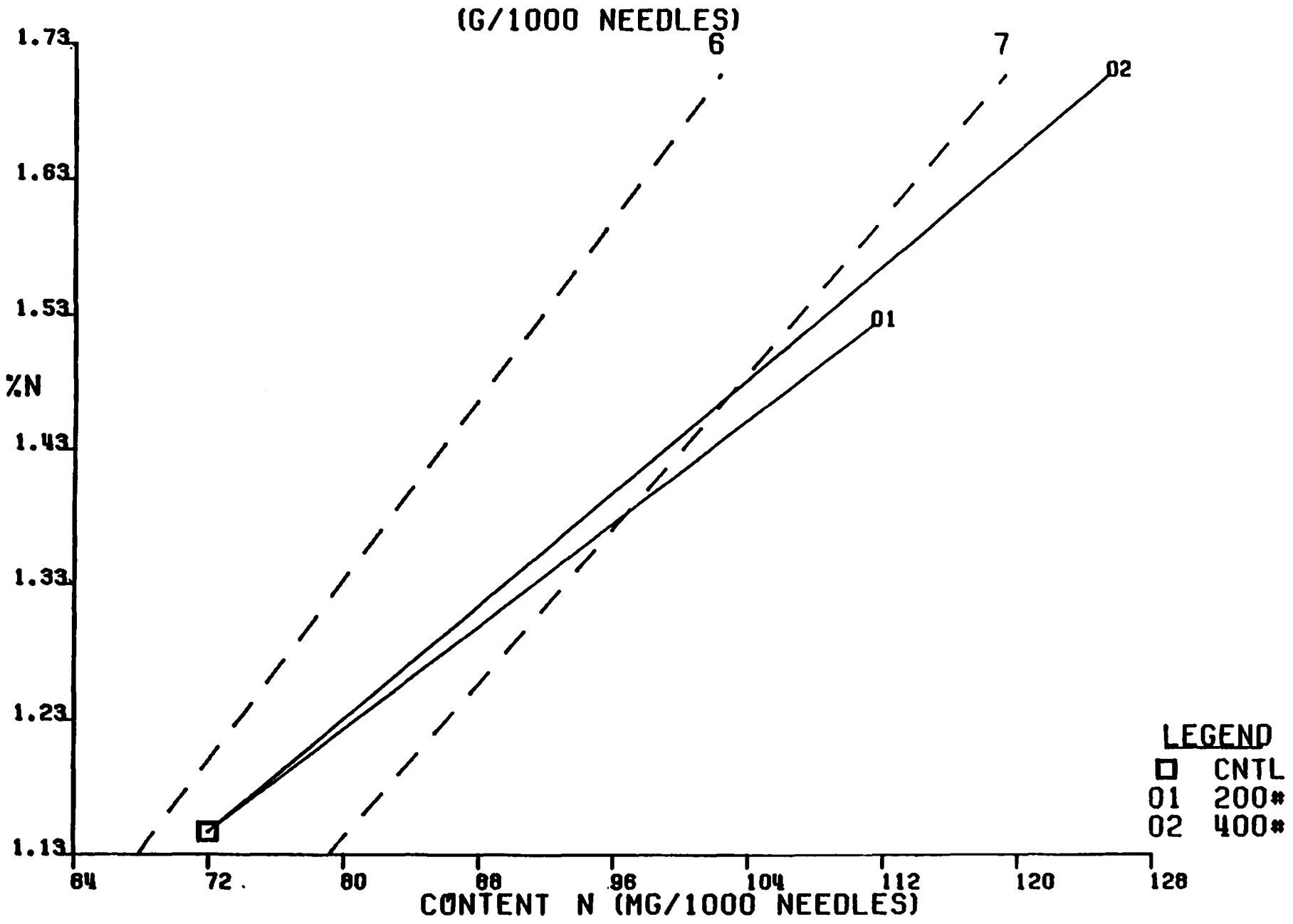
241 WØØDY MT.


120
2.00
1.80
1.60
%N
1.40
1.20
1.00
0.80
(G/1000 NEEDLES)
6
7
02
01
LEGEND
CNTL
01 200#
02 400#
56
64
72
80
88
96
104
112
120
CØNTENT N (MG/1000 NEEDLES)

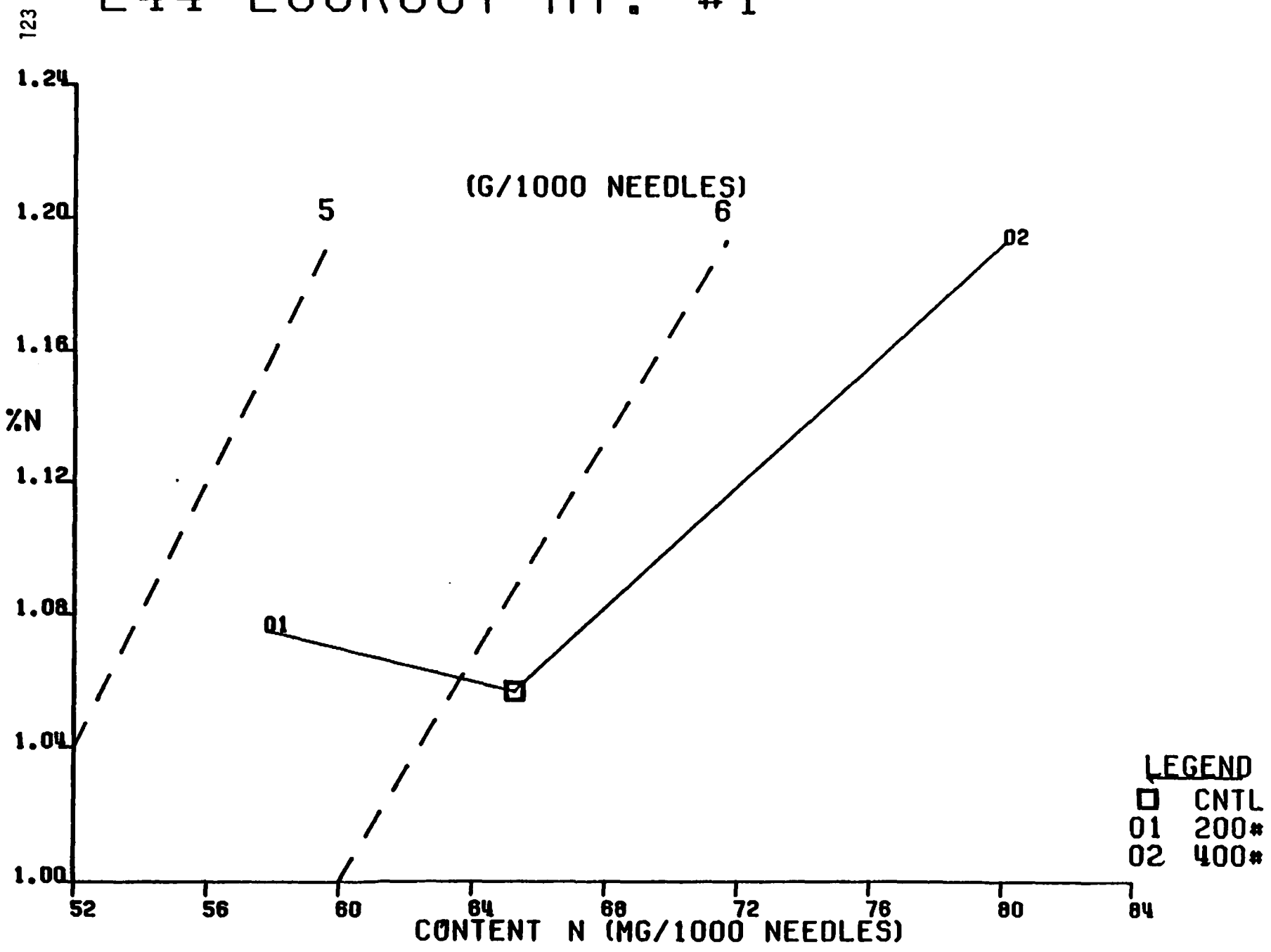
242 N.F. NINEMILE CR.



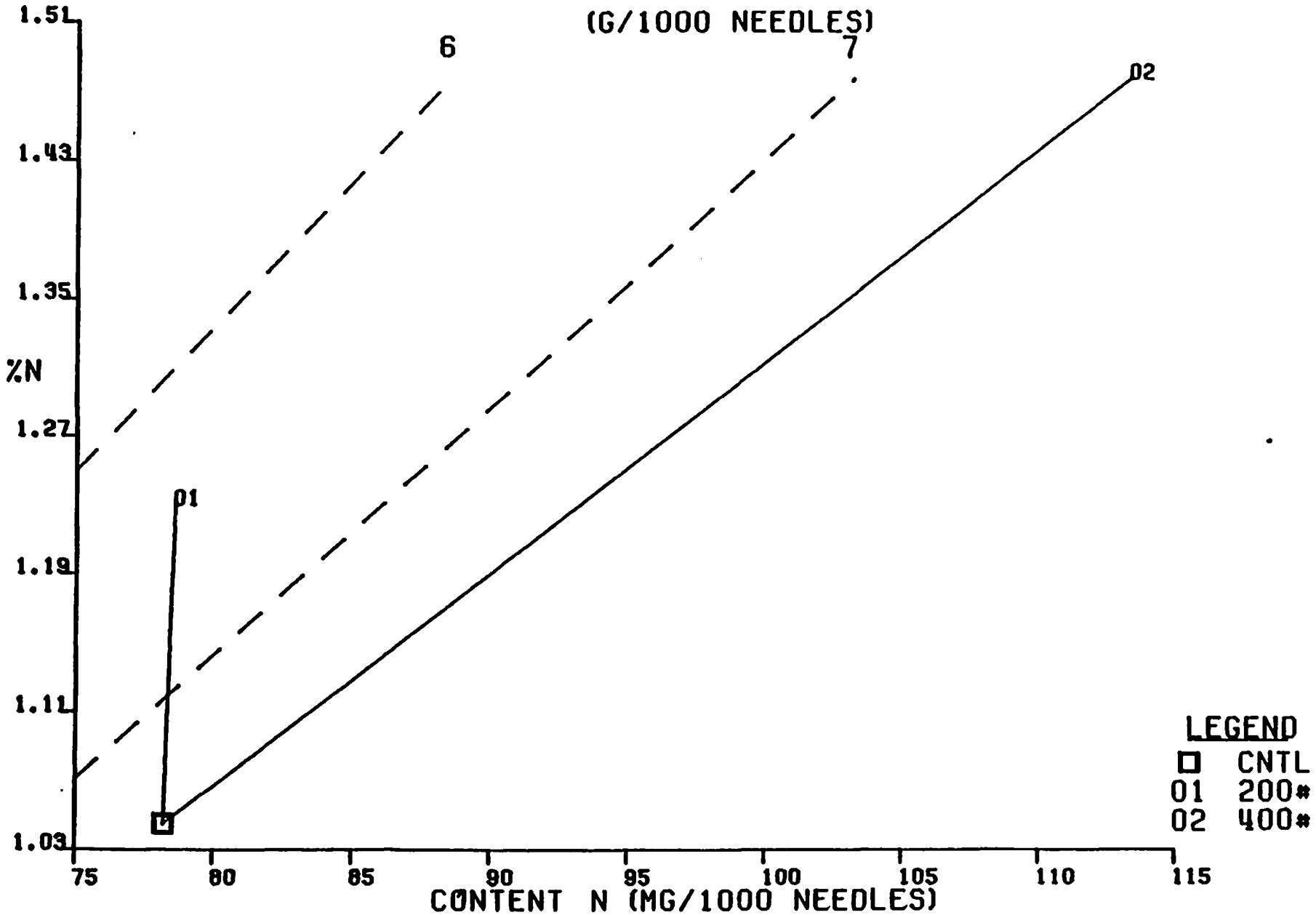
243 STARVATION LAKE



244 LOOKOUT MT. #1



245 LOOKOUT MT. #2



"Weetman" Type II graphs showing change in needle weight and relative foliar concentrations for nine other nutrients for the 1981 installations.

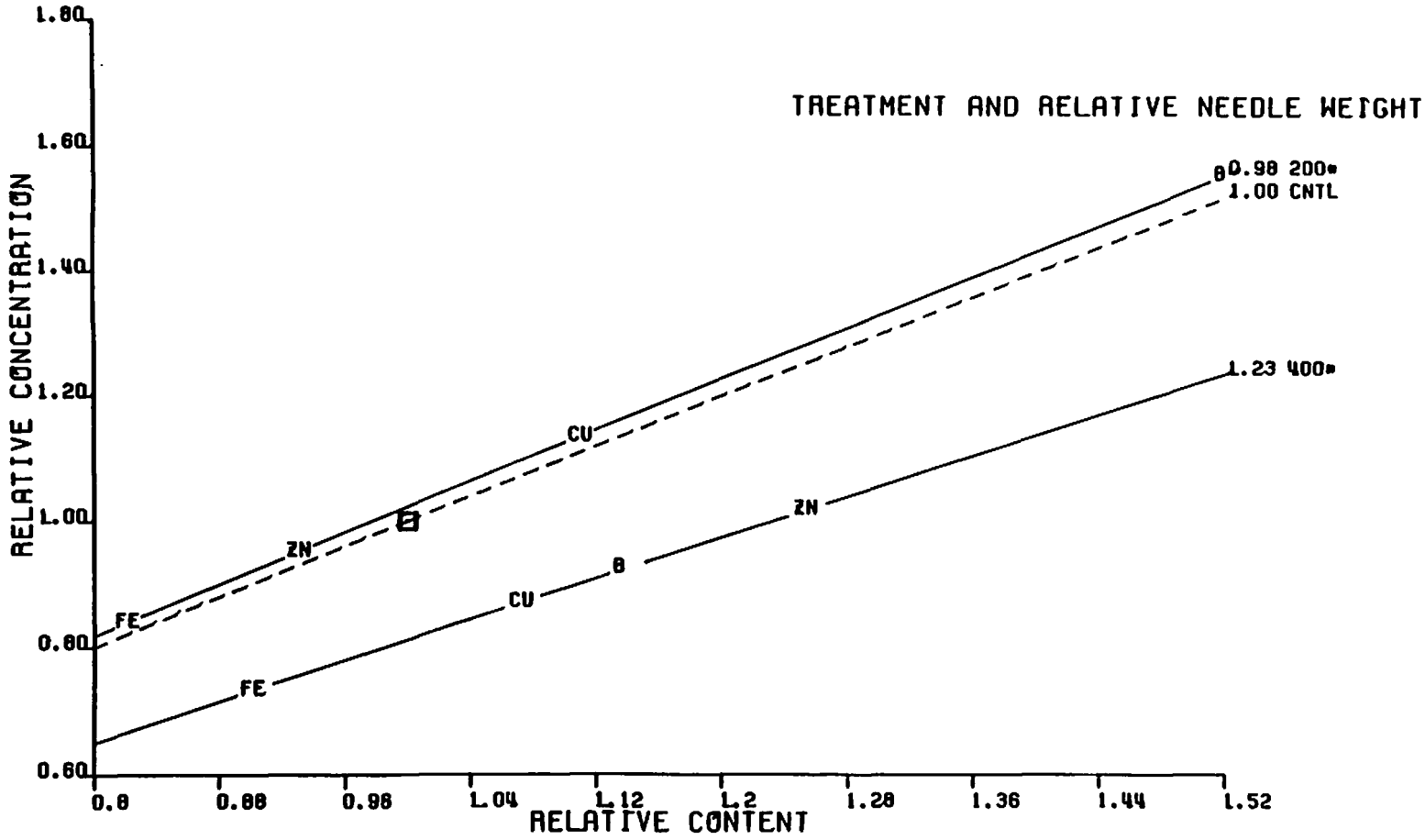
The type I and II graphs display and compare yield response of foliar nutrition to fertilizer treatments. The Type I graphs model foliar nutrition response and yield response in terms of an individual foliar nutrient. If several different foliar nutrients are considered in the control samples, then needle weight will be the same for each nutrient but concentration and content will differ. This results in a separate control point for each nutrient being defined. Multiple control points makes diagnosis of interactions between various foliar nutrients difficult.

To facilitate the comparison of nutrients within and between treatments, the foliar nutrient contents, concentrations, and needle weights for each treatment are transformed into a percentage of their respective control values. All control points become 100 percent (or 1.0) scaled in this manner. When these data are plotted, the reaction of various foliar nutrients to a treatment may be easily compared as the reaction vectors originate from a common control point.

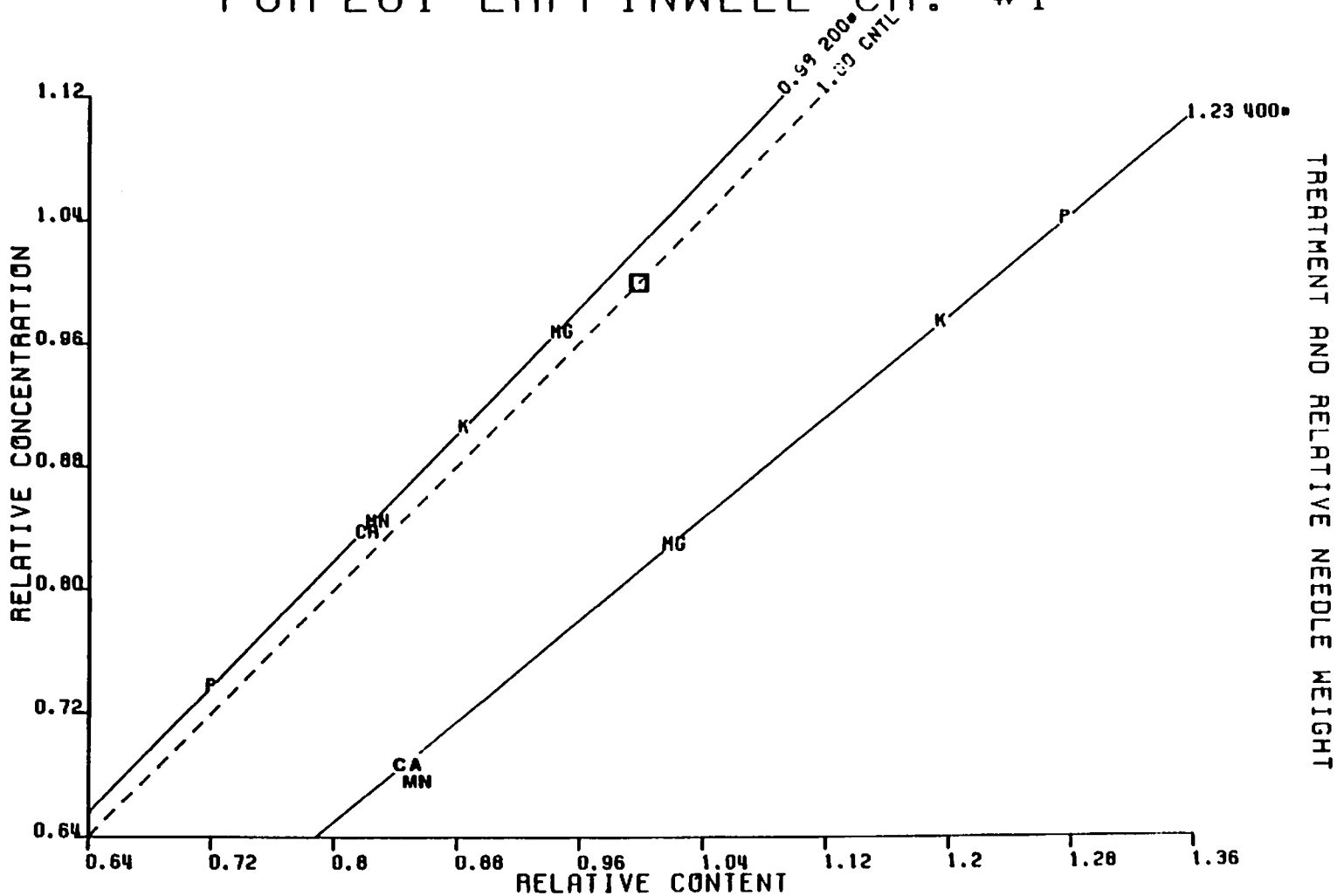
The square box depicted in the graph then is the scaled control point from which to compare treatment response for each nutrient. The control point will always have a value of 1.0 for needle weight, concentration and content. Therefore, any treatment resulting in values greater than 1.0 for any of these measures represents an increase over the control for that measure. Similarly a value less than 1.0 represents a decrease from the control value for that measure.

The interpretation of responses in the Type II analysis is the same as in the Type I analysis. Although the data have been rescaled, the relative relationships between treatment and control points remain the same.

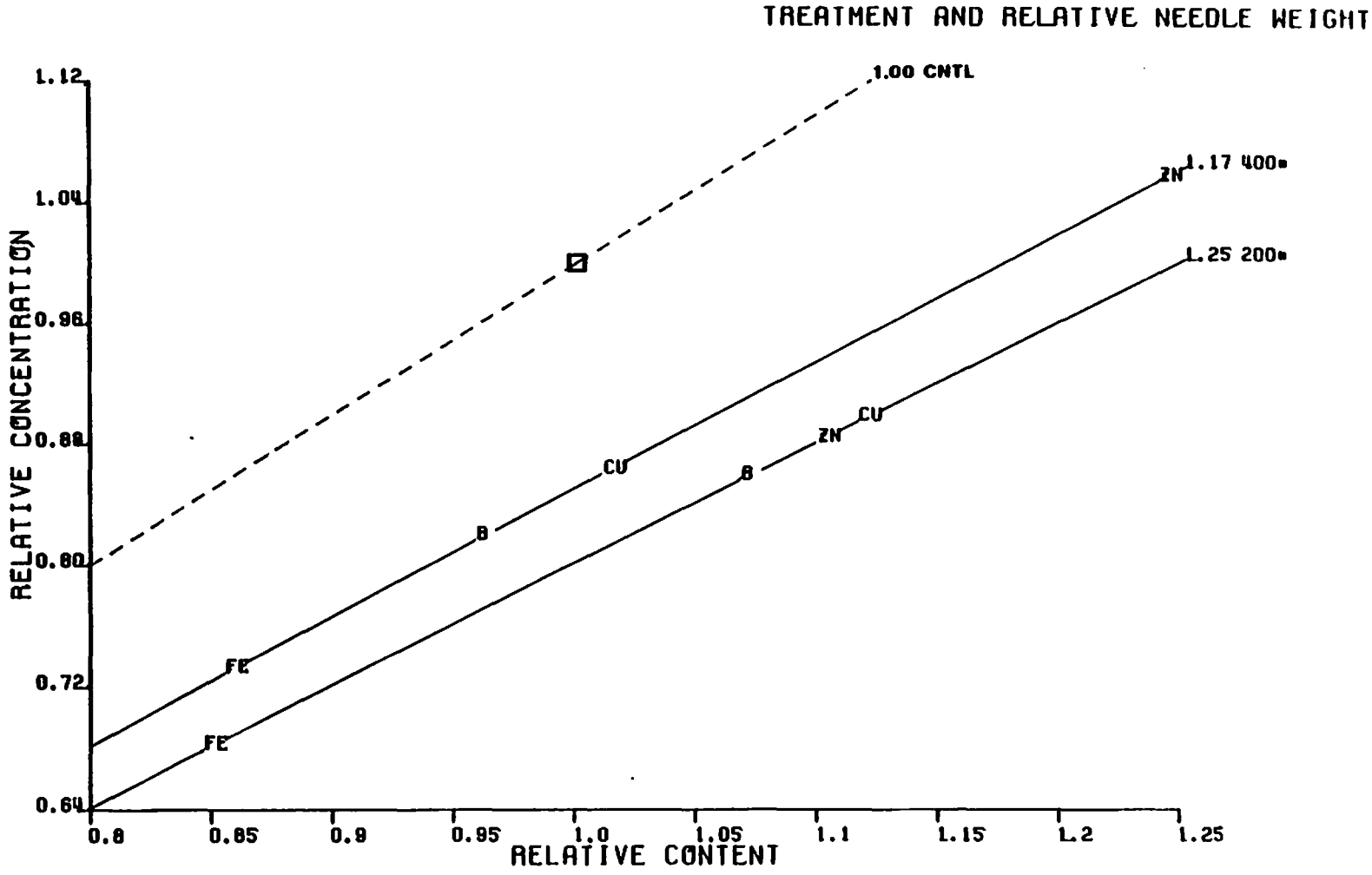
RELATIVE NUTRIENT RESPONSE FOR 201 LAFFINWELL CR. #1



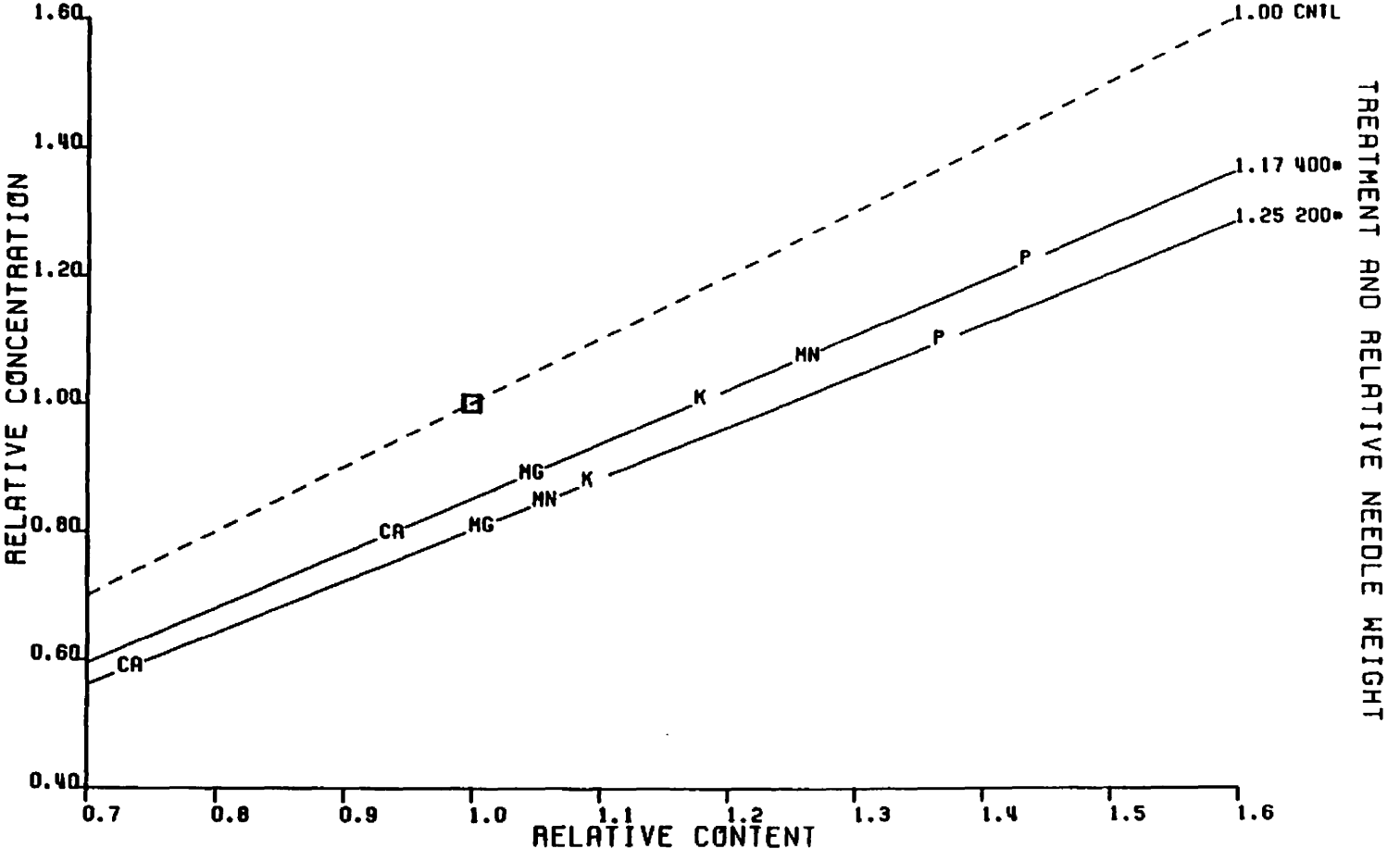
RELATIVE NUTRIENT RESPØNSE FØR 201 LAFFINWELL CR. #1



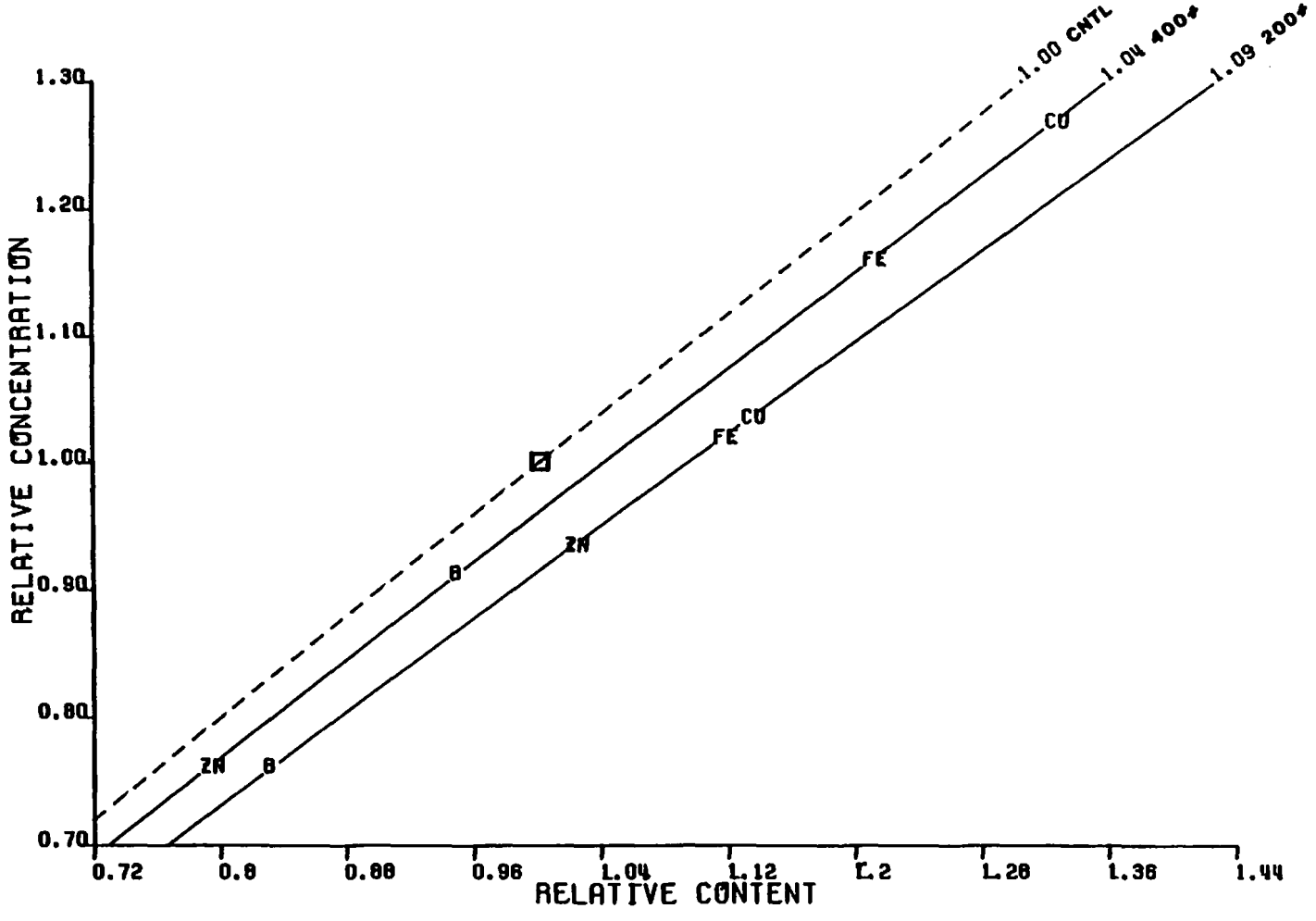
RELATIVE NUTRIENT RESPONSE FOR 202 HORSETHIEF BASIN



RELATIVE NUTRIENT RESPØNSE FØR 202 HØRSETHIEF BASIN

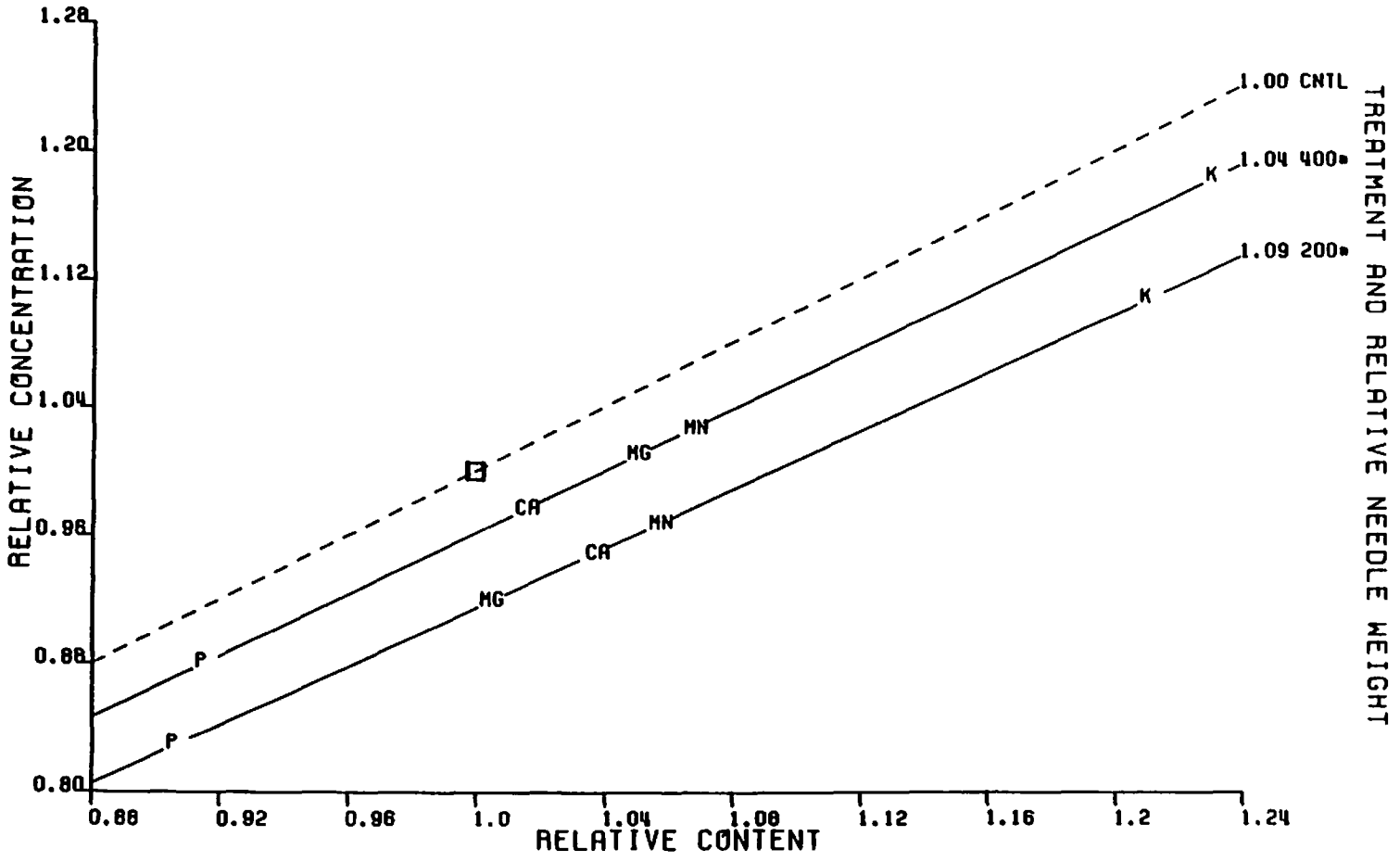


RELATIVE NUTRIENT RESPØNSE FØR 203 LAFFINWELL CR. #2

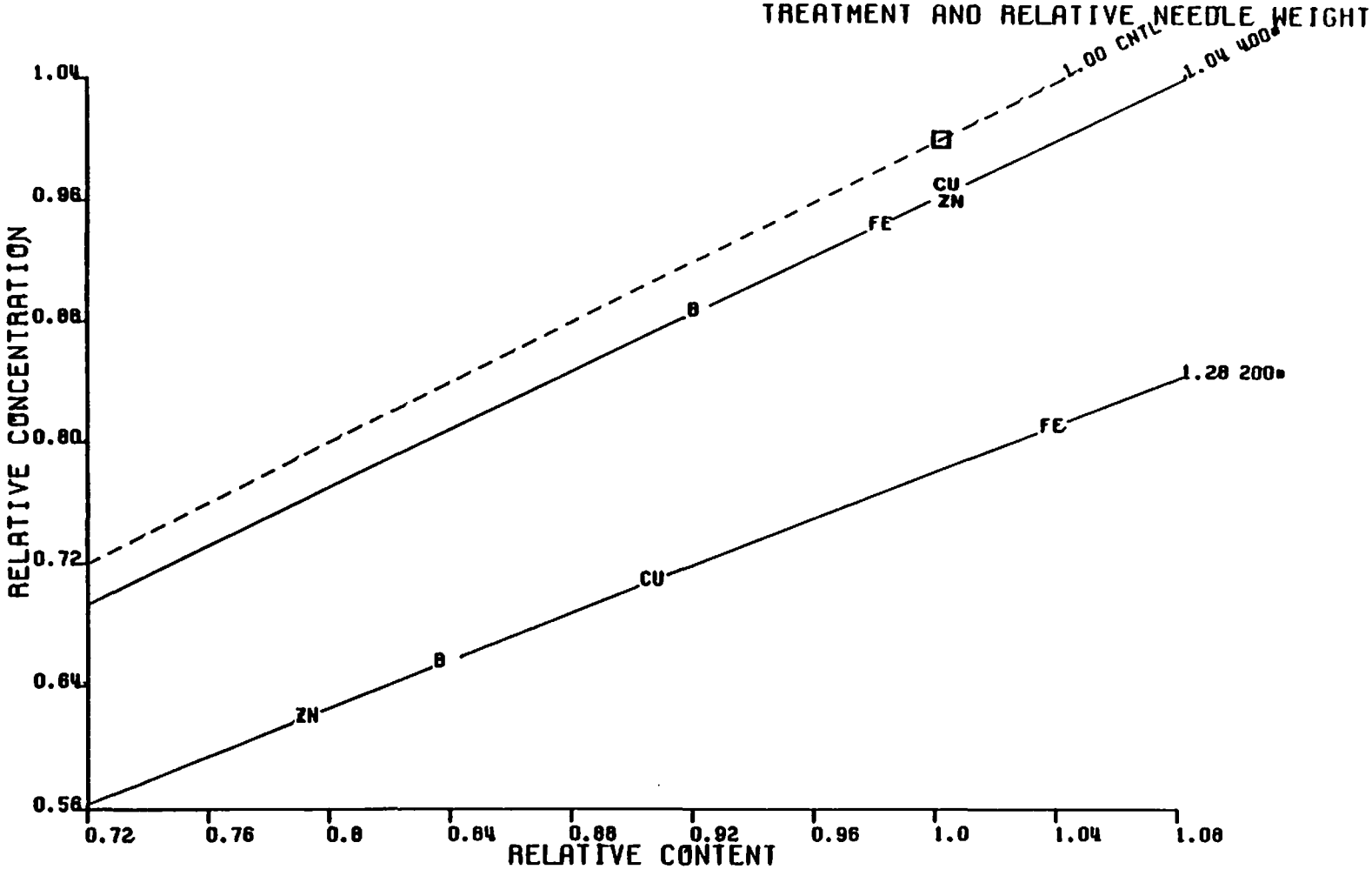


TREATMENT AND RELATIVE NEEDLE WEIGHT

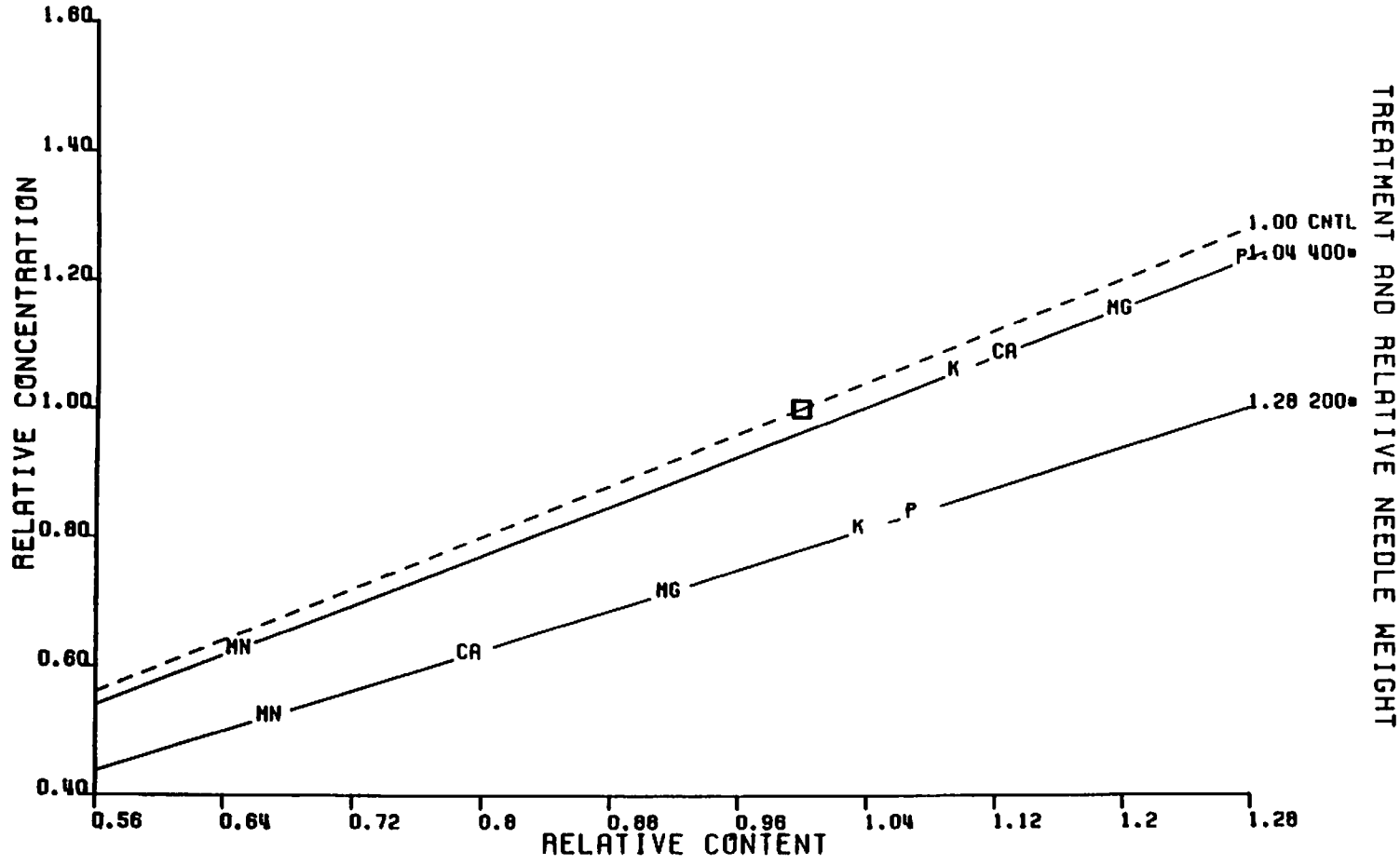
RELATIVE NUTRIENT RESPONSE FOR 203 LAFFINWELL CR. #2



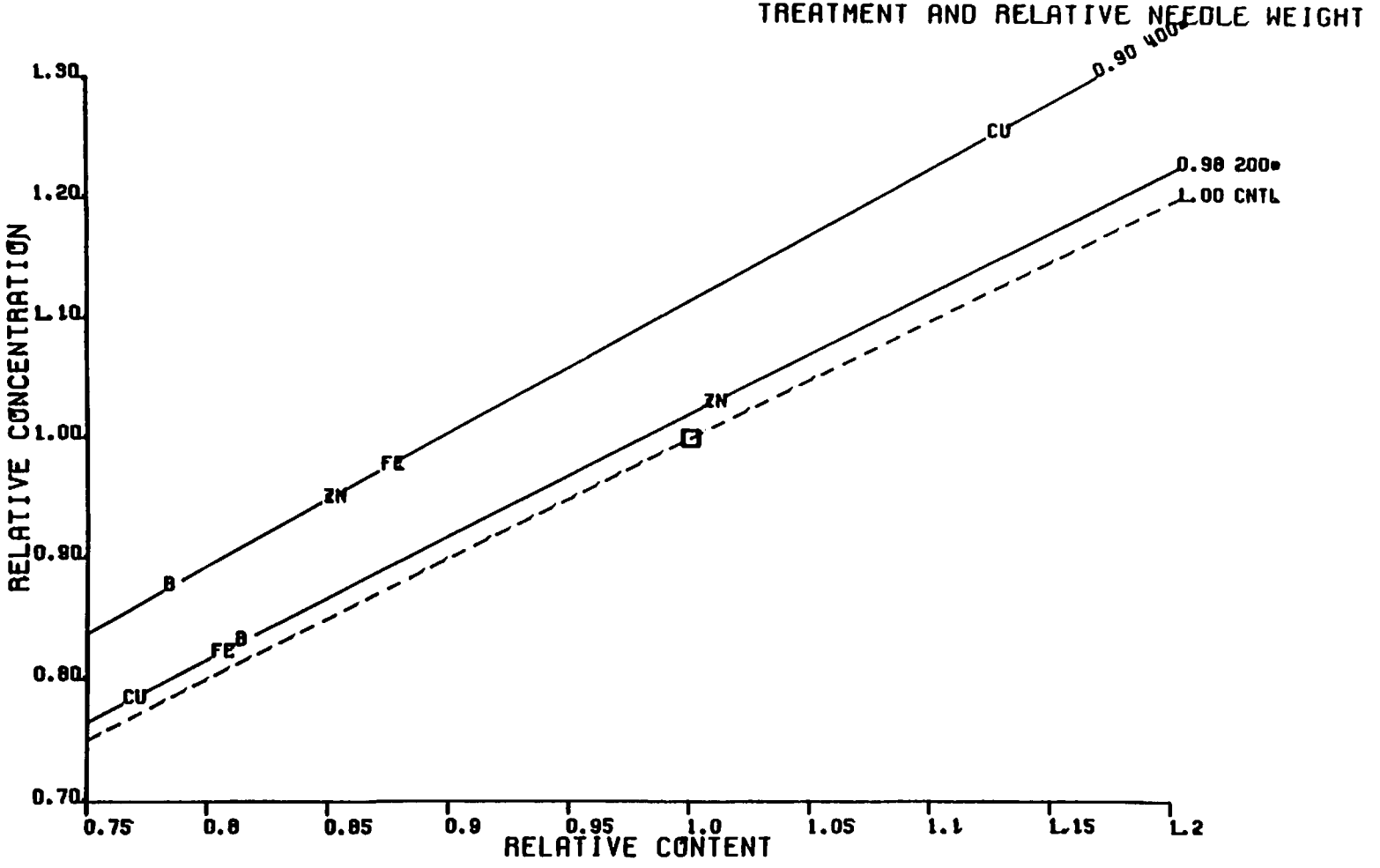
RELATIVE NUTRIENT RESPONSE FOR 204 JOHNSON MILL #1



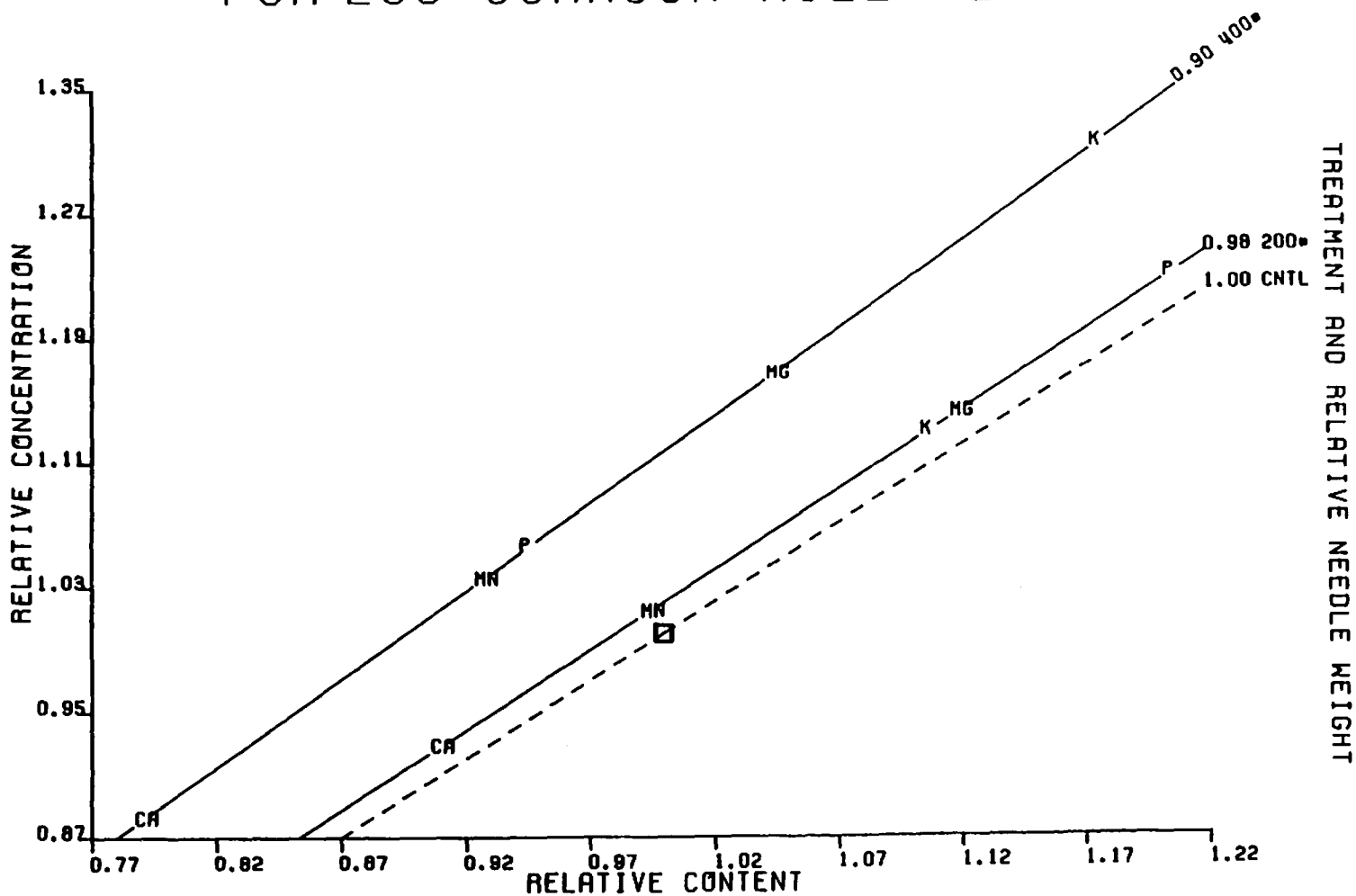
RELATIVE NUTRIENT RESPØNSE FØR 204 JØHNSØN MILL #1



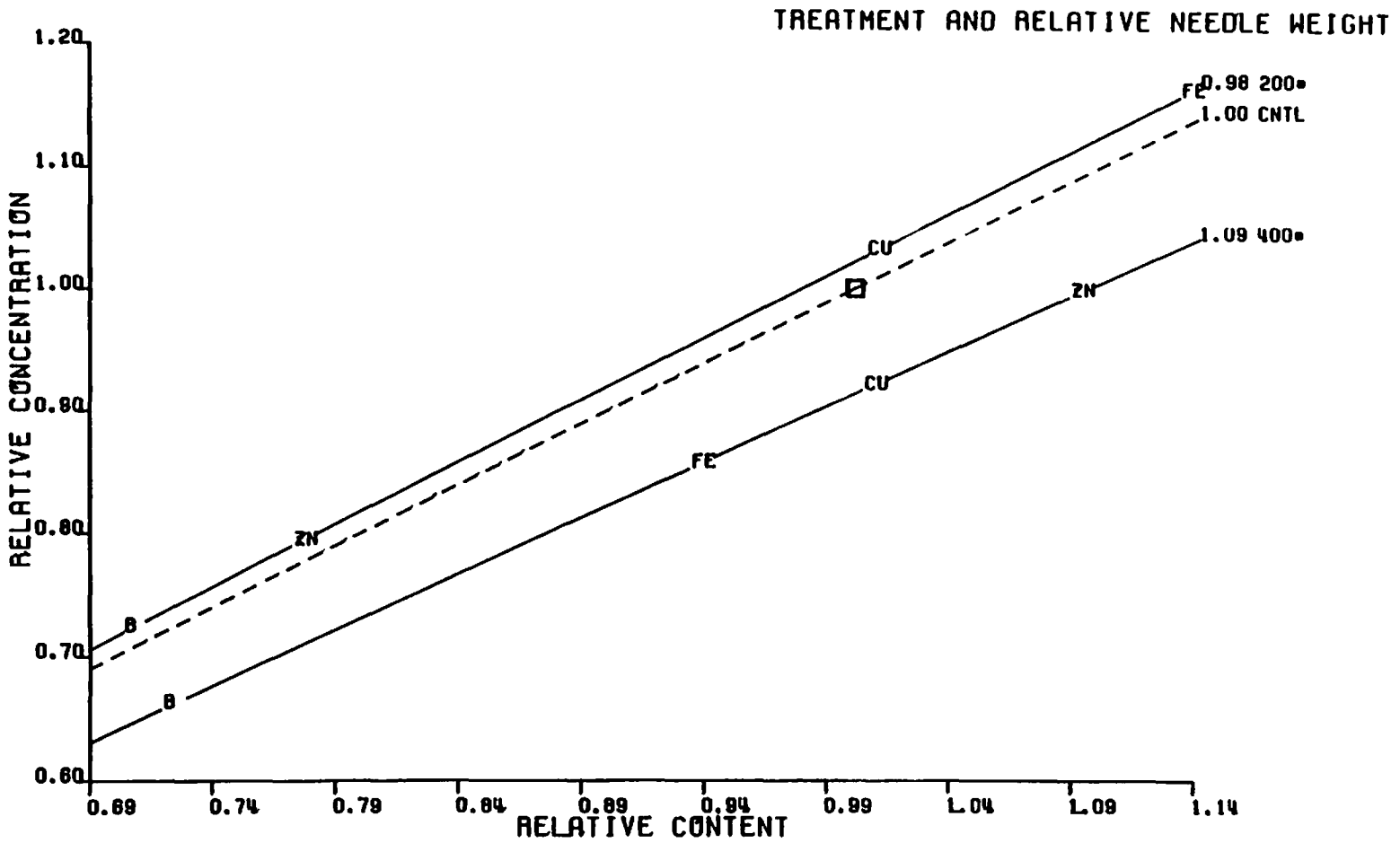
RELATIVE NUTRIENT RESPONSE FOR 205 JOHNSON MILL #2



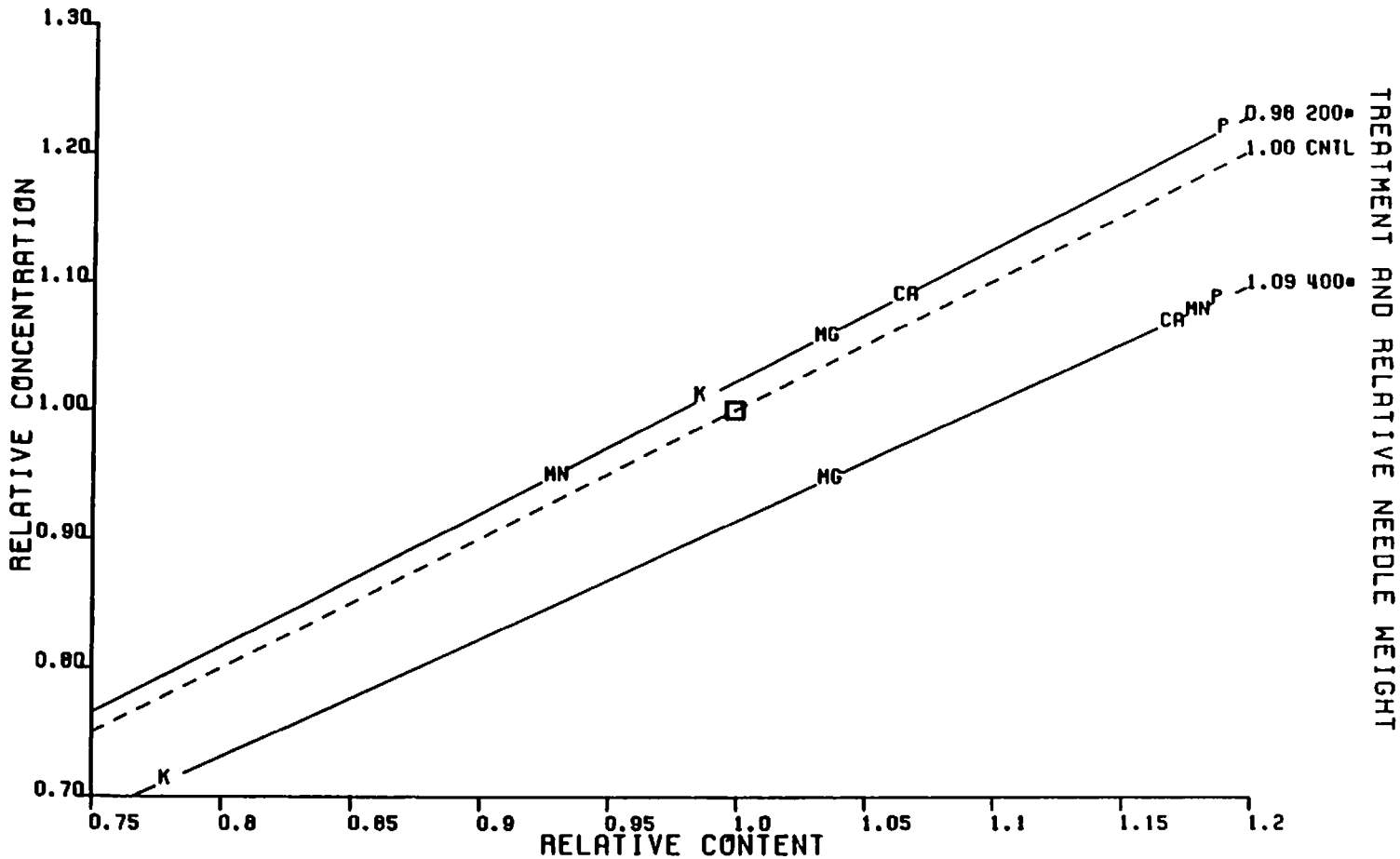
RELATIVE NUTRIENT RESPONSE FOR 205 JOHNSON MILL #2



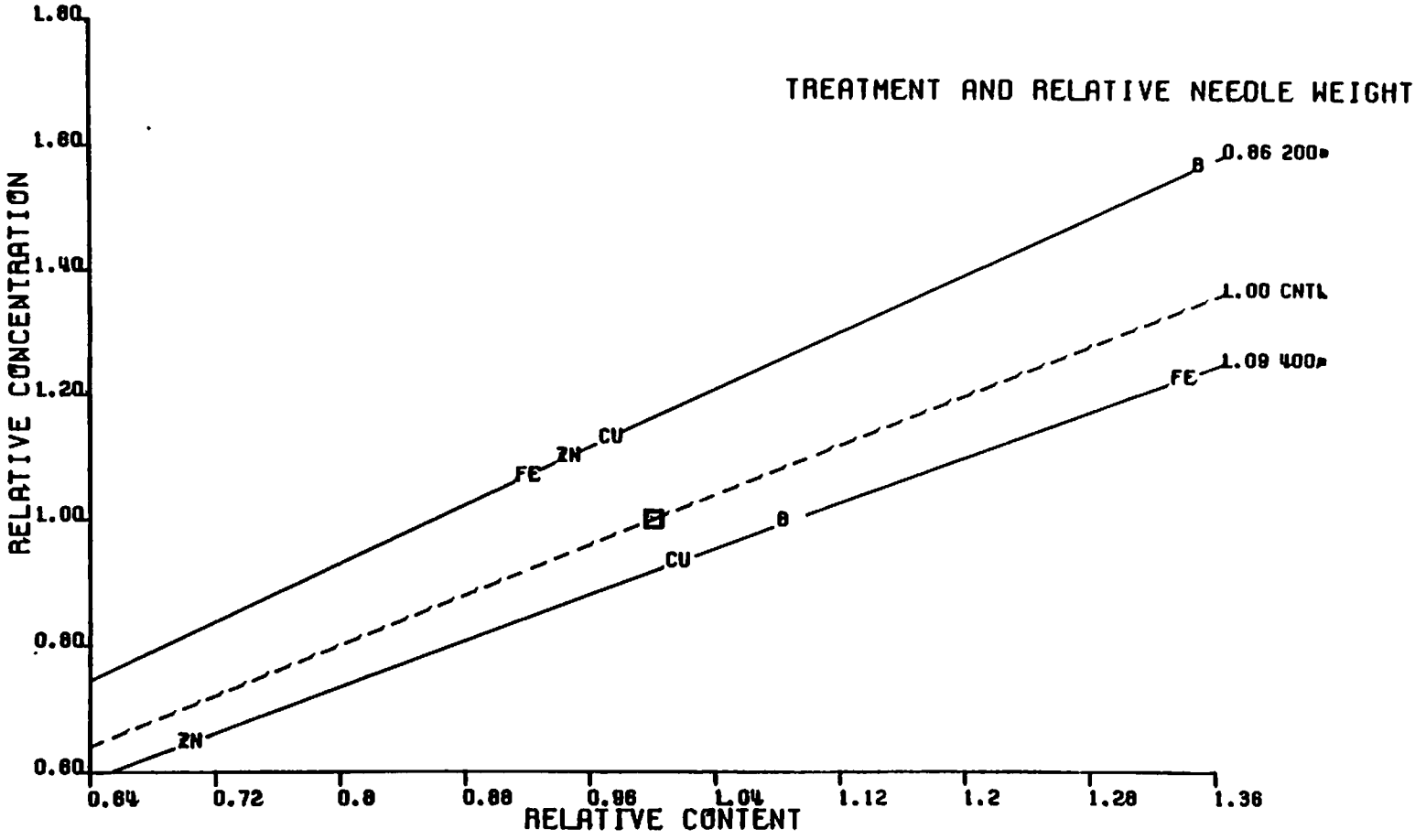
RELATIVE NUTRIENT RESPØNSE FØR 206 CARIBEL #2



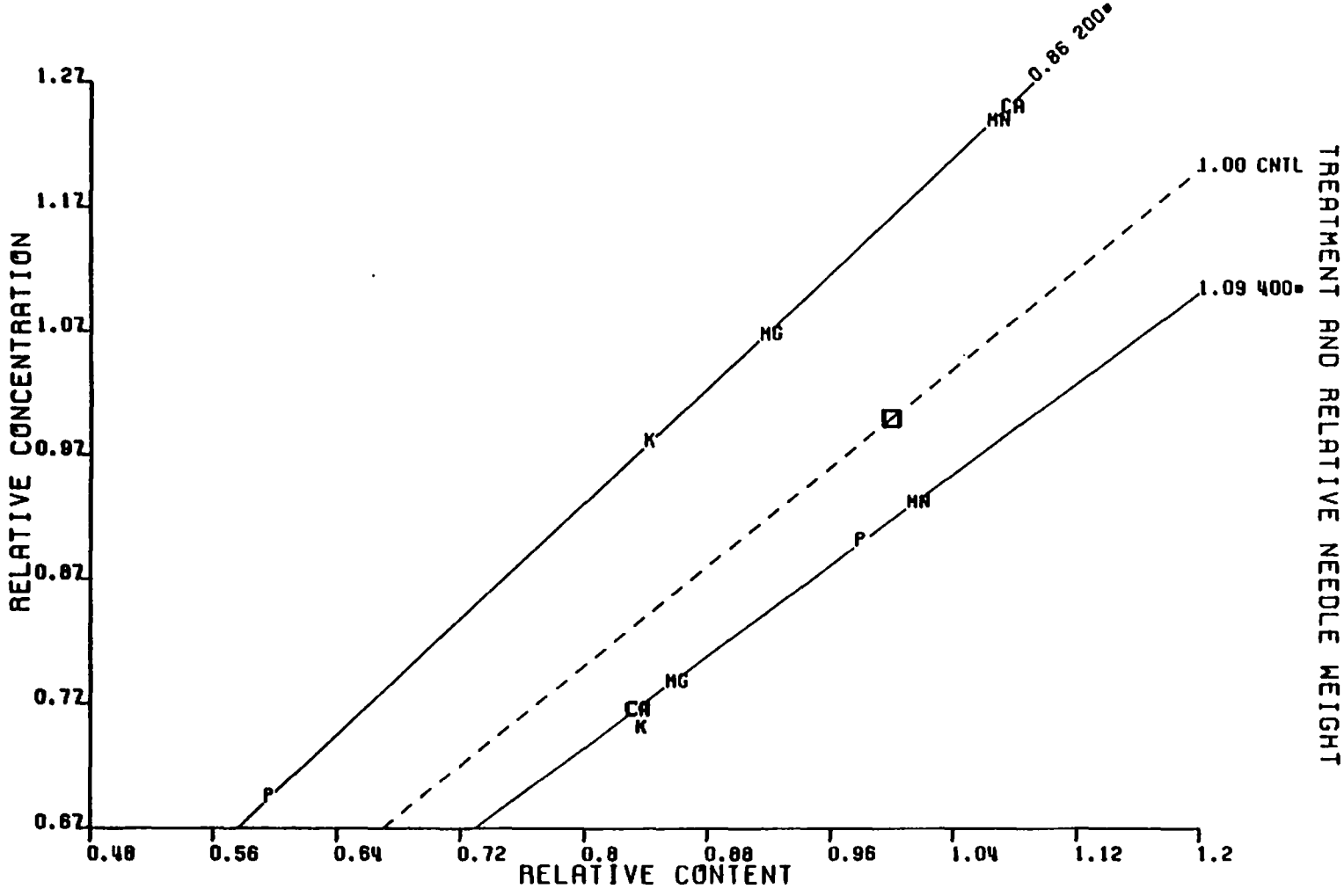
RELATIVE NUTRIENT RESPONSE FOR 206 CARIBEL #2



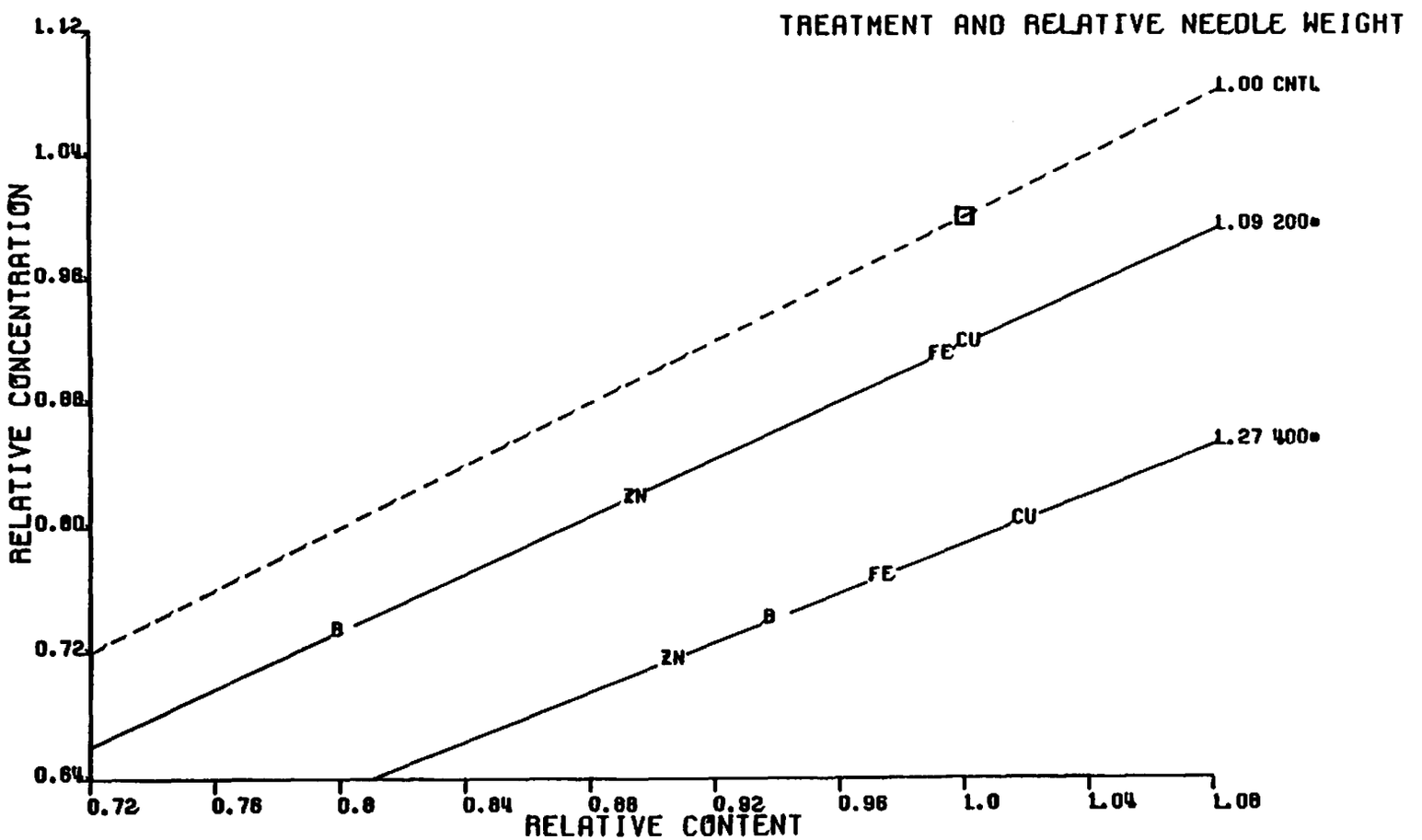
RELATIVE NUTRIENT RESPØNSE FØR 207 WAHA #1



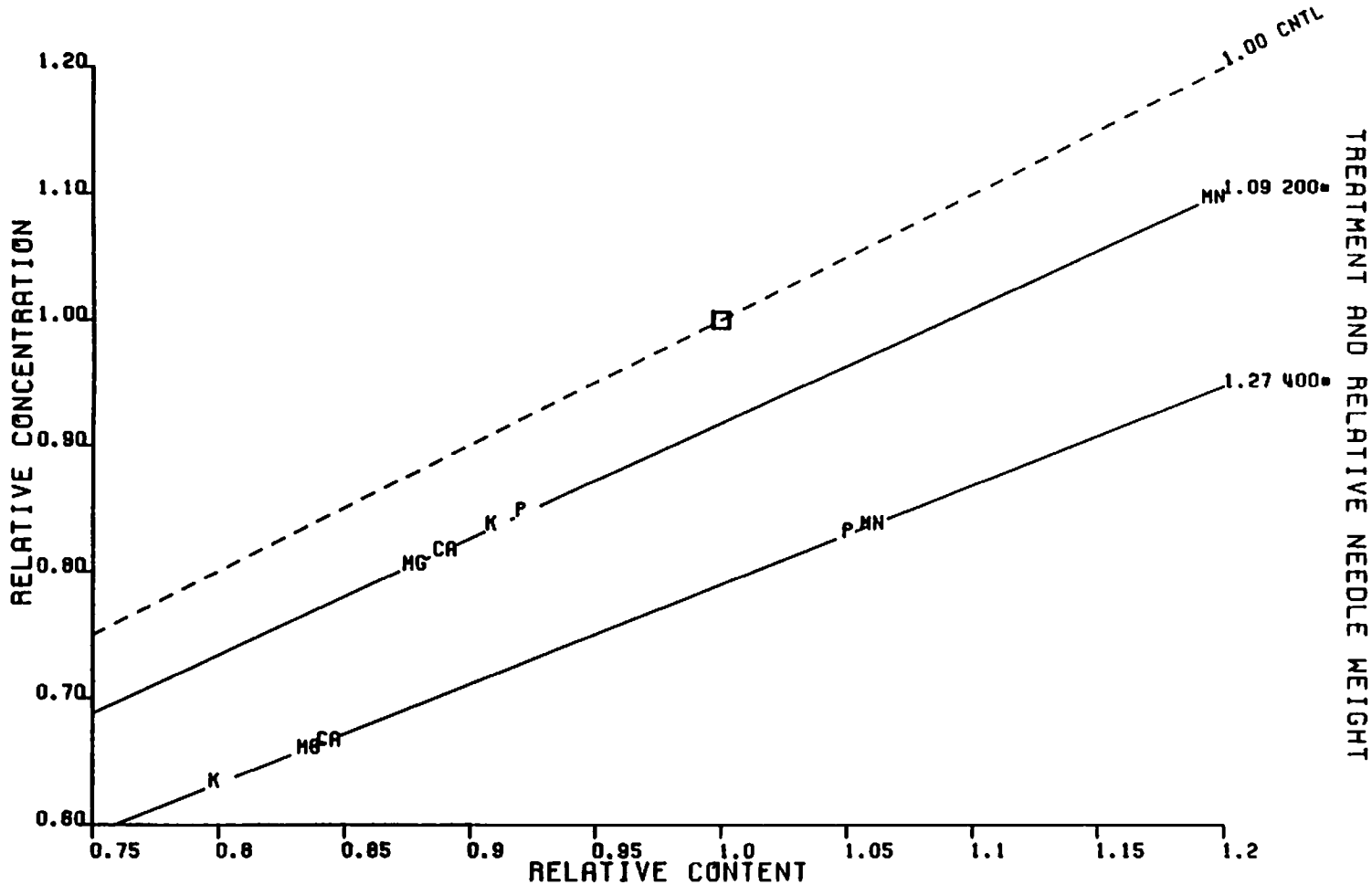
RELATIVE NUTRIENT RESPONSE FOR 207 WAHA #1



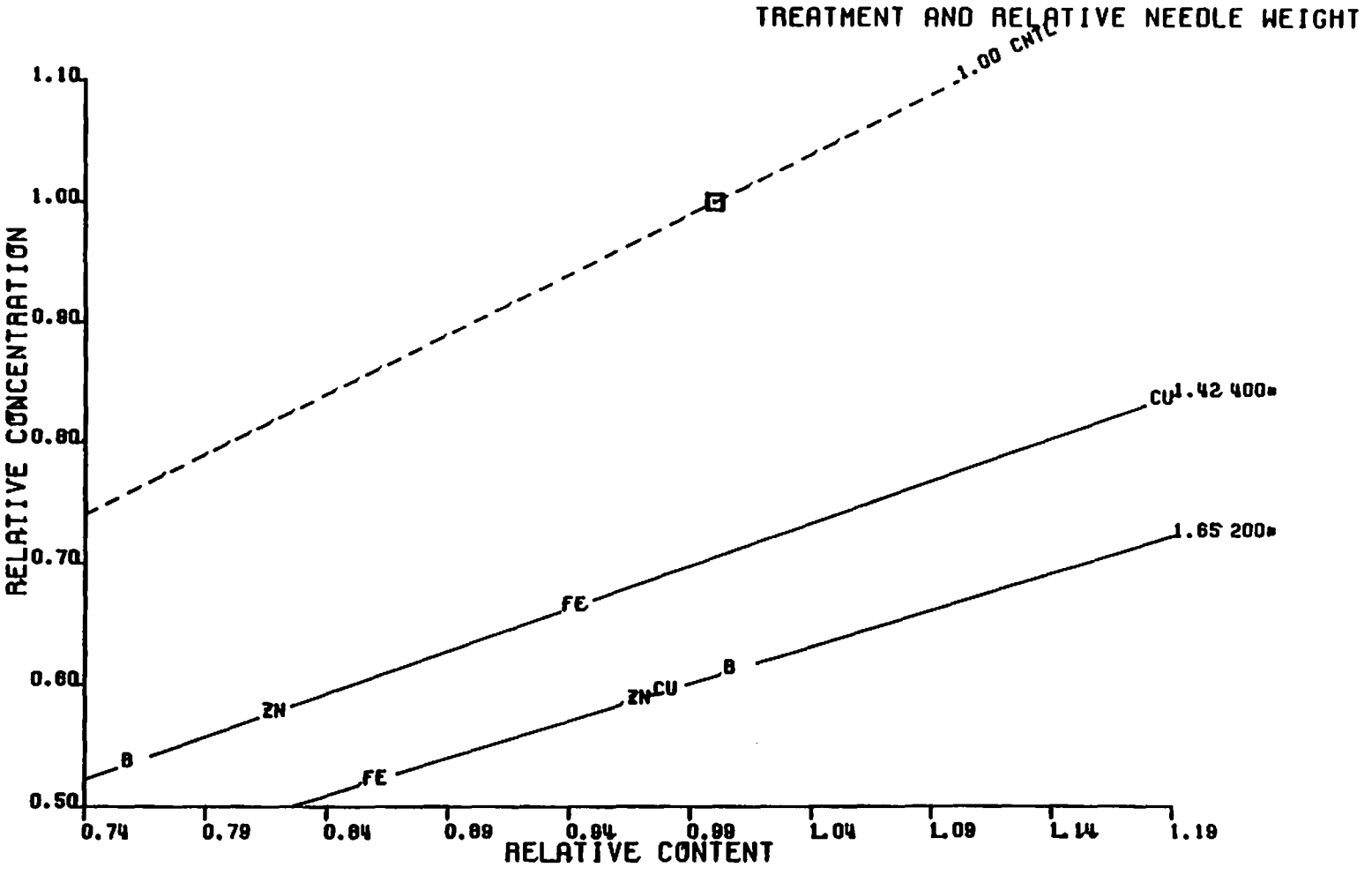
RELATIVE NUTRIENT RESPØNSE FØR 208 LØVELL VALLEY RD.



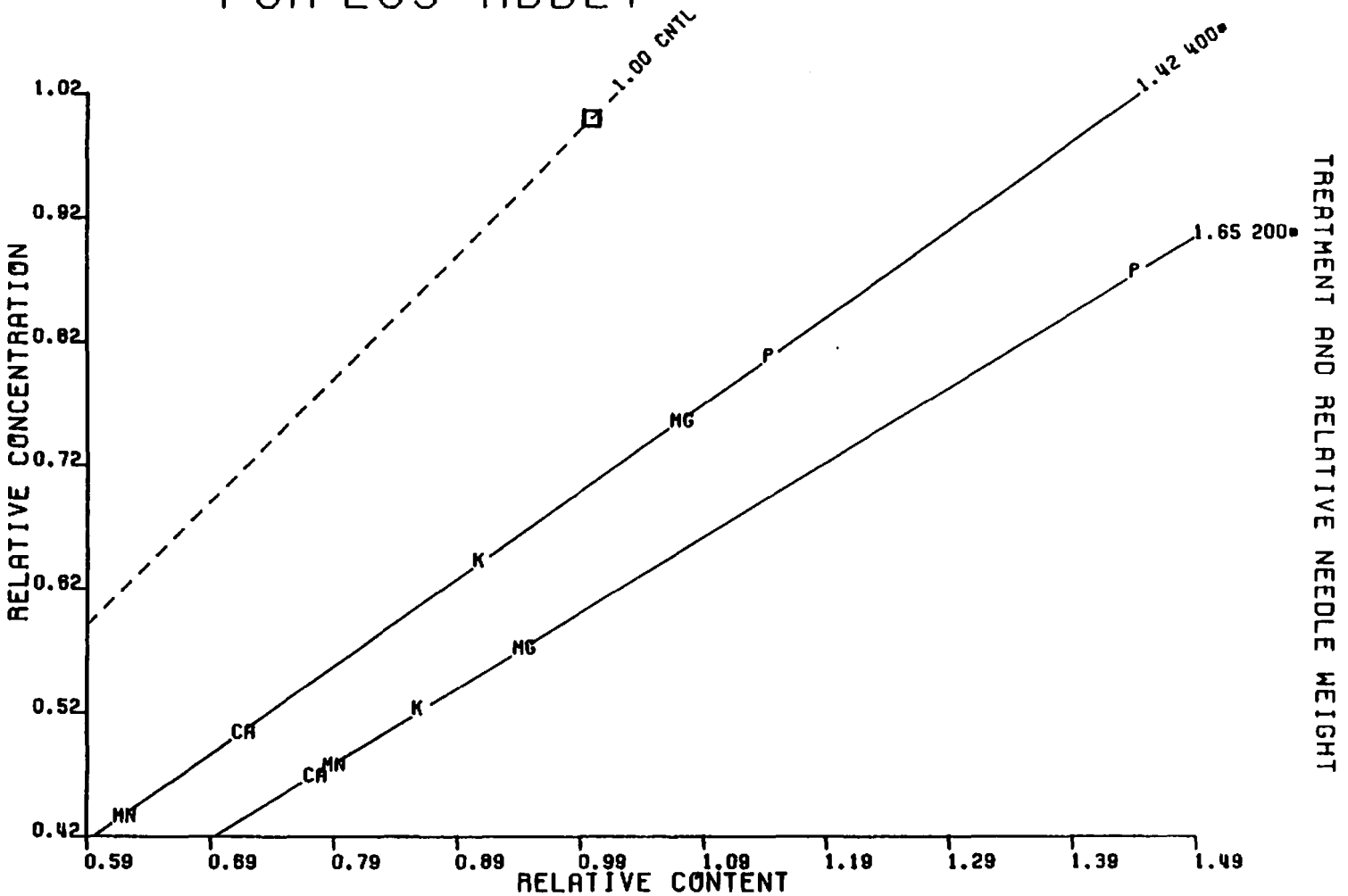
RELATIVE NUTRIENT RESPONSE FOR 208 LOVELL VALLEY RD.



RELATIVE NUTRIENT RESPONSE FOR 209 ADDEY

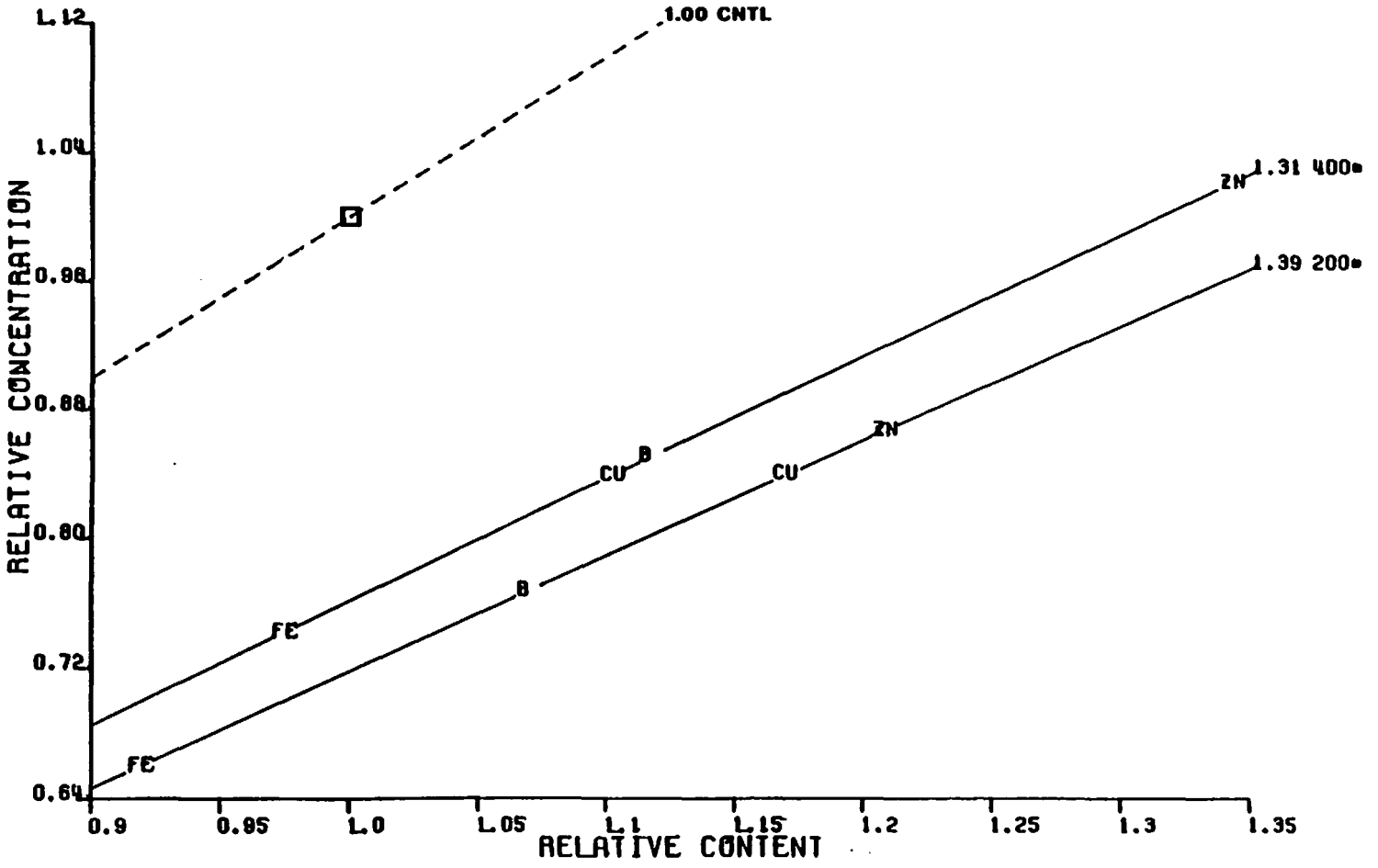


RELATIVE NUTRIENT RESPØNSE FØR 209 ADDEY

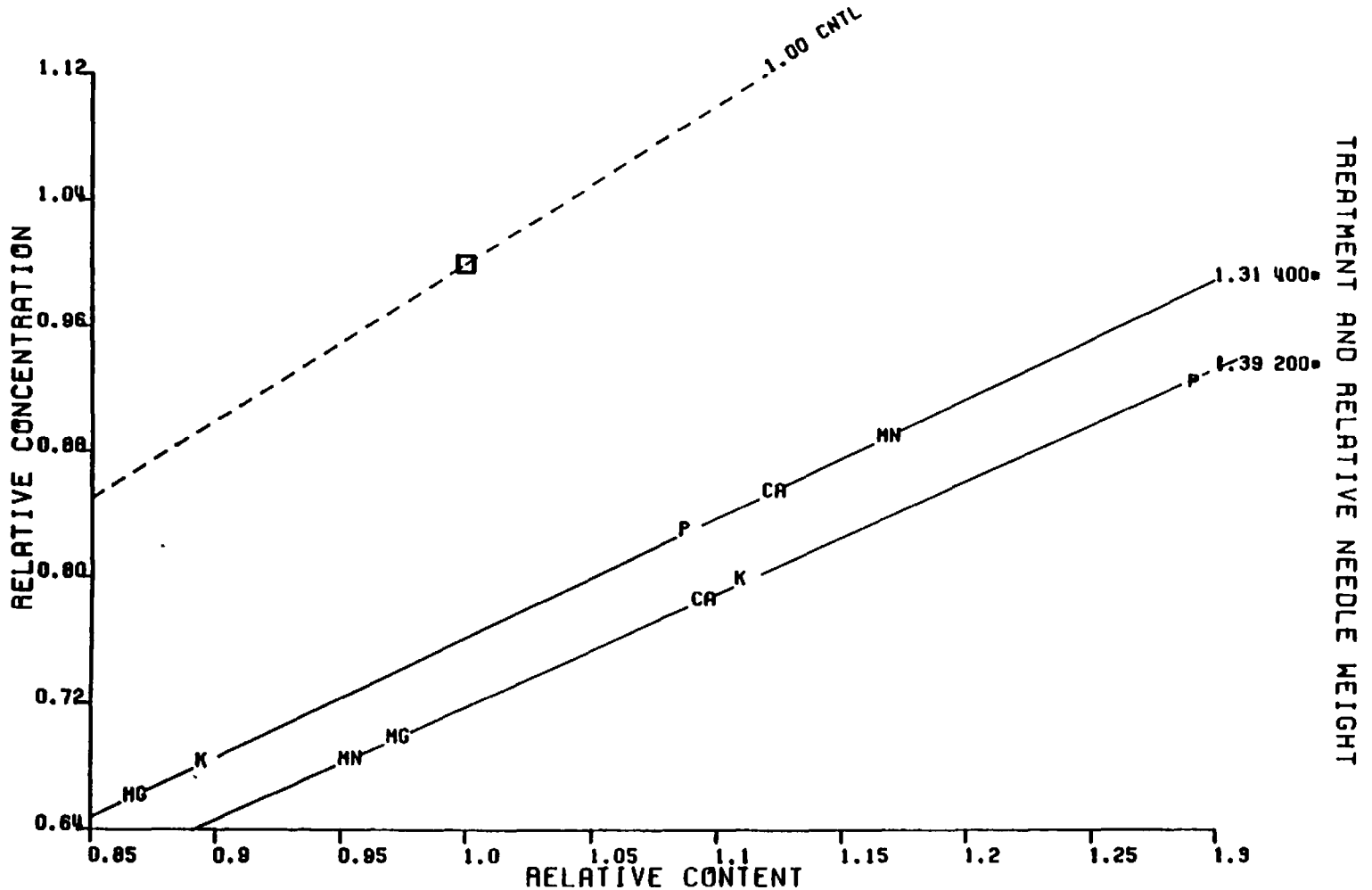


RELATIVE NUTRIENT RESPONSE FOR 210 BUCK CR.

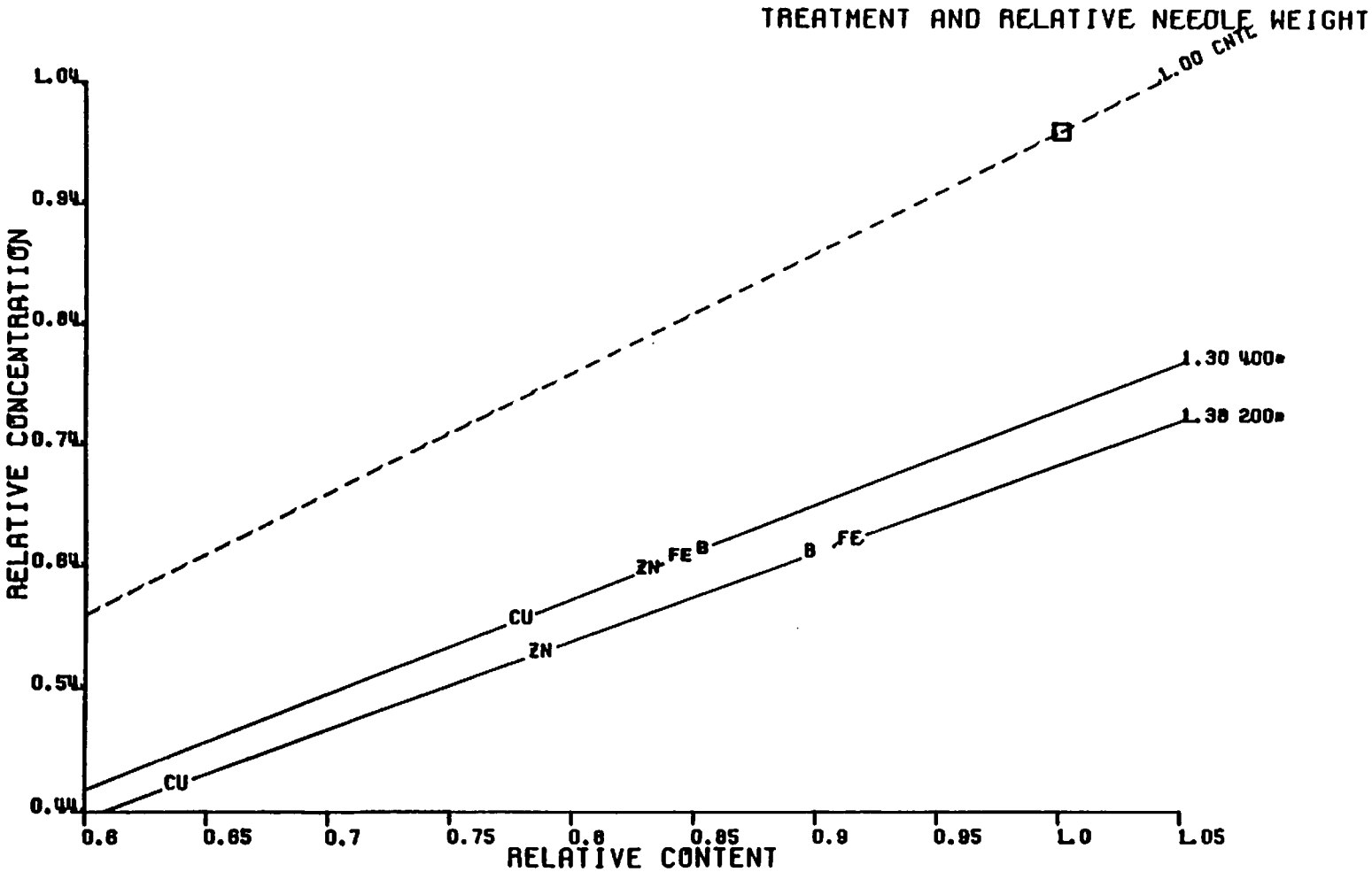
TREATMENT AND RELATIVE NEEDLE WEIGHT



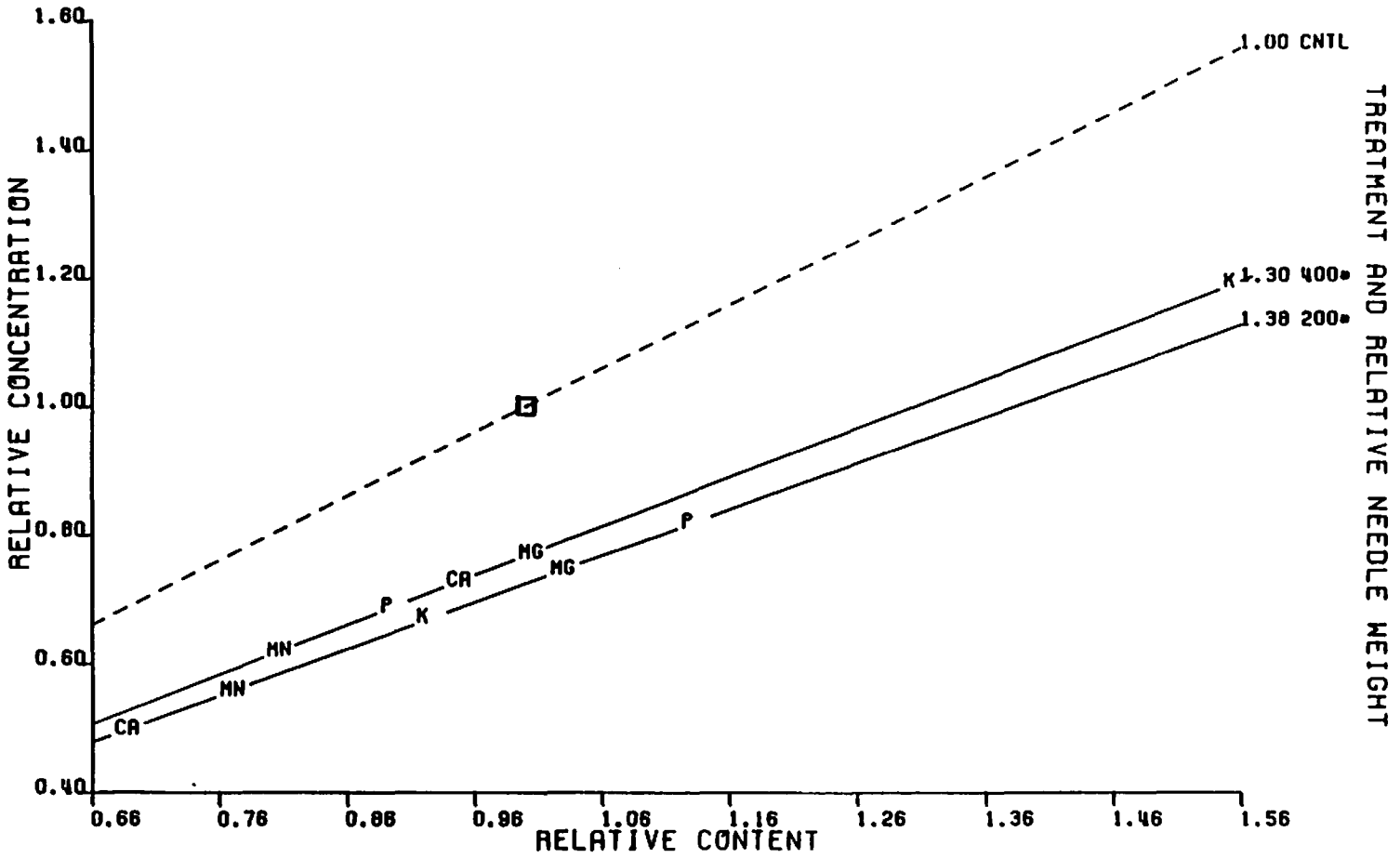
RELATIVE NUTRIENT RESPONSE FOR 210 BUCK CR.



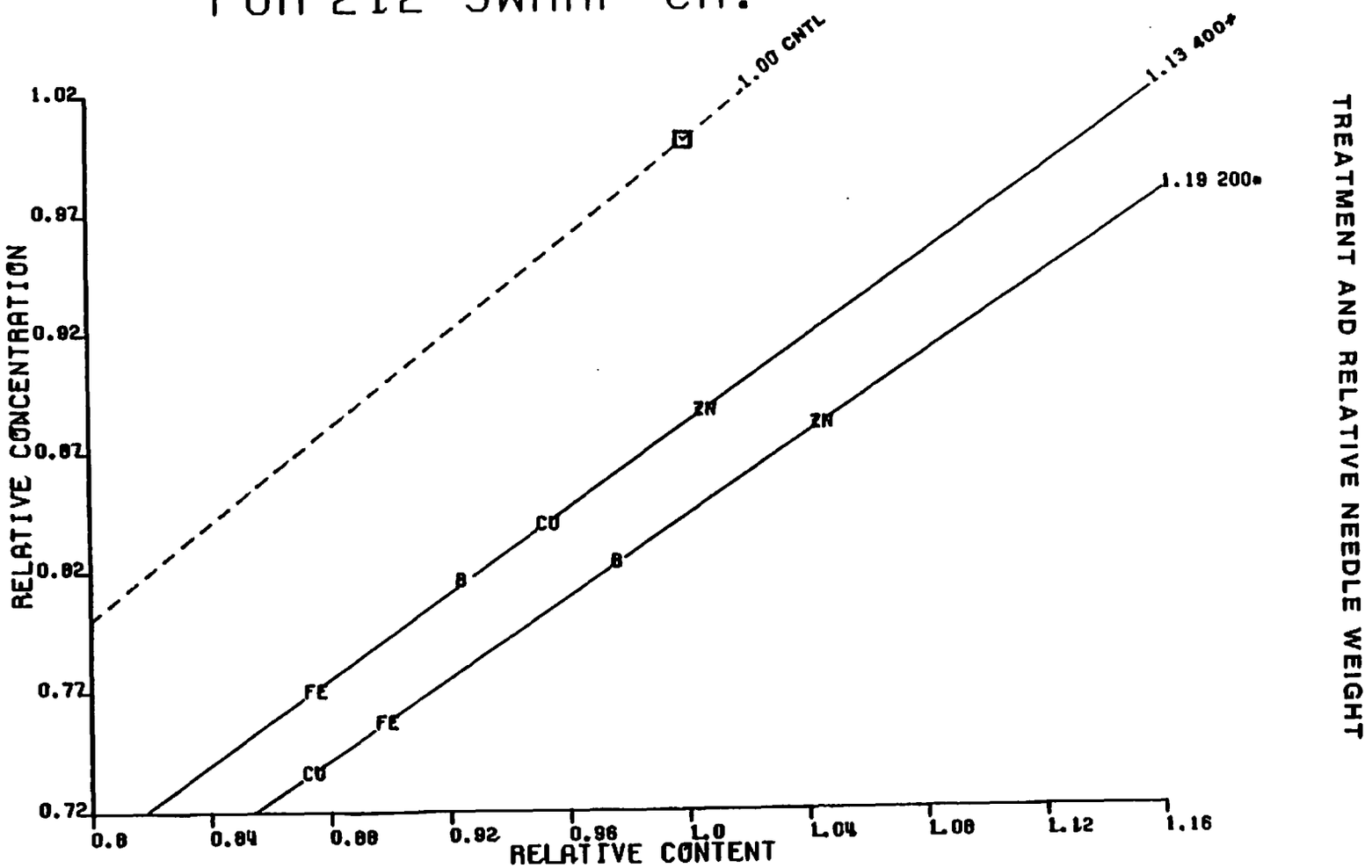
RELATIVE NUTRIENT RESPØNSE FØR 211 HEEL CR.



RELATIVE NUTRIENT RESPONSE FOR 211 HEEL CR.

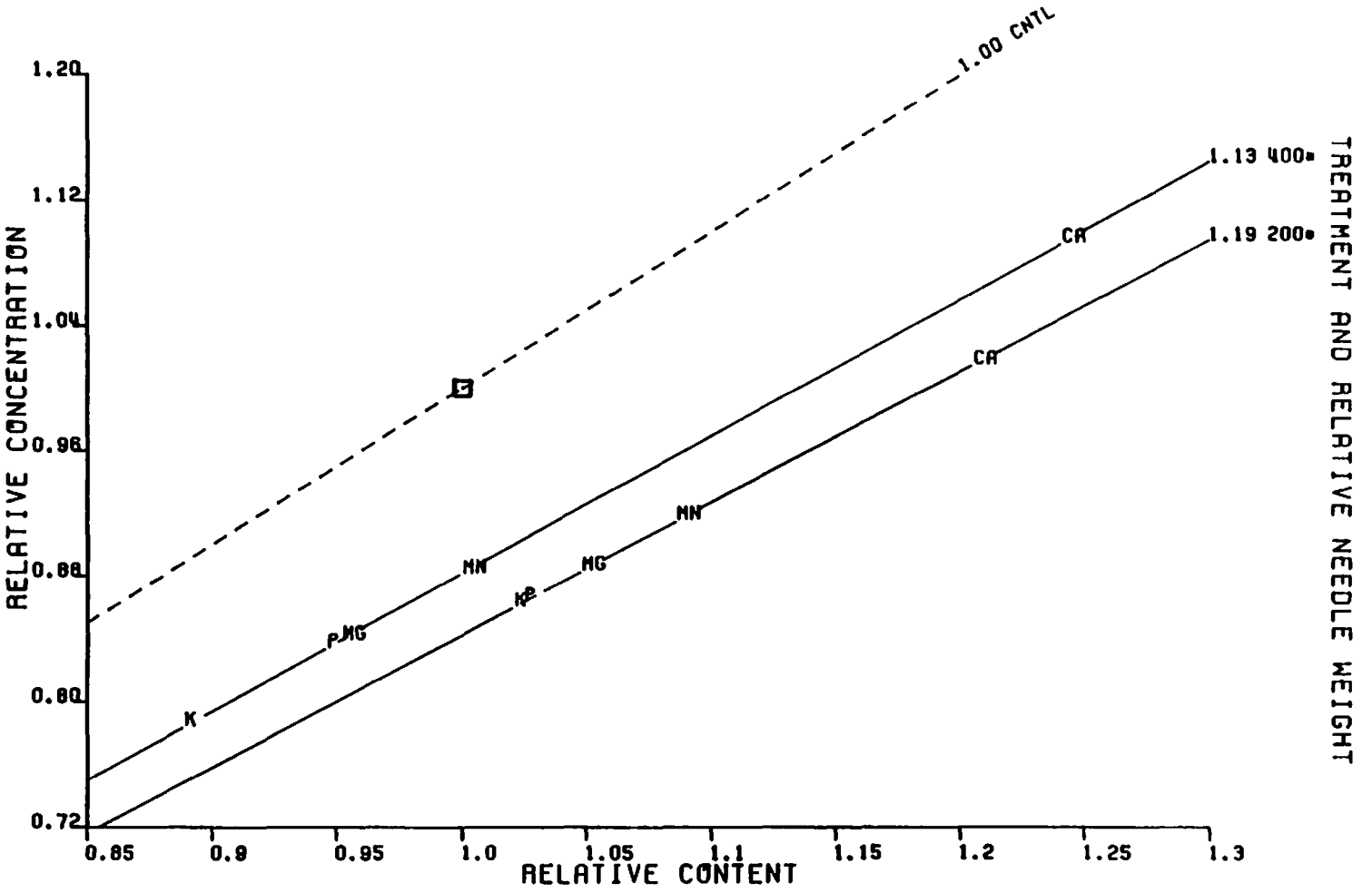


RELATIVE NUTRIENT RESPONSE FOR 212 SWAMP CR.

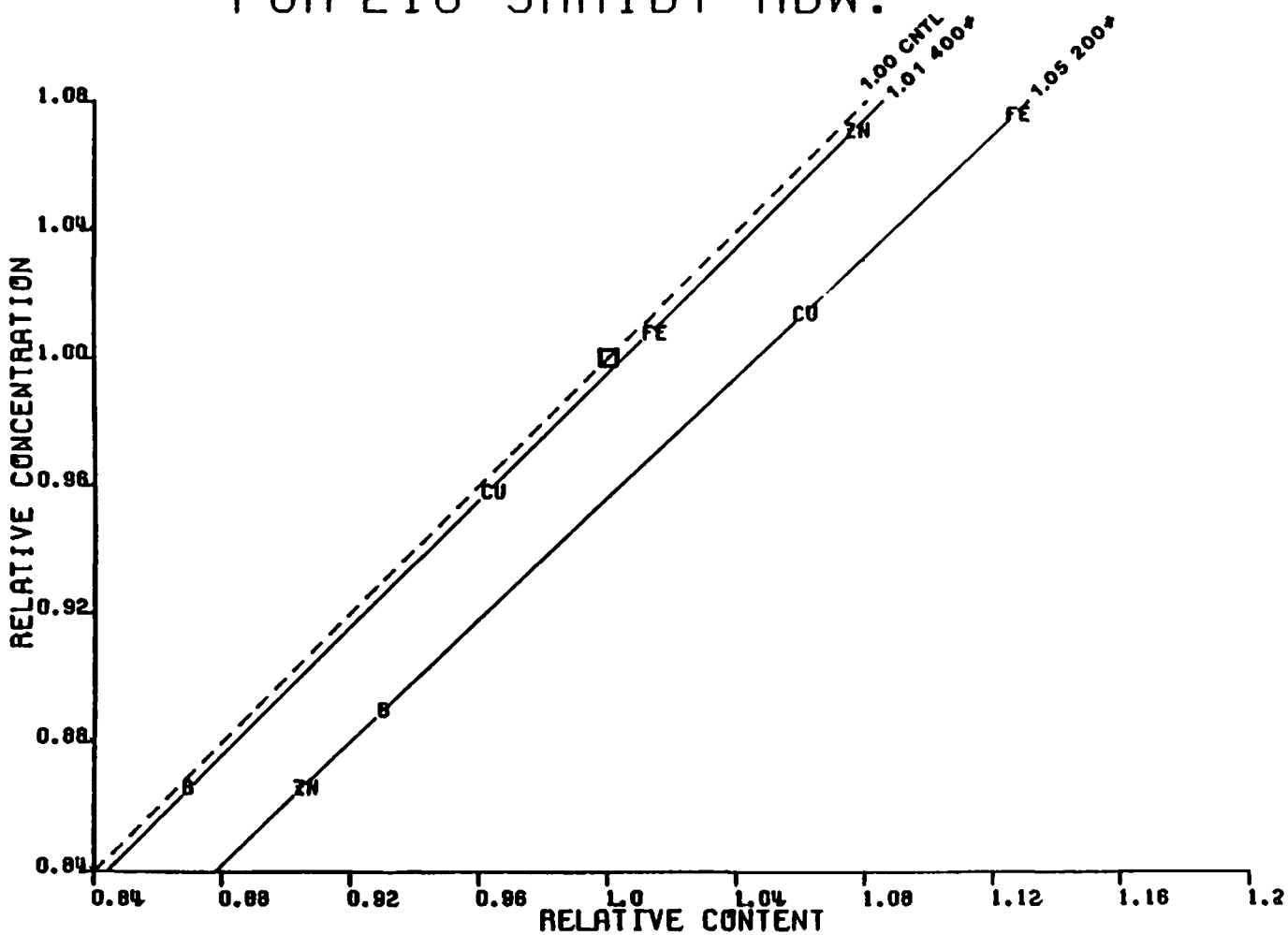


TREATMENT AND RELATIVE NEEDLE WEIGHT

RELATIVE NUTRIENT RESPONSE FOR 212 SWAMP CR.

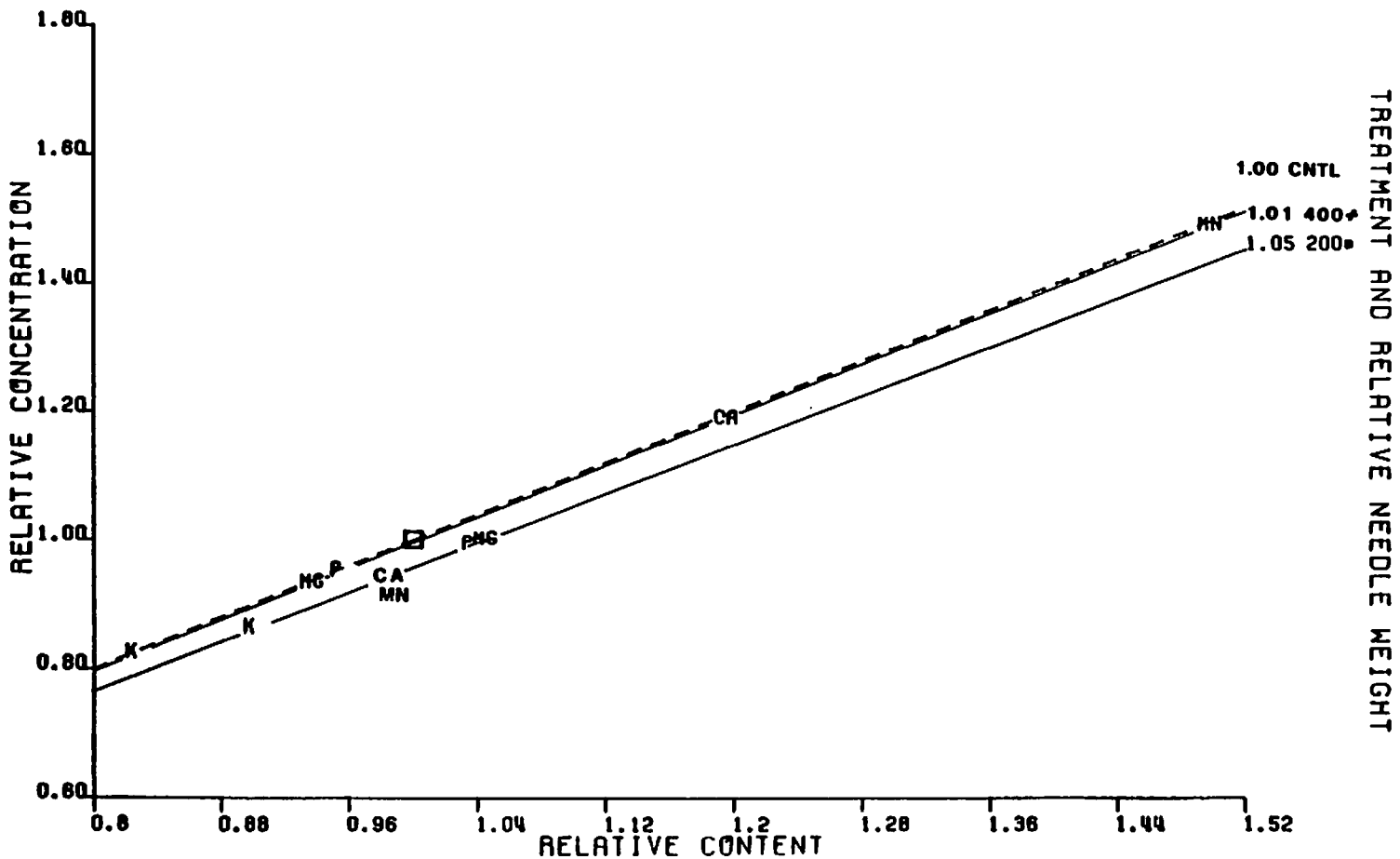


RELATIVE NUTRIENT RESPØNSE FØR 216 SHMIDT MDW.

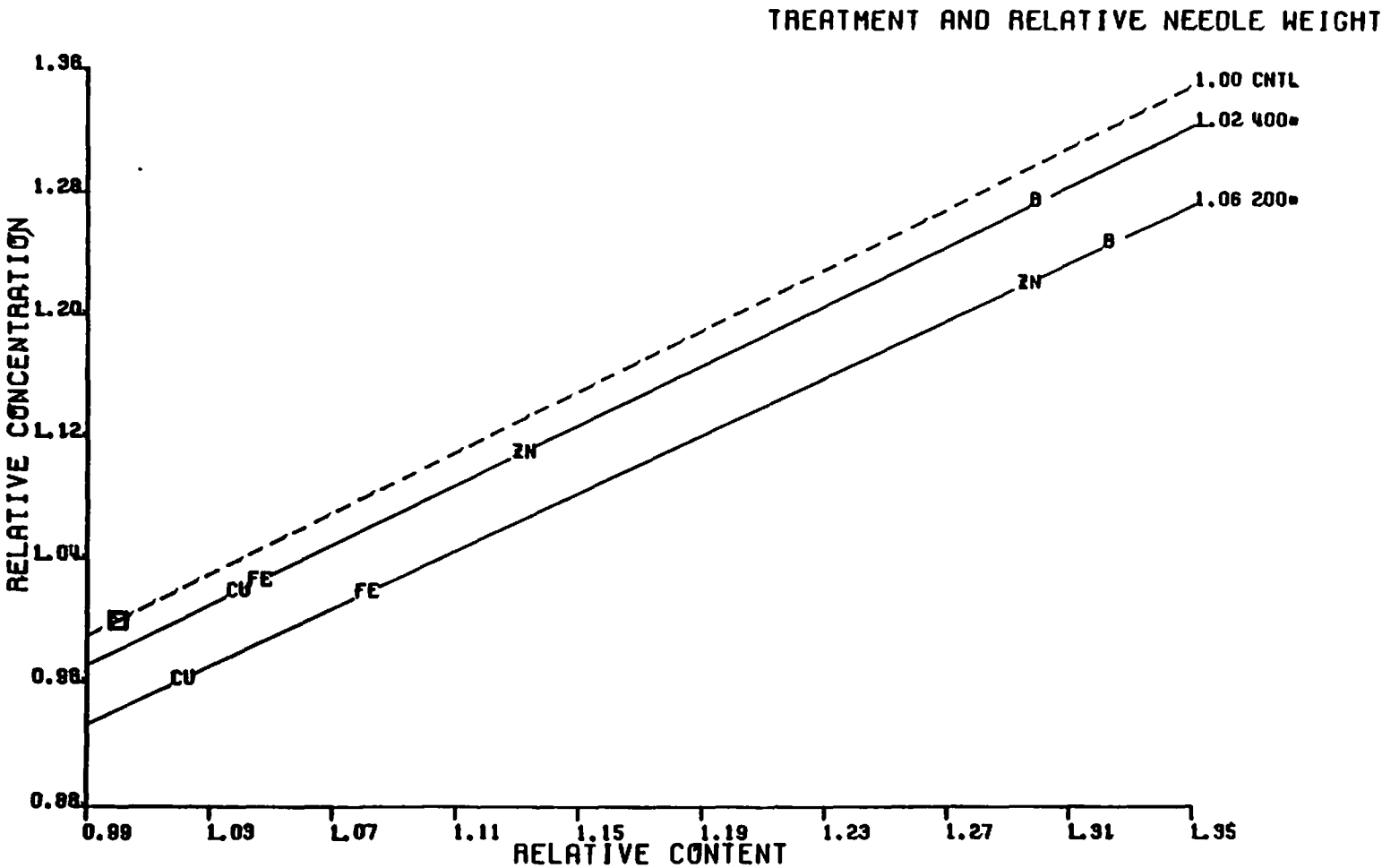


TREATMENT AND RELATIVE NEEDLE WEIGHT

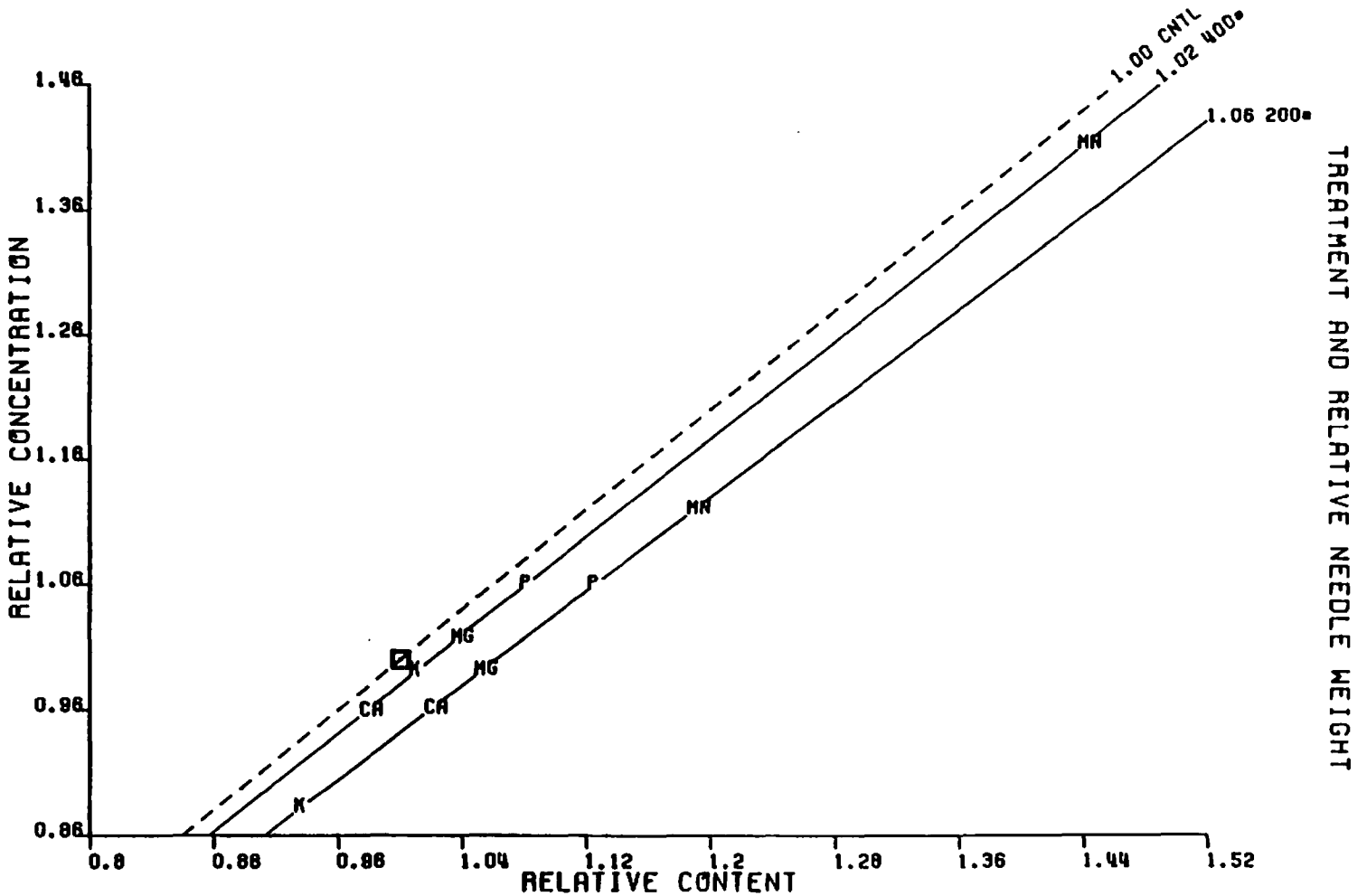
RELATIVE NUTRIENT RESPONSE FOR 216 SHMIDT MDW.



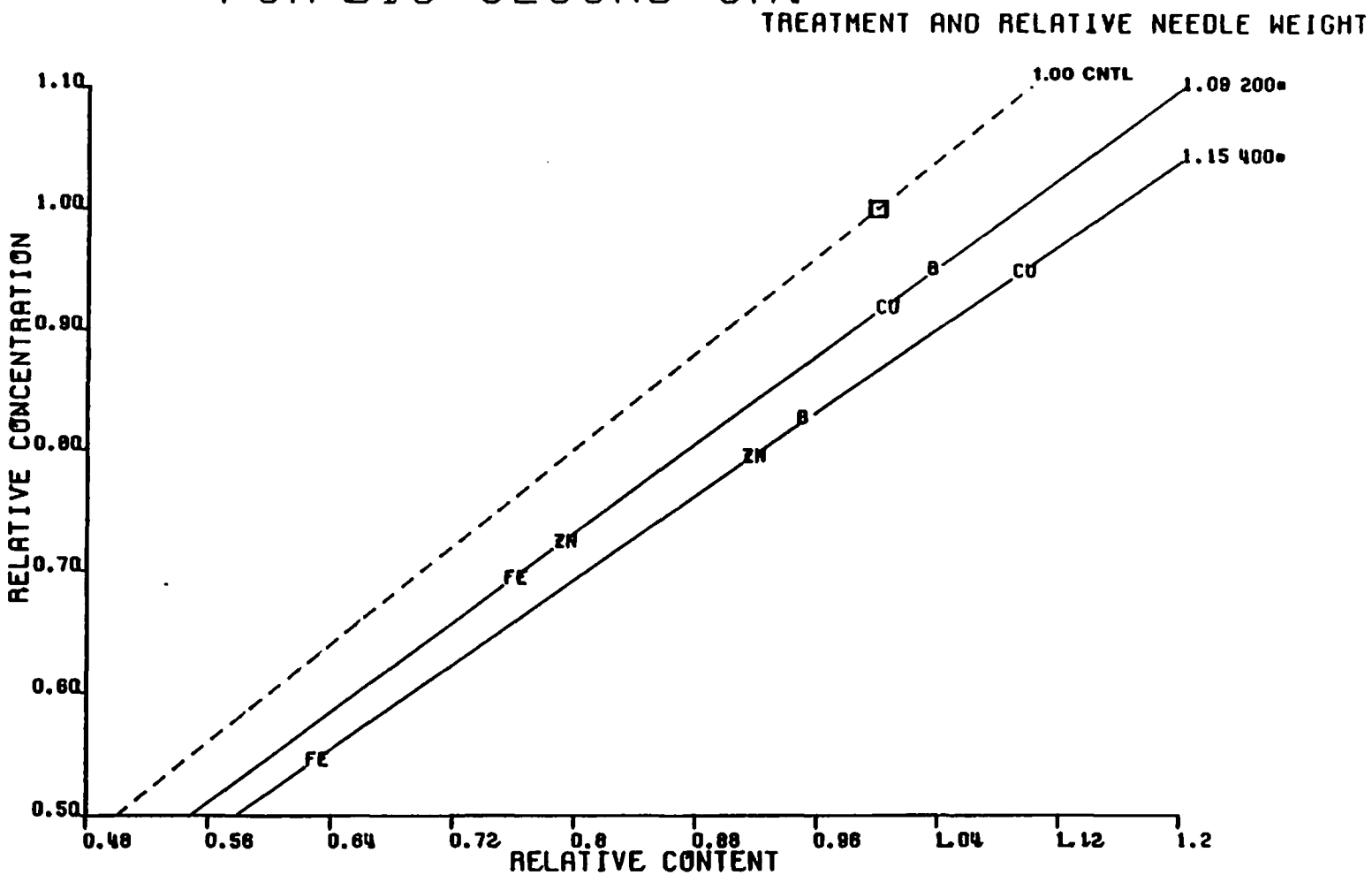
RELATIVE NUTRIENT RESPØNSE FØR 217 EMANUAL CR.



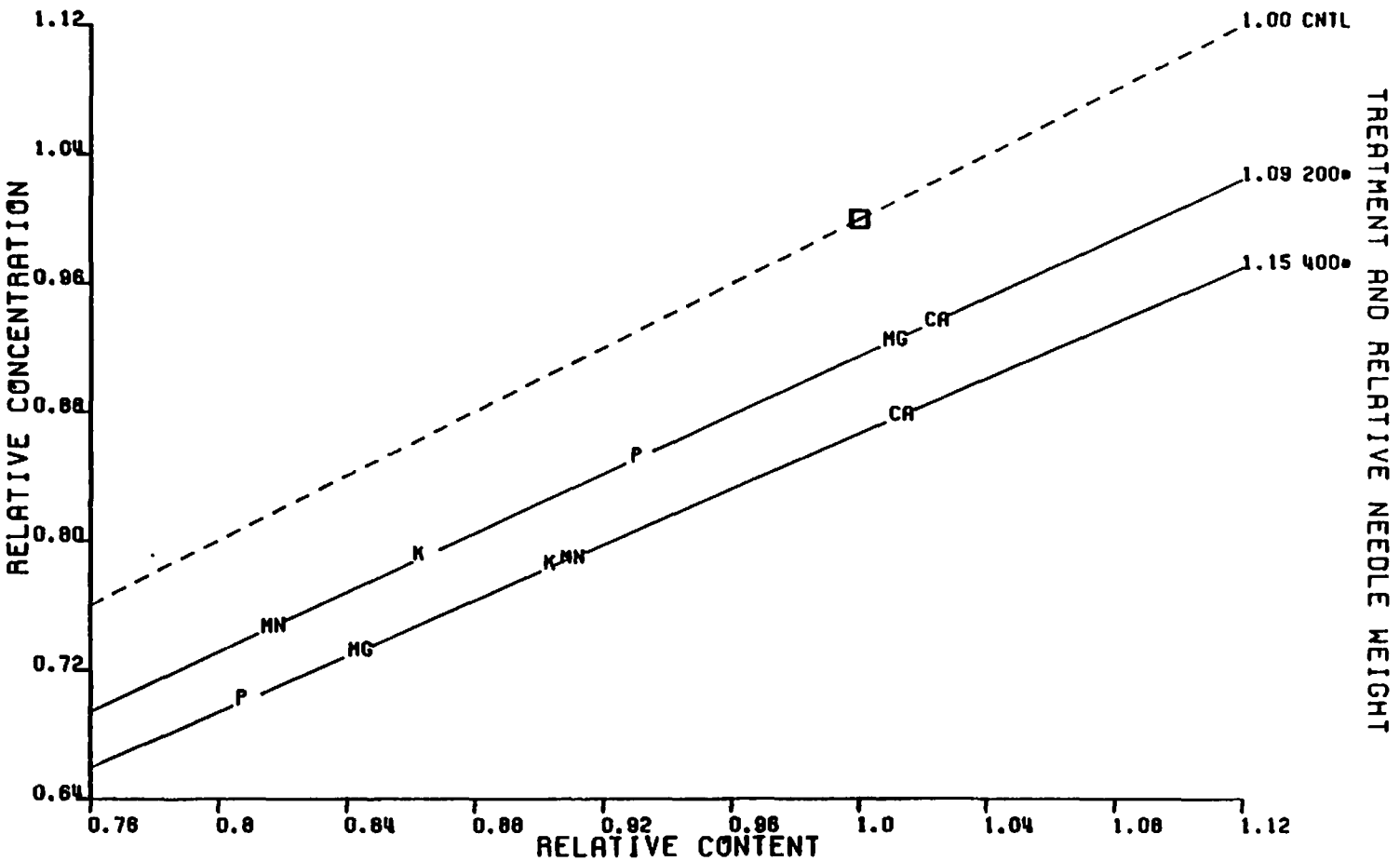
RELATIVE NUTRIENT RESPØNSE FØR 217 EMANUEL CR.



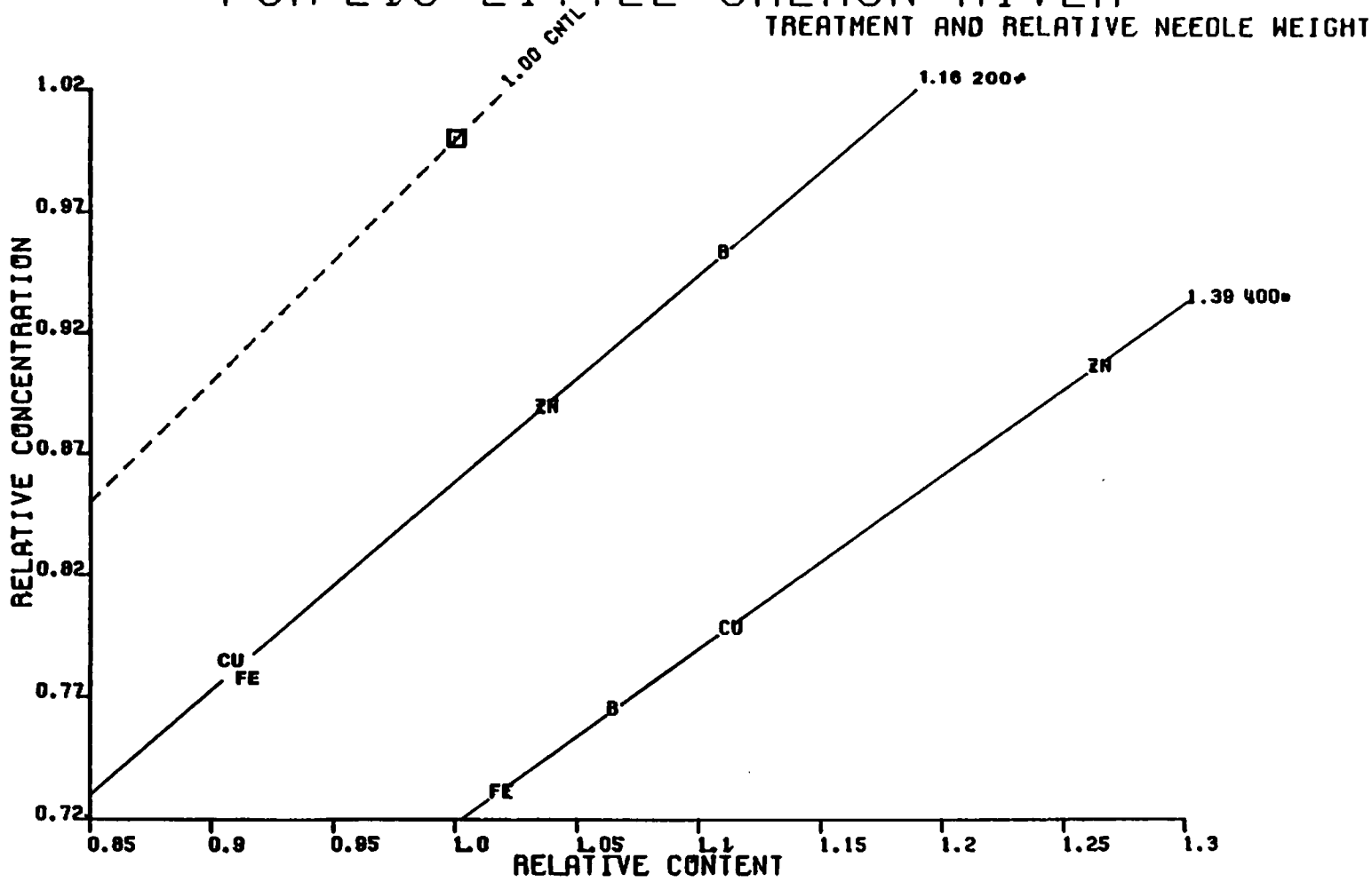
RELATIVE NUTRIENT RESPONSE FOR 218 SECOND CR.



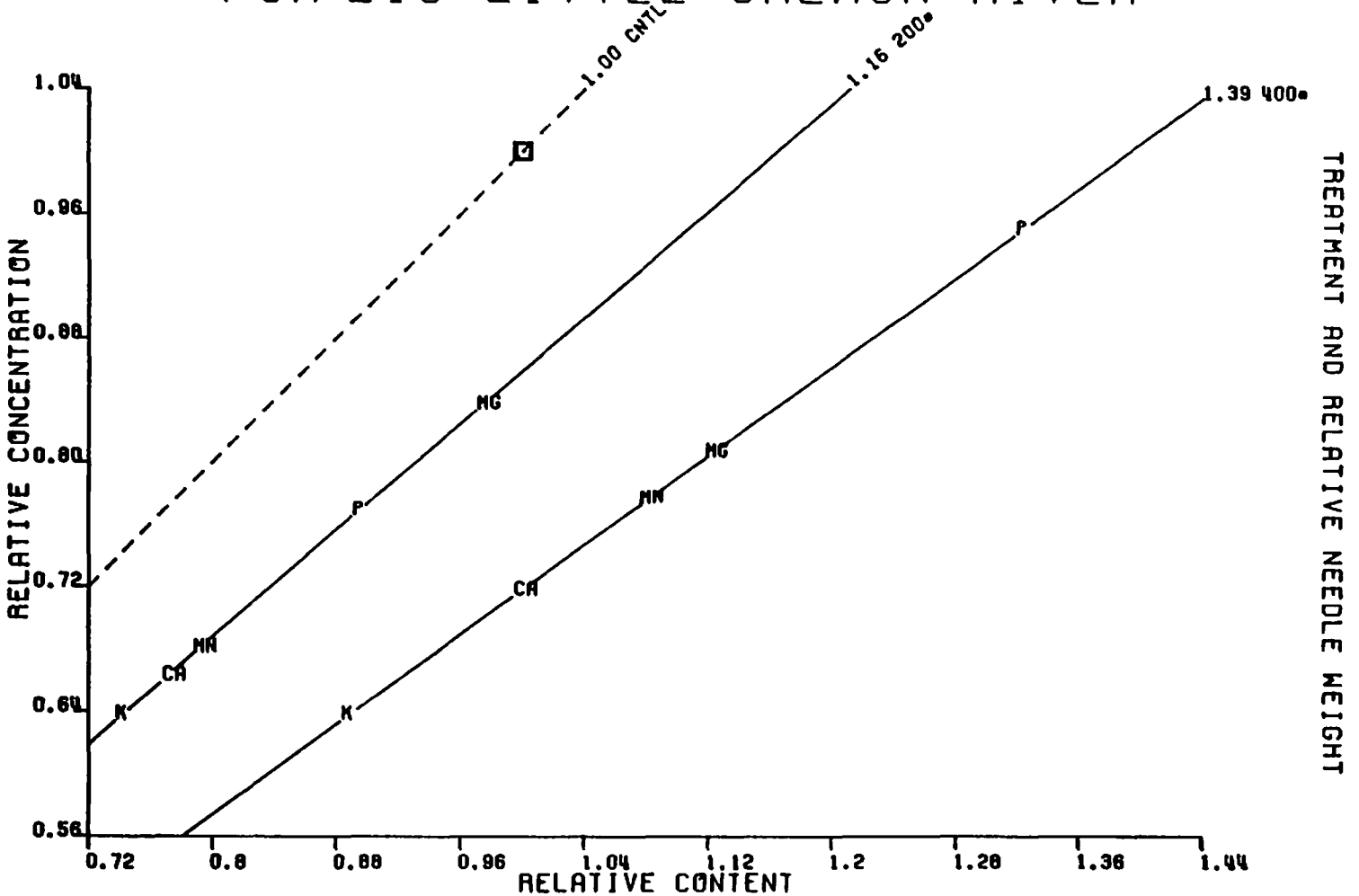
RELATIVE NUTRIENT RESPONSE FOR 218 SECOND CR.



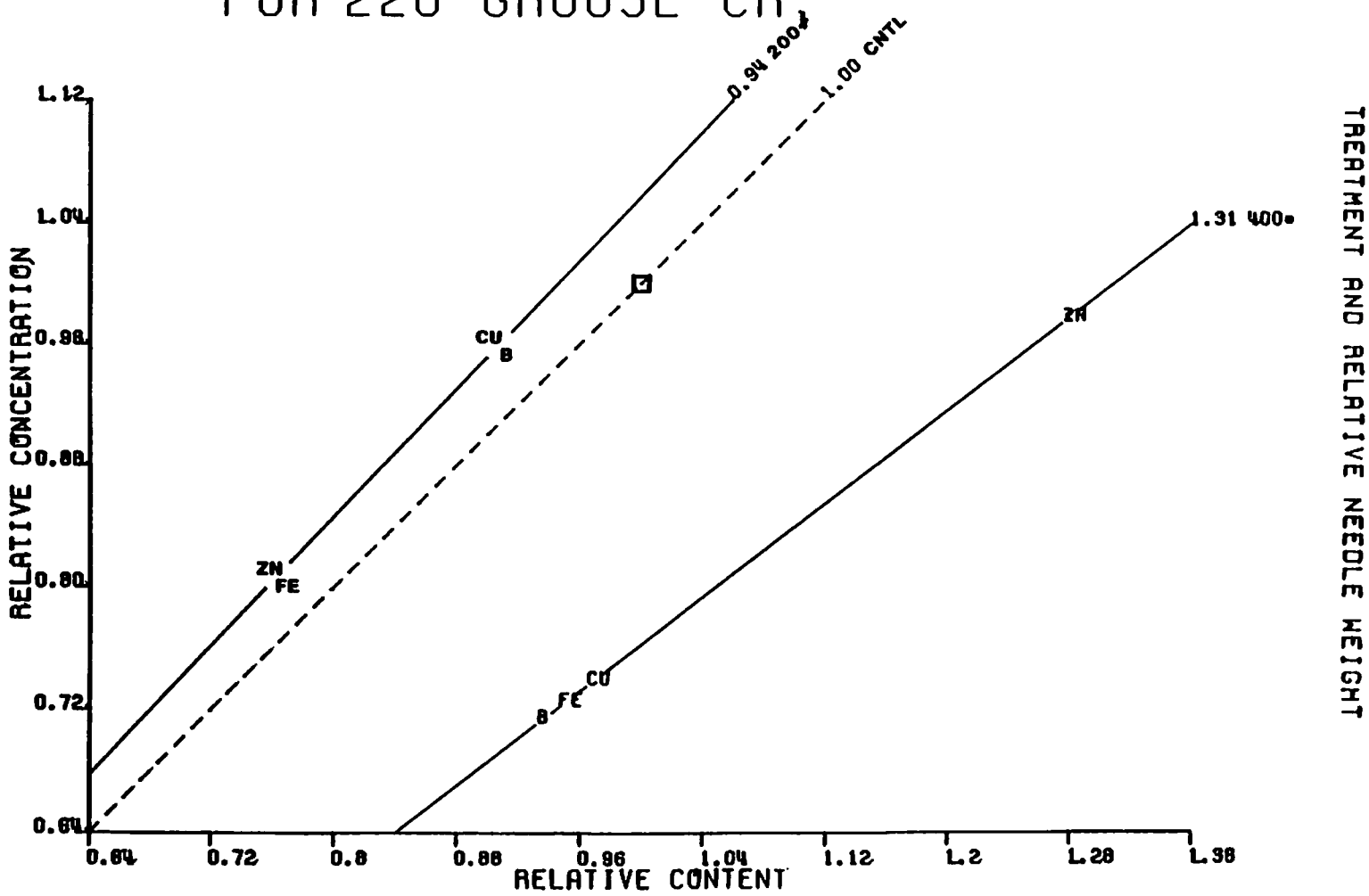
RELATIVE NUTRIENT RESPONSE FOR 219 LITTLE SALMON RIVER



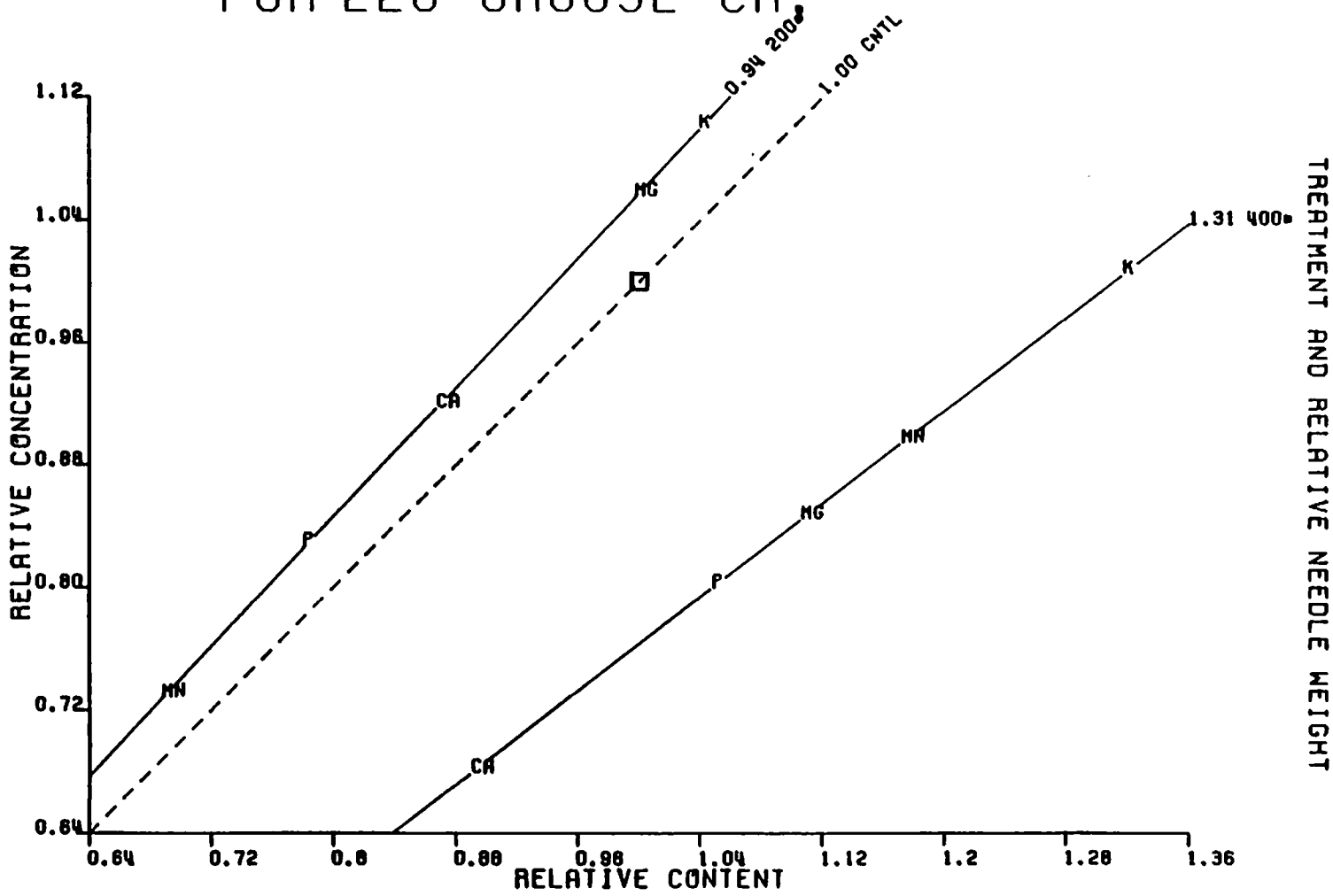
RELATIVE NUTRIENT RESPONSE FOR 219 LITTLE SALMON RIVER



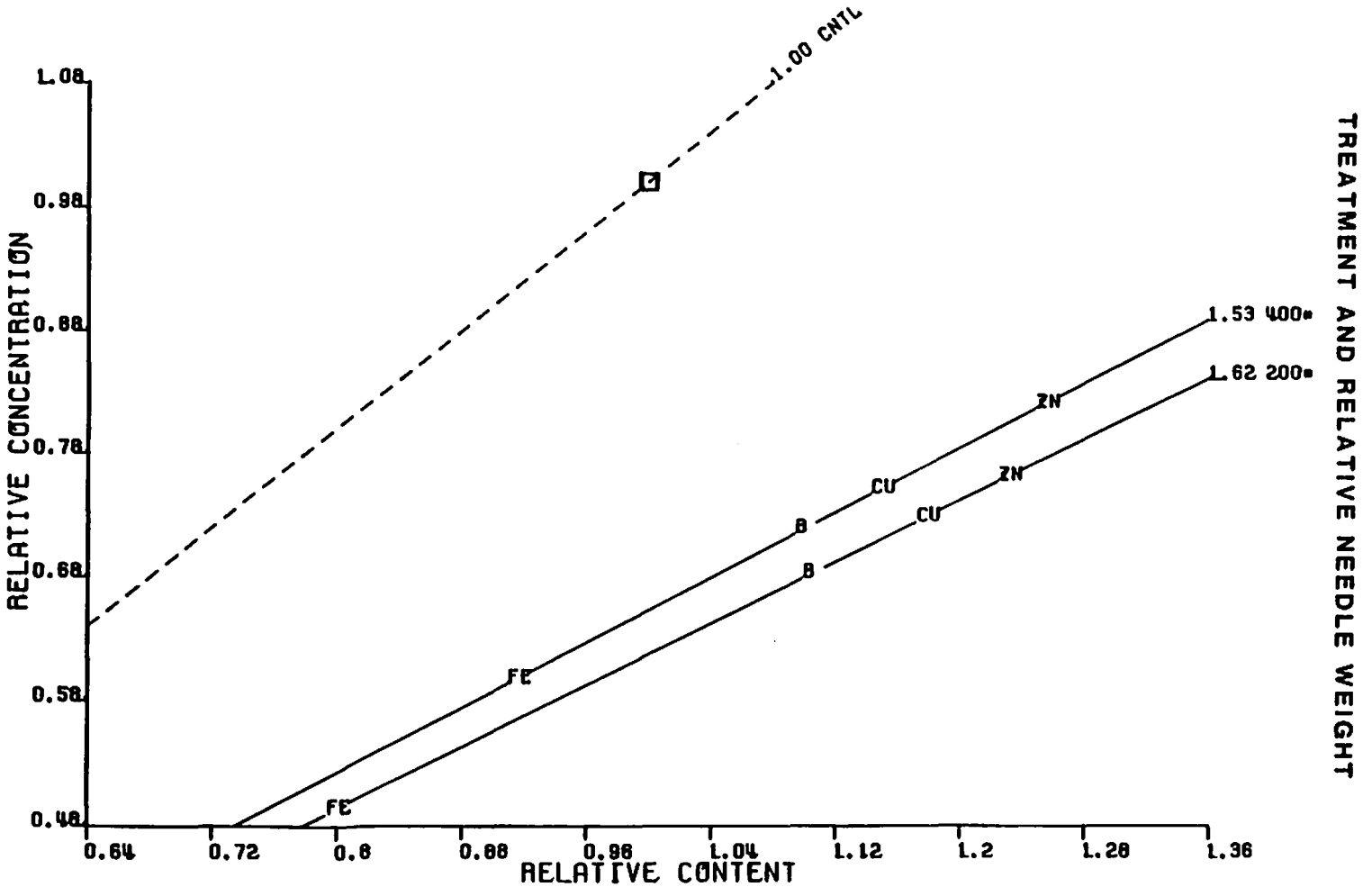
RELATIVE NUTRIENT RESPONSE FOR 220 GROUSE CR.



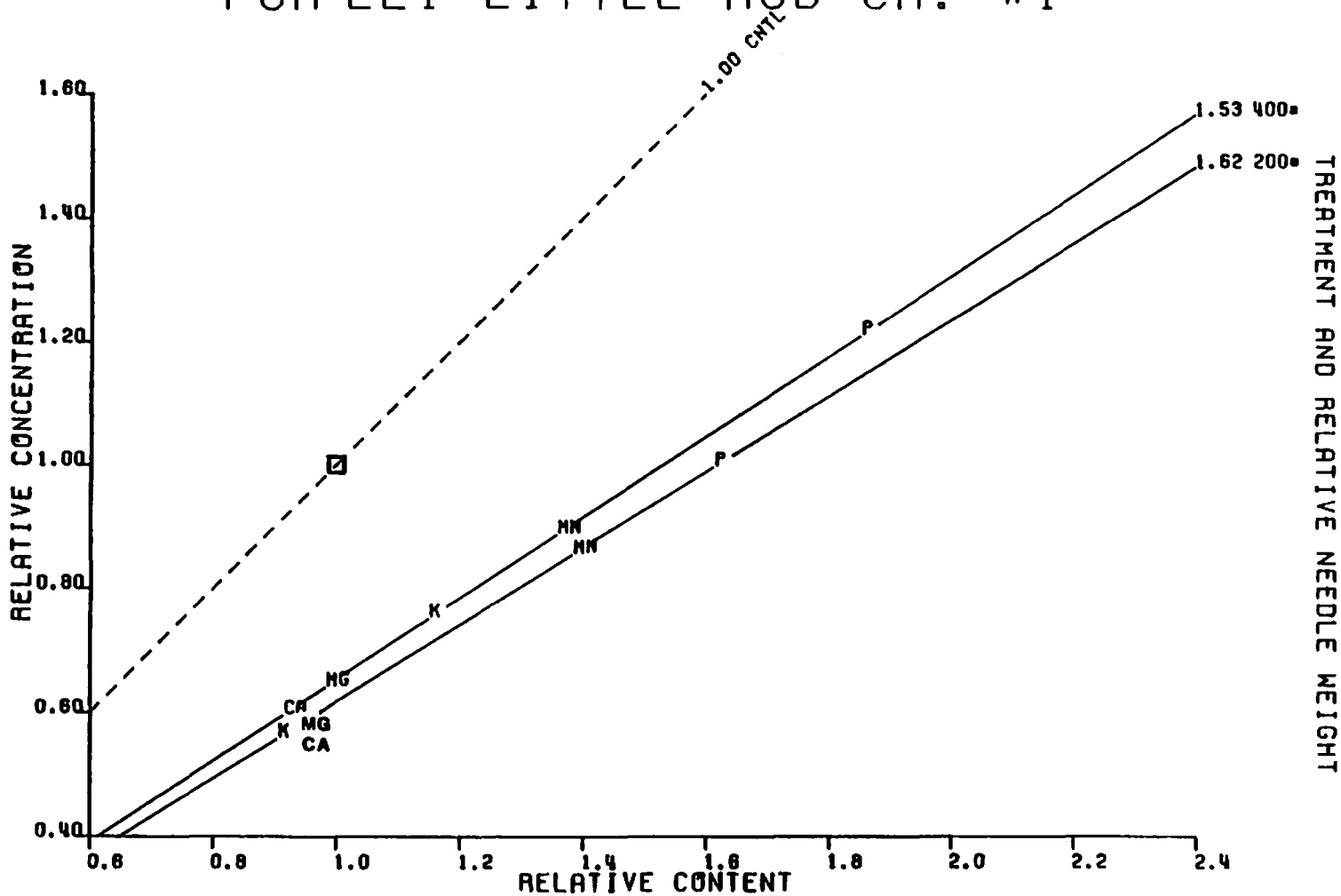
RELATIVE NUTRIENT RESPONSE FOR 220 GROUSE CR.



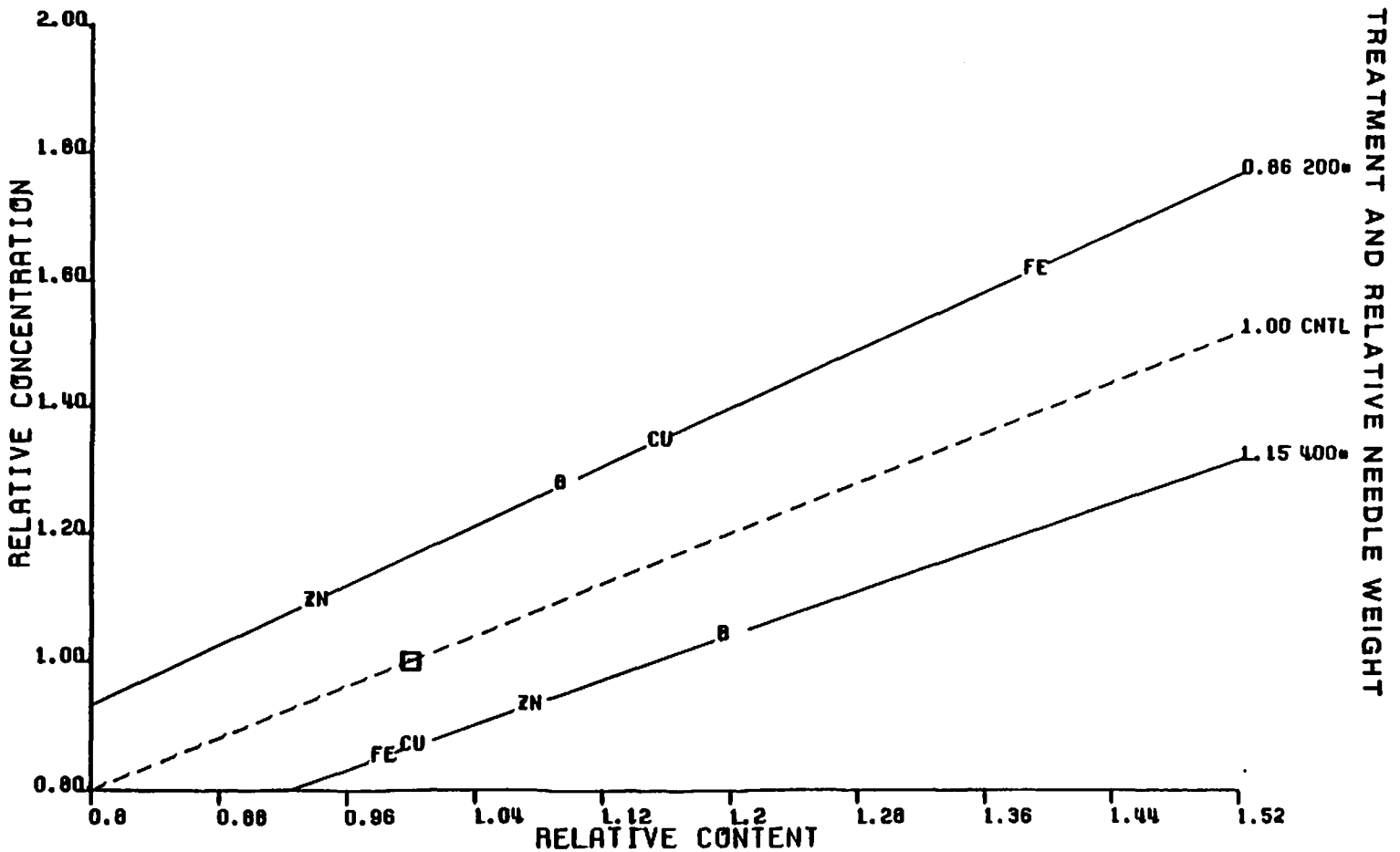
RELATIVE NUTRIENT RESPØNSE FØR 221 LITTLE MUD CR. #1



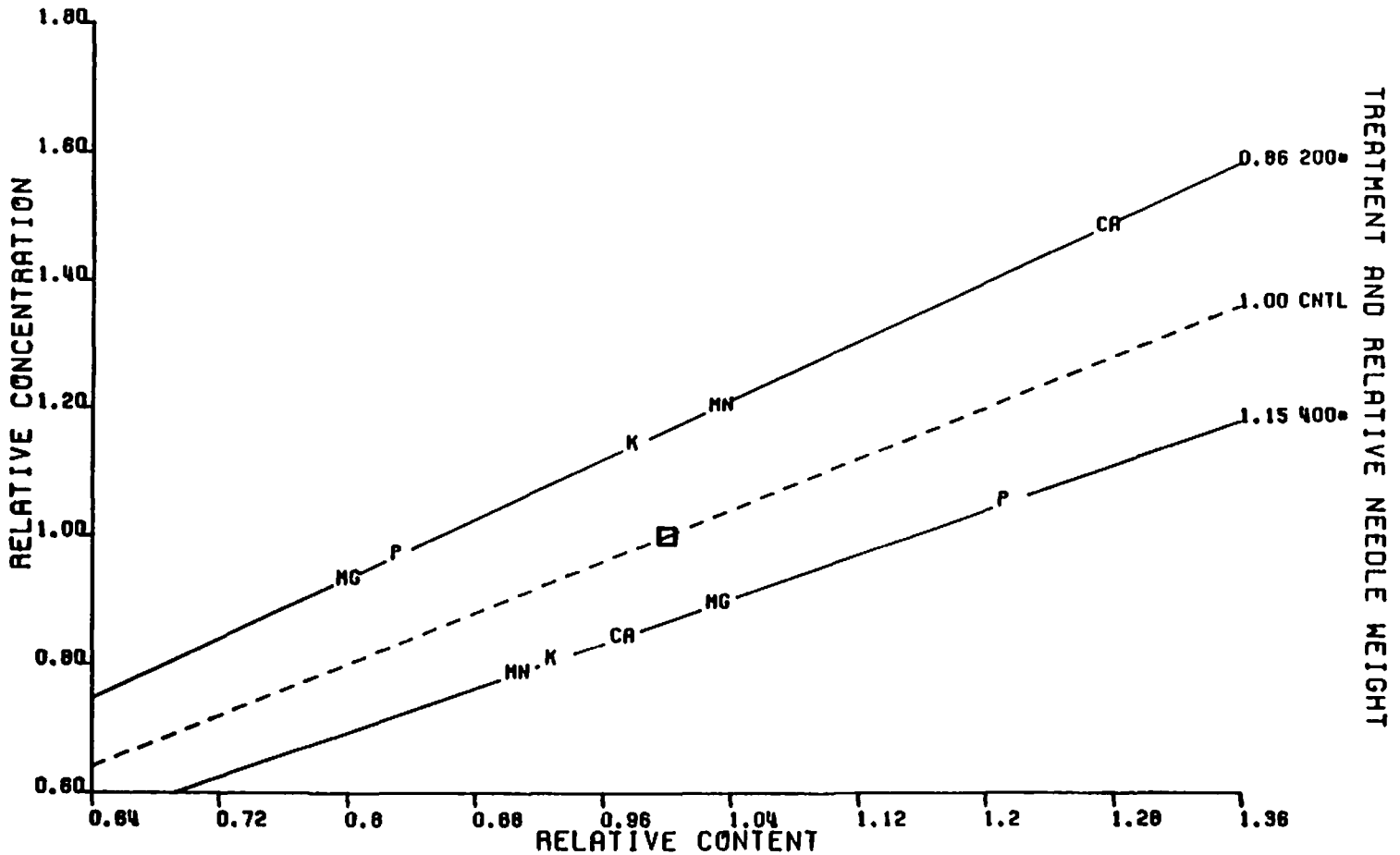
RELATIVE NUTRIENT RESPØNSE FØR 221 LITTLE MUD CR. #1



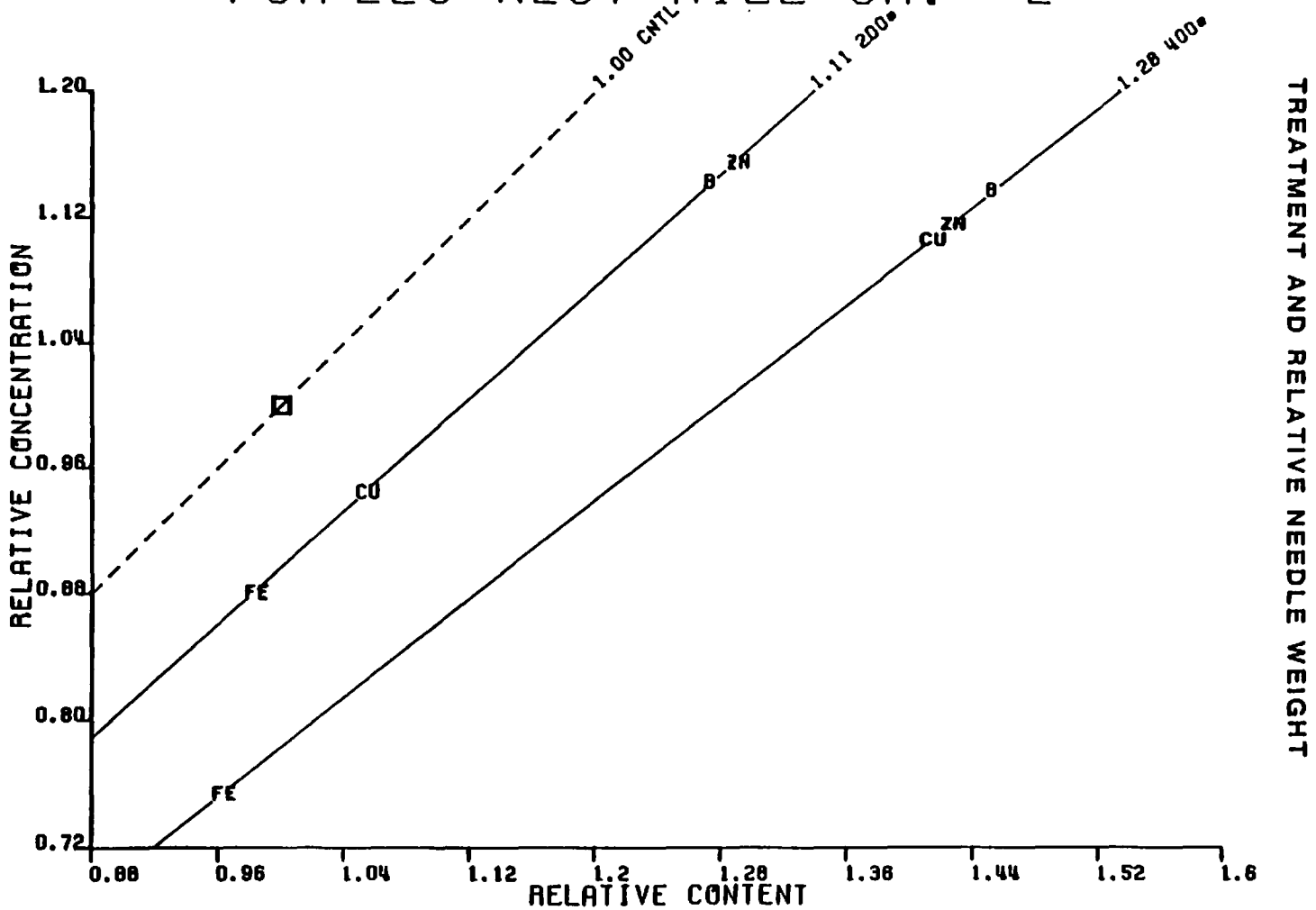
RELATIVE NUTRIENT RESPONSE FOR 222 WEST MILL CR. #1



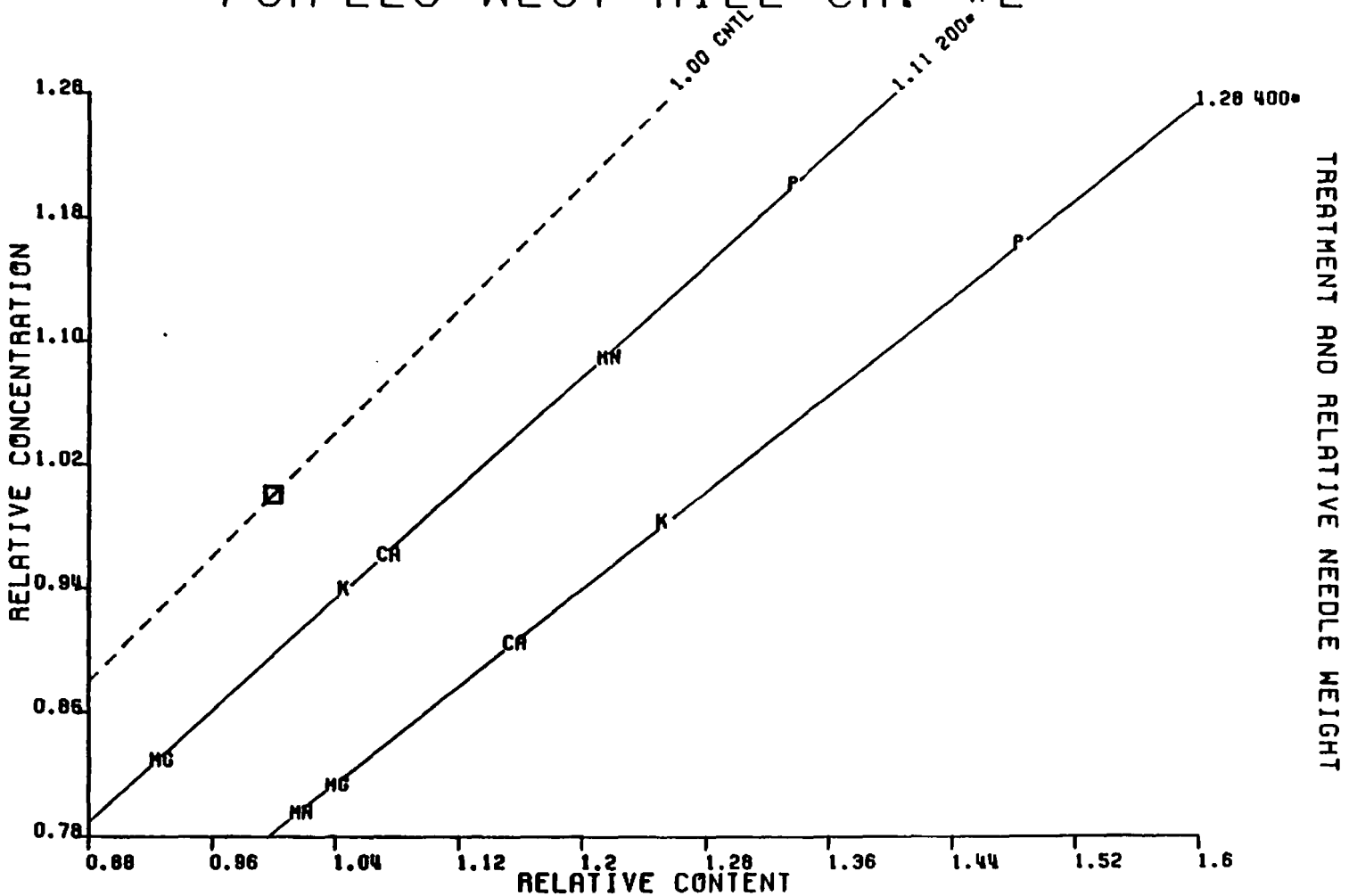
RELATIVE NUTRIENT RESPONSE FOR 222 WEST MILL CR. #1



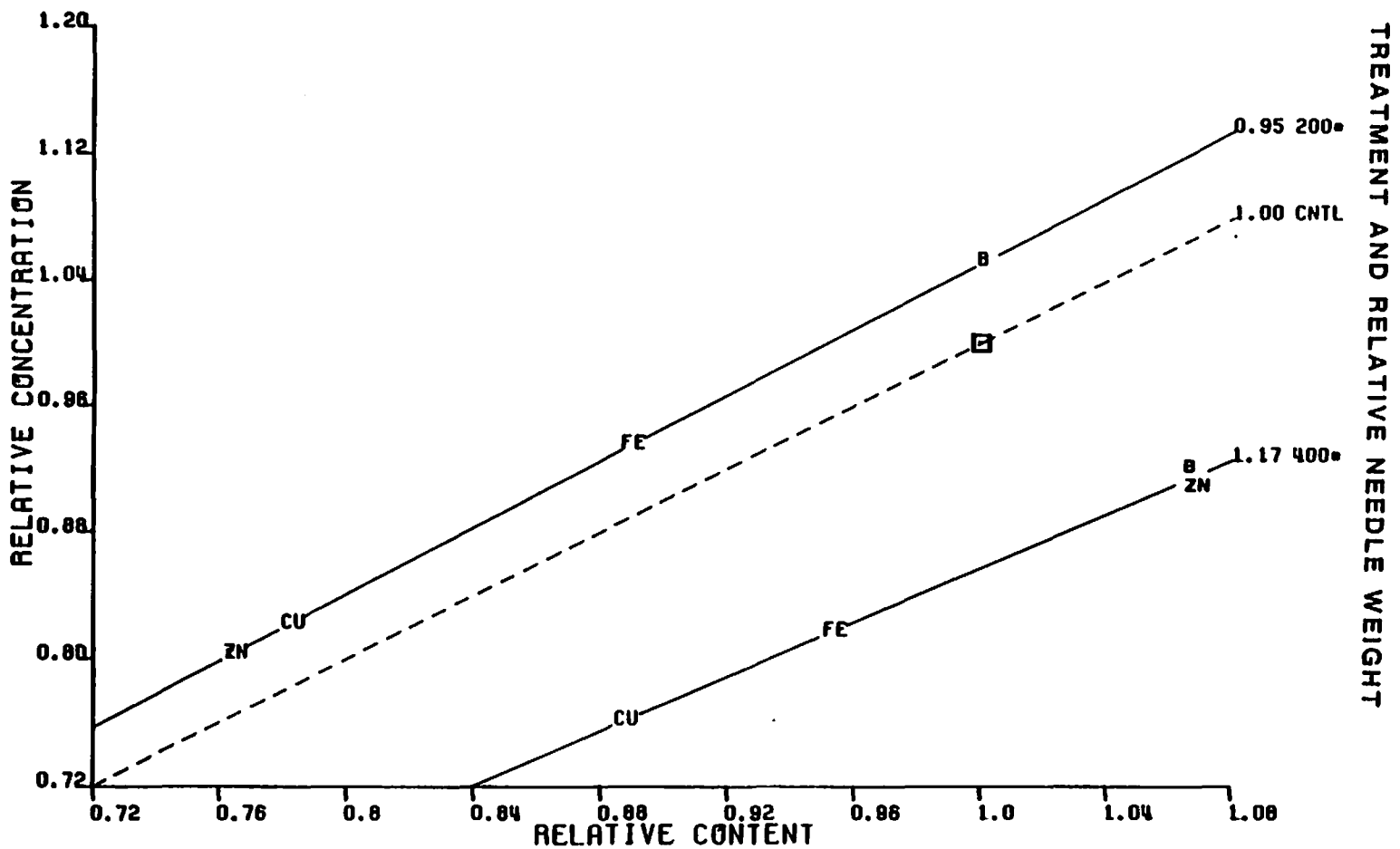
RELATIVE NUTRIENT RESPONSE FOR 223 WEST MILL CR. #2



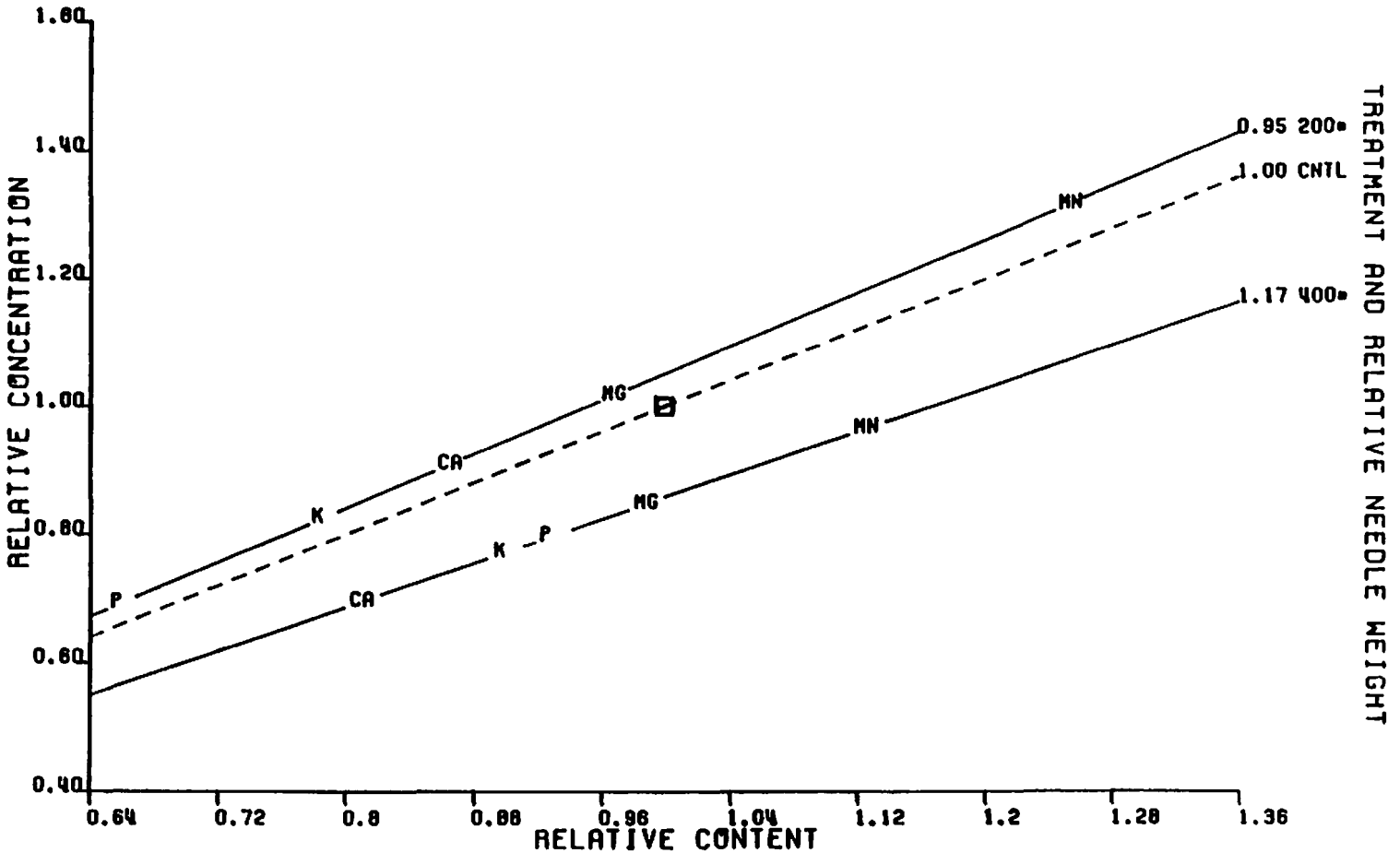
RELATIVE NUTRIENT RESPONSE FOR 223 WEST MILL CR. #2



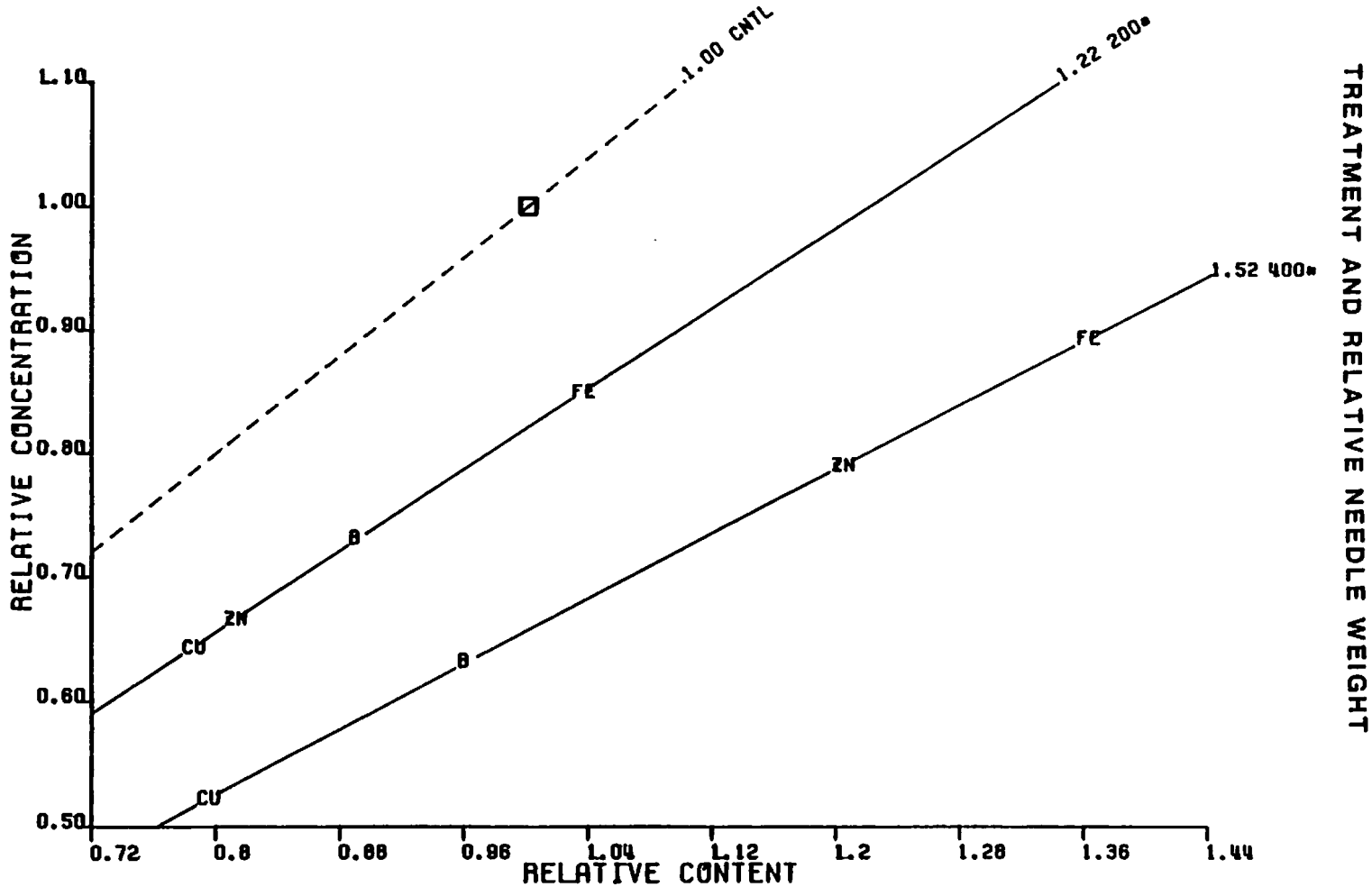
RELATIVE NUTRIENT RESPONSE FOR 225 BOWMAN CR.



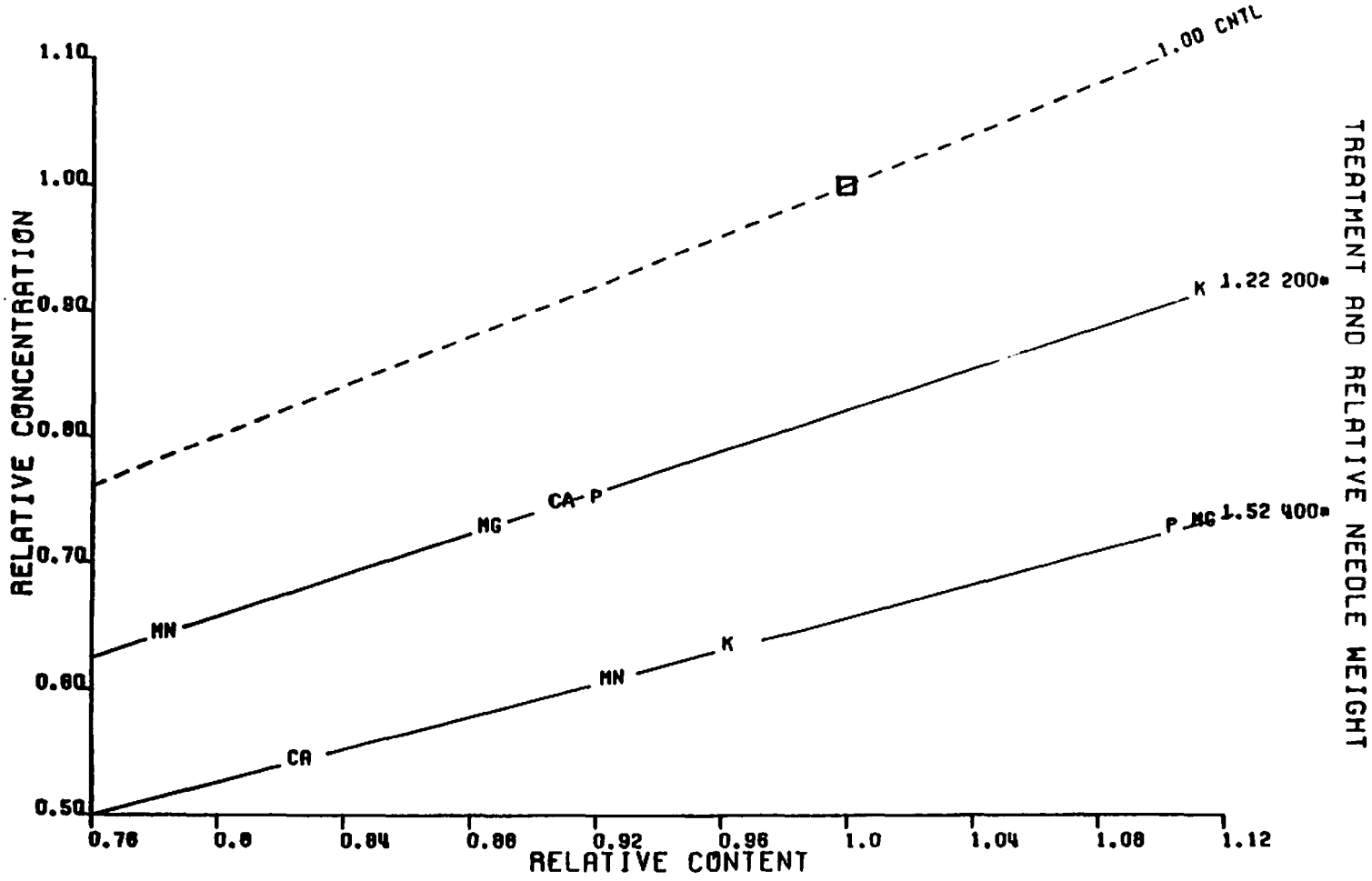
RELATIVE NUTRIENT RESPØNSE FØR 225 BØWMAN CR.



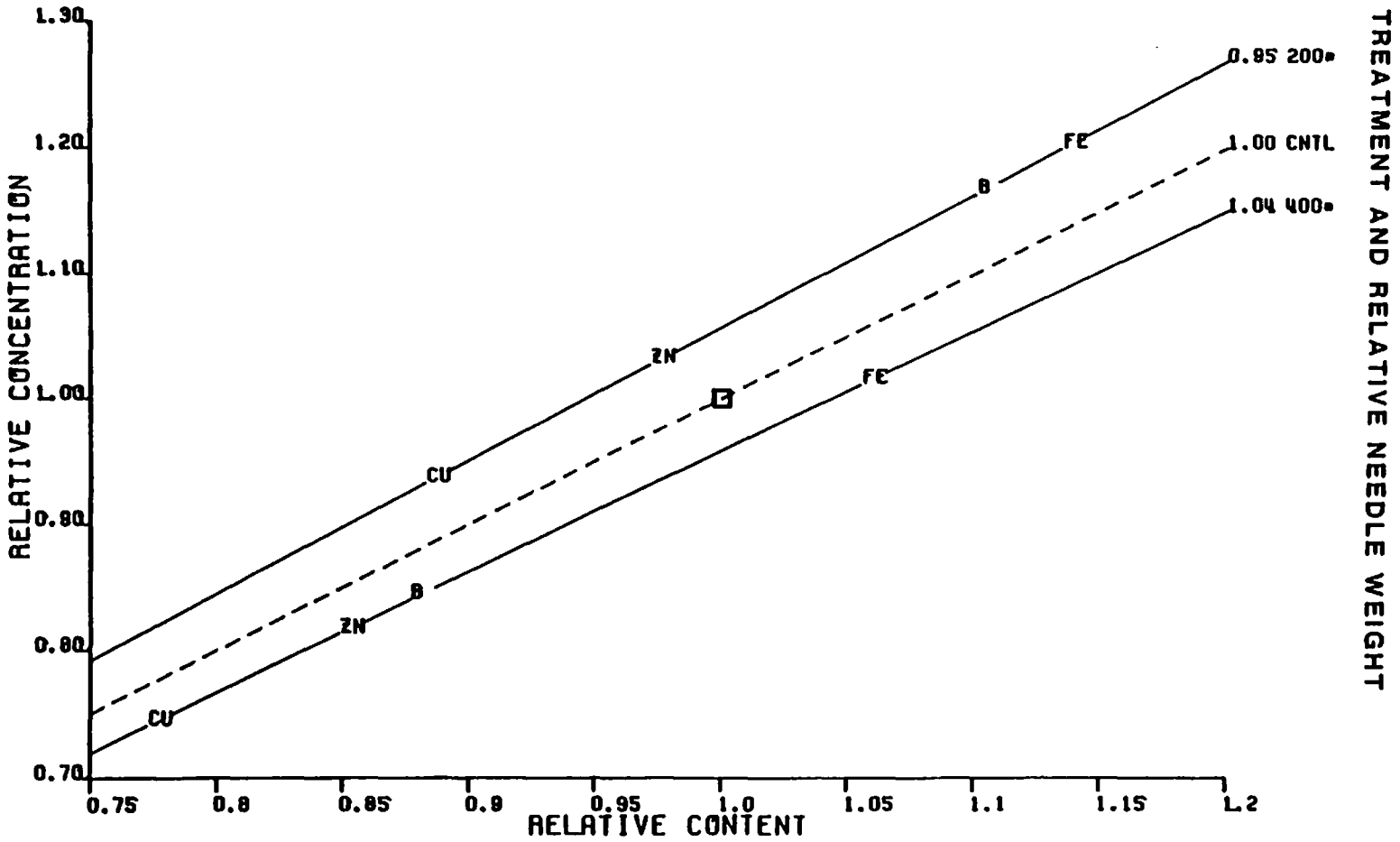
RELATIVE NUTRIENT RESPONSE FØR 226 CLEMAN MT



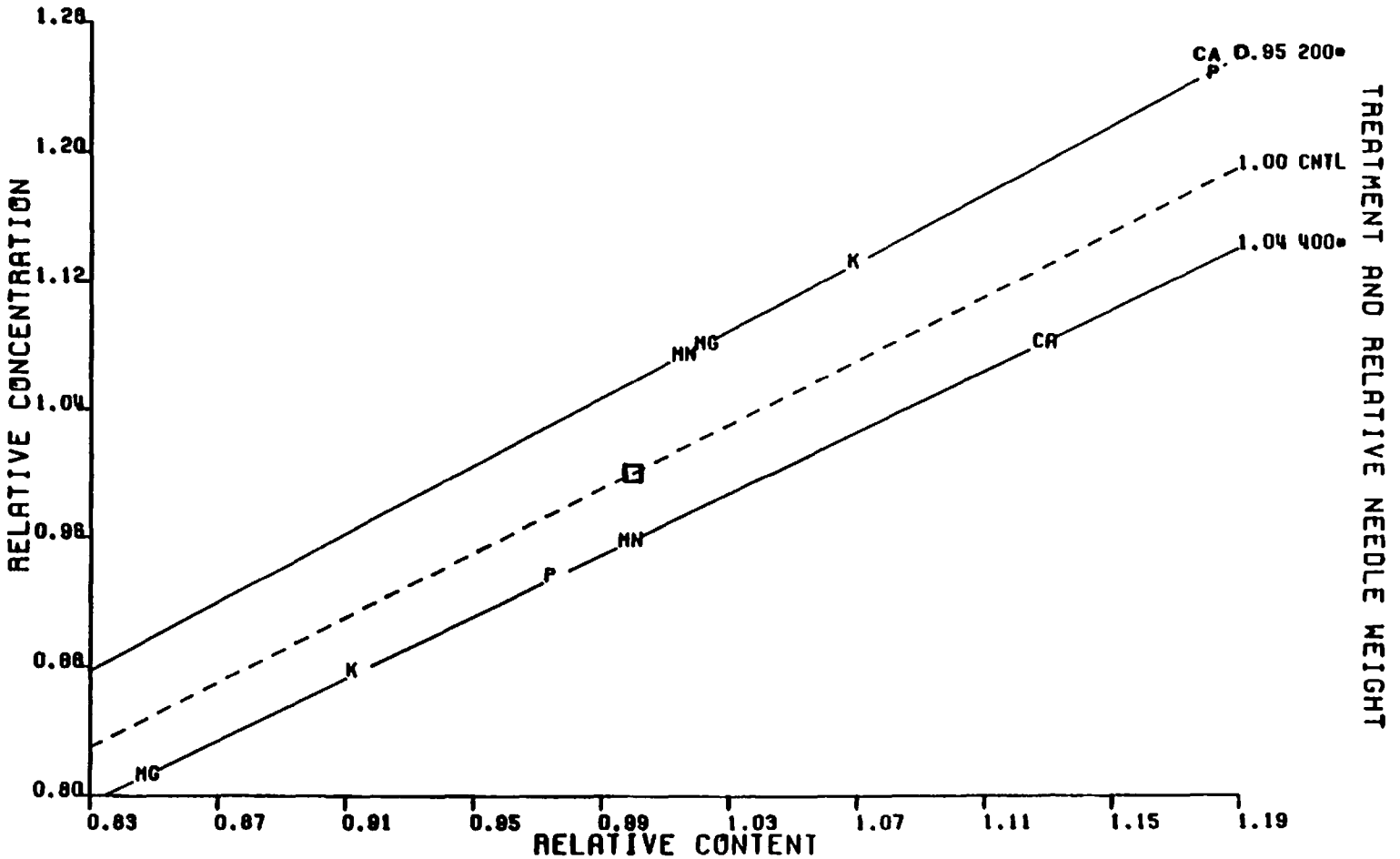
RELATIVE NUTRIENT RESPONSE FOR 226 CLEMAN MT.



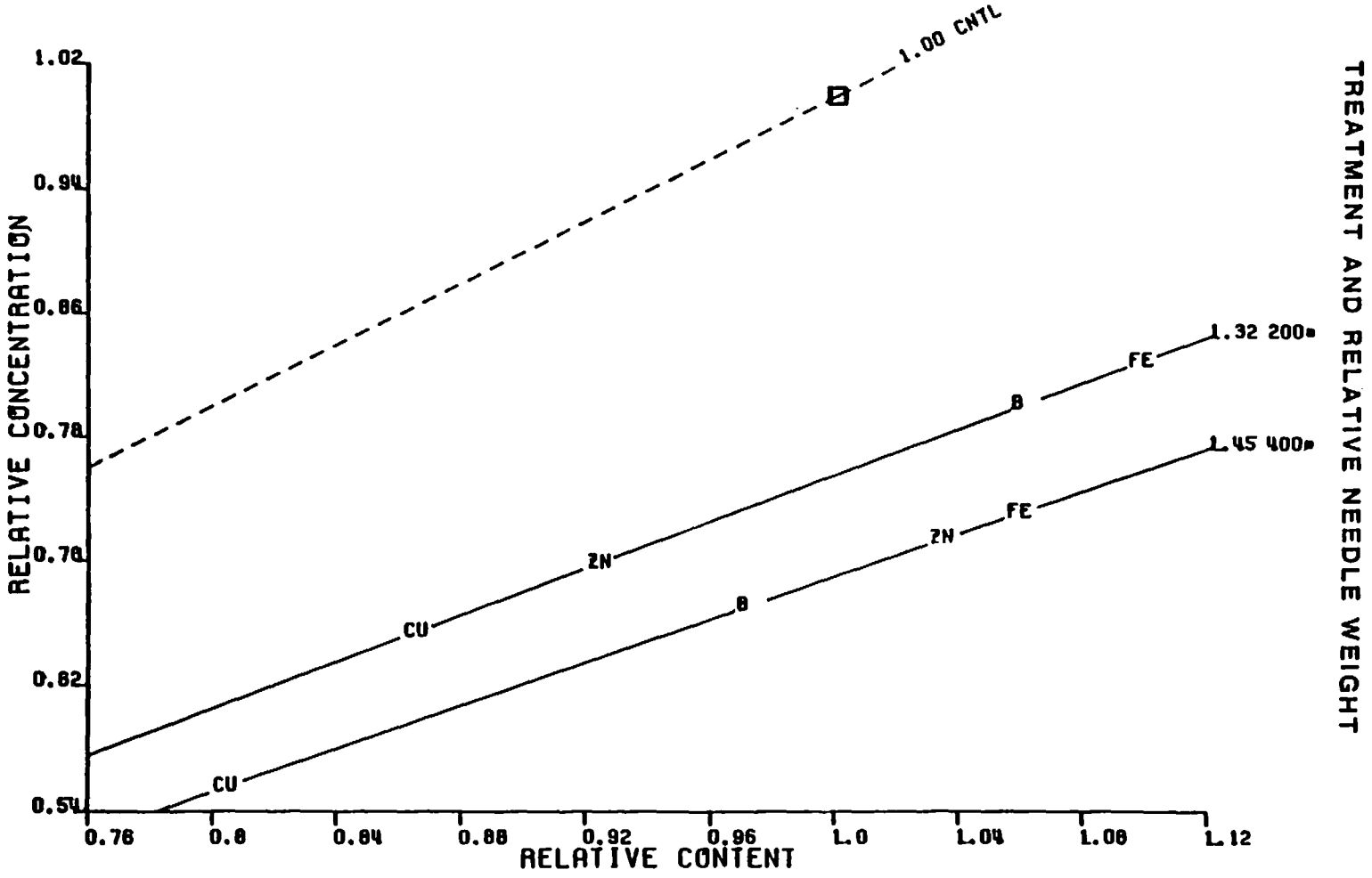
RELATIVE NUTRIENT RESPONSE FOR 227 JOHNSON CANYON



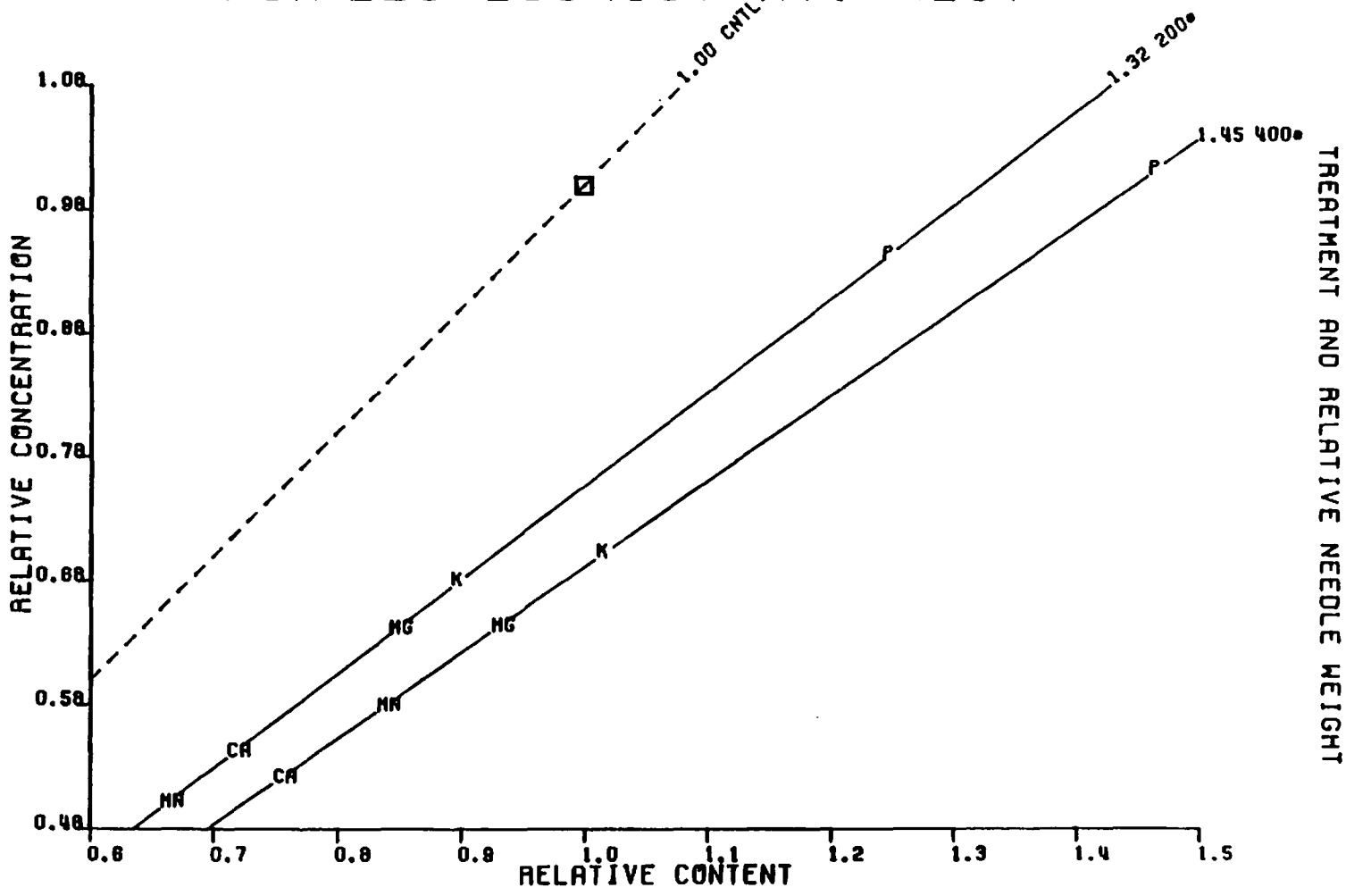
RELATIVE NUTRIENT RESPONSE FOR 227 JOHNSON CANYON



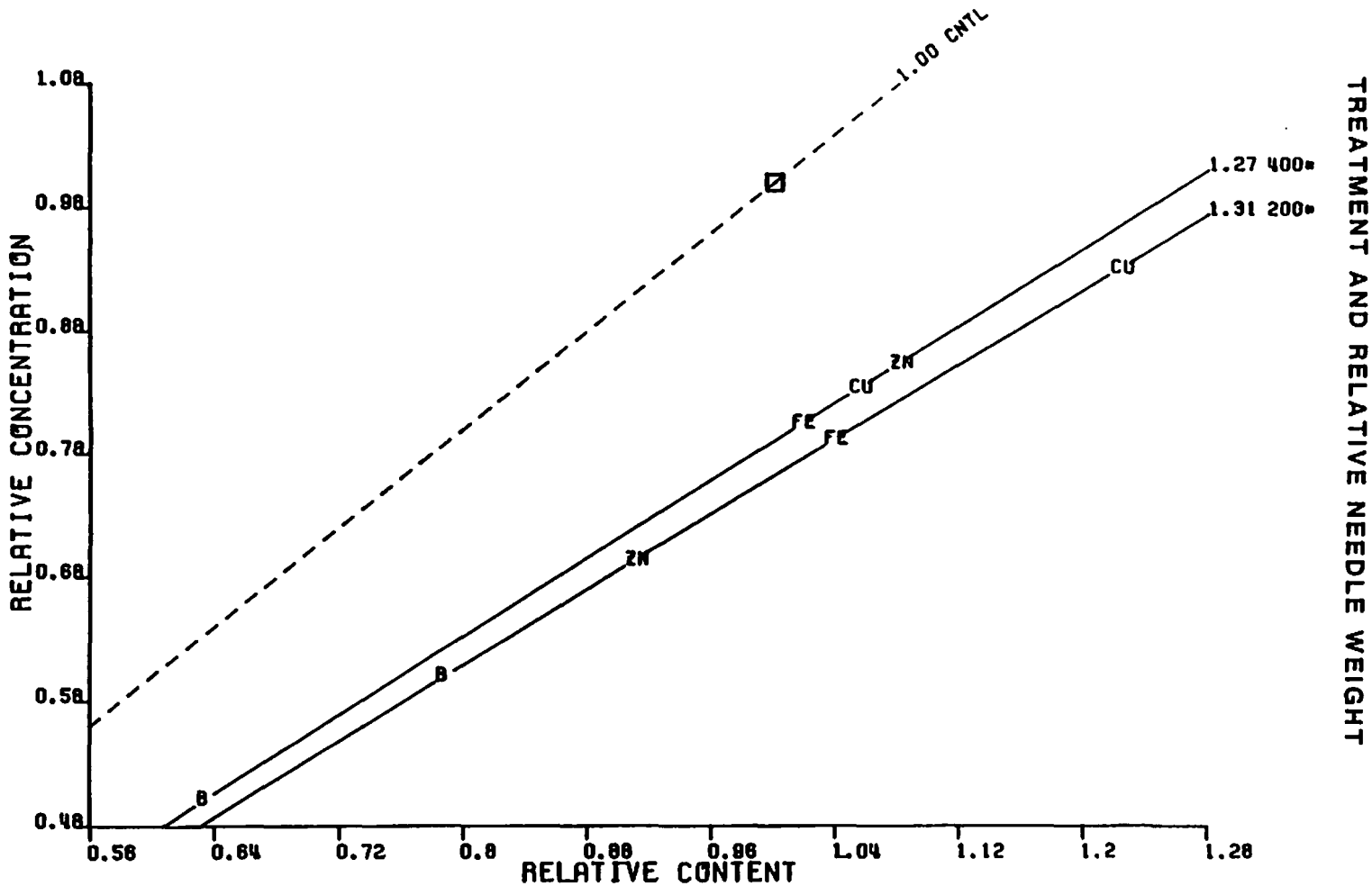
RELATIVE NUTRIENT RESPONSE FOR 228 LOOKOUT MT. EAST



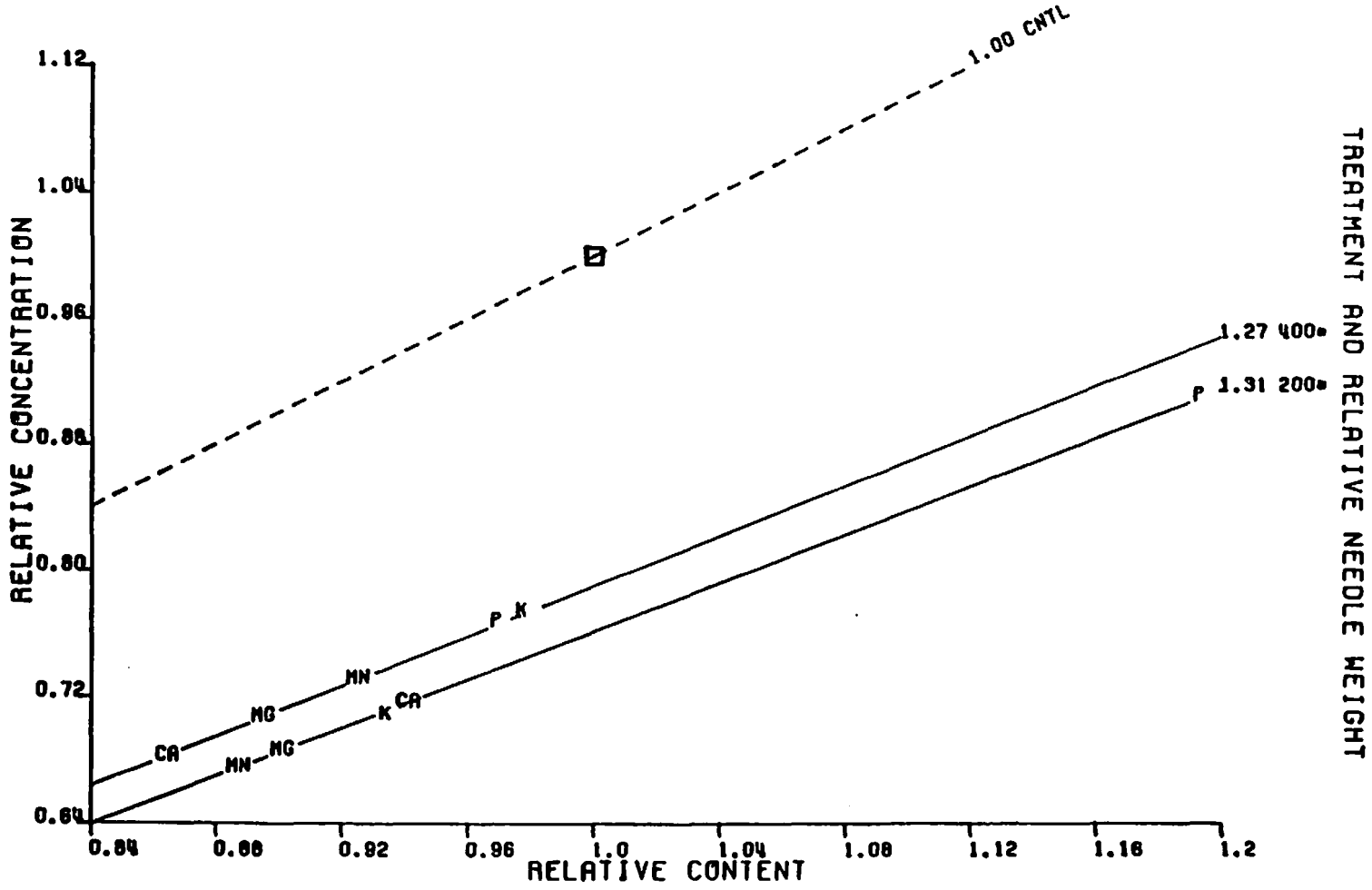
RELATIVE NUTRIENT RESPONSE FOR 228 LOOKOUT MT. WEST



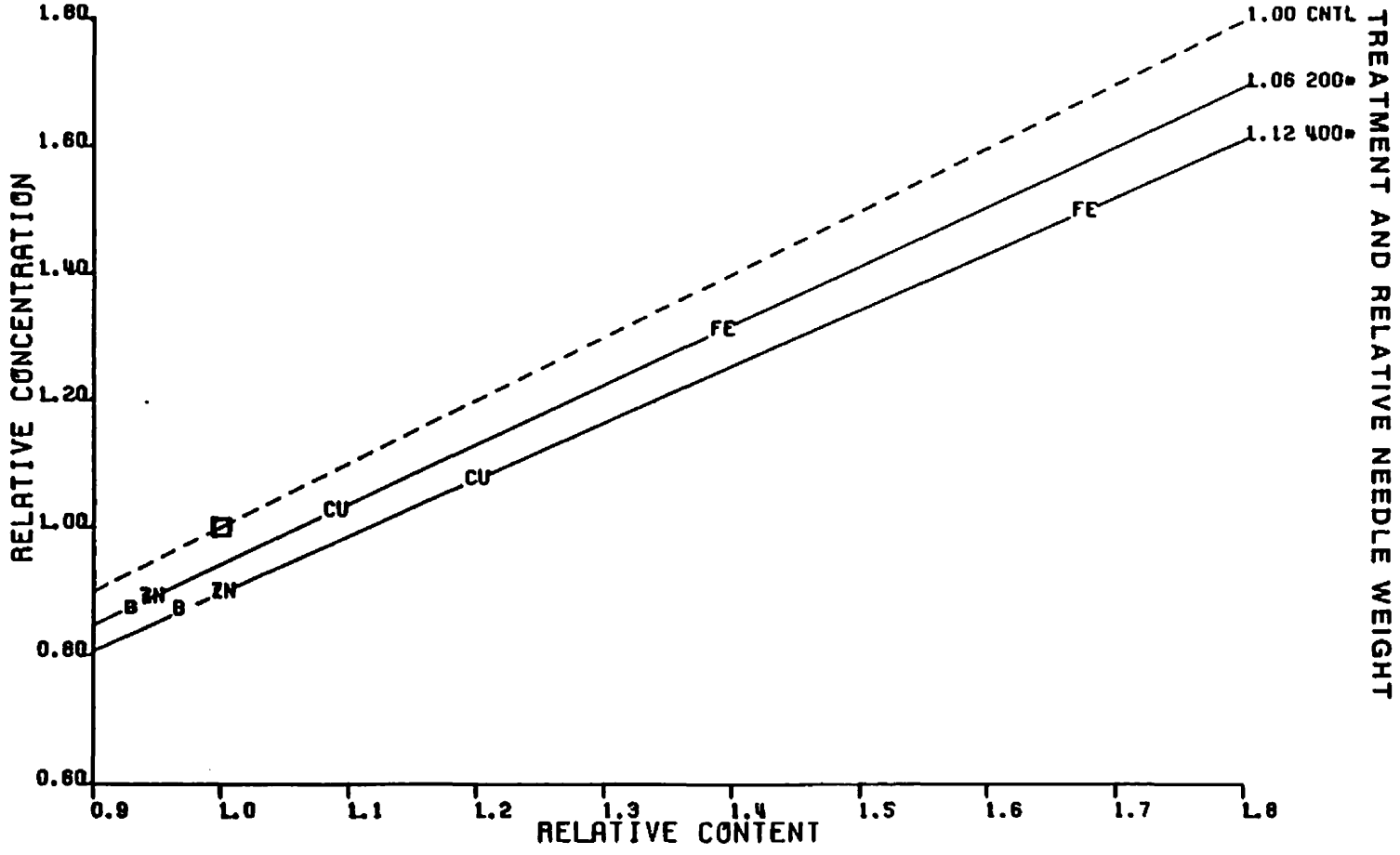
RELATIVE NUTRIENT RESPONSE FOR 229 LOOKOUT MT. EAST



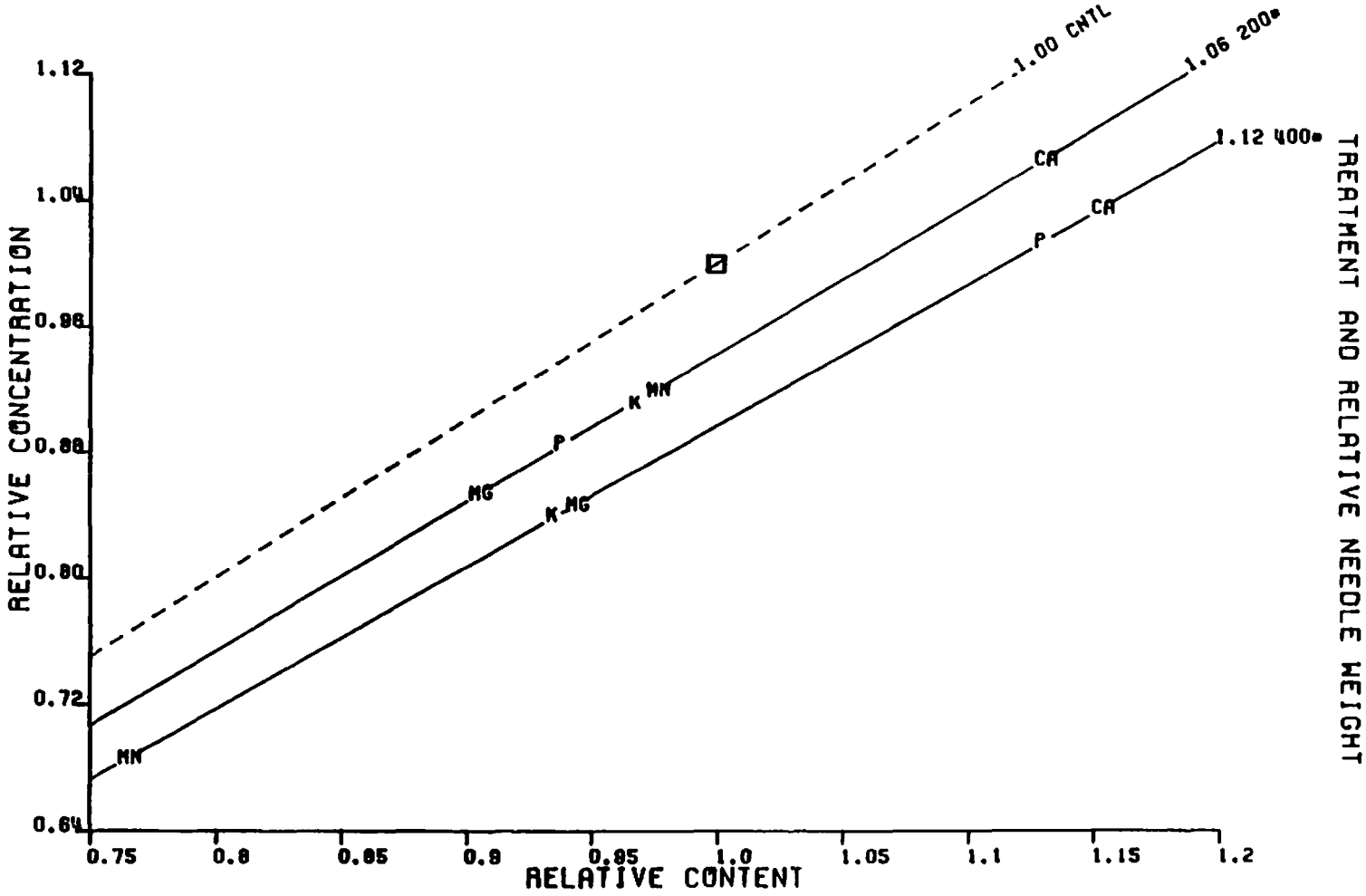
RELATIVE NUTRIENT RESPONSE FOR 229 LOOKOUT MT. EAST



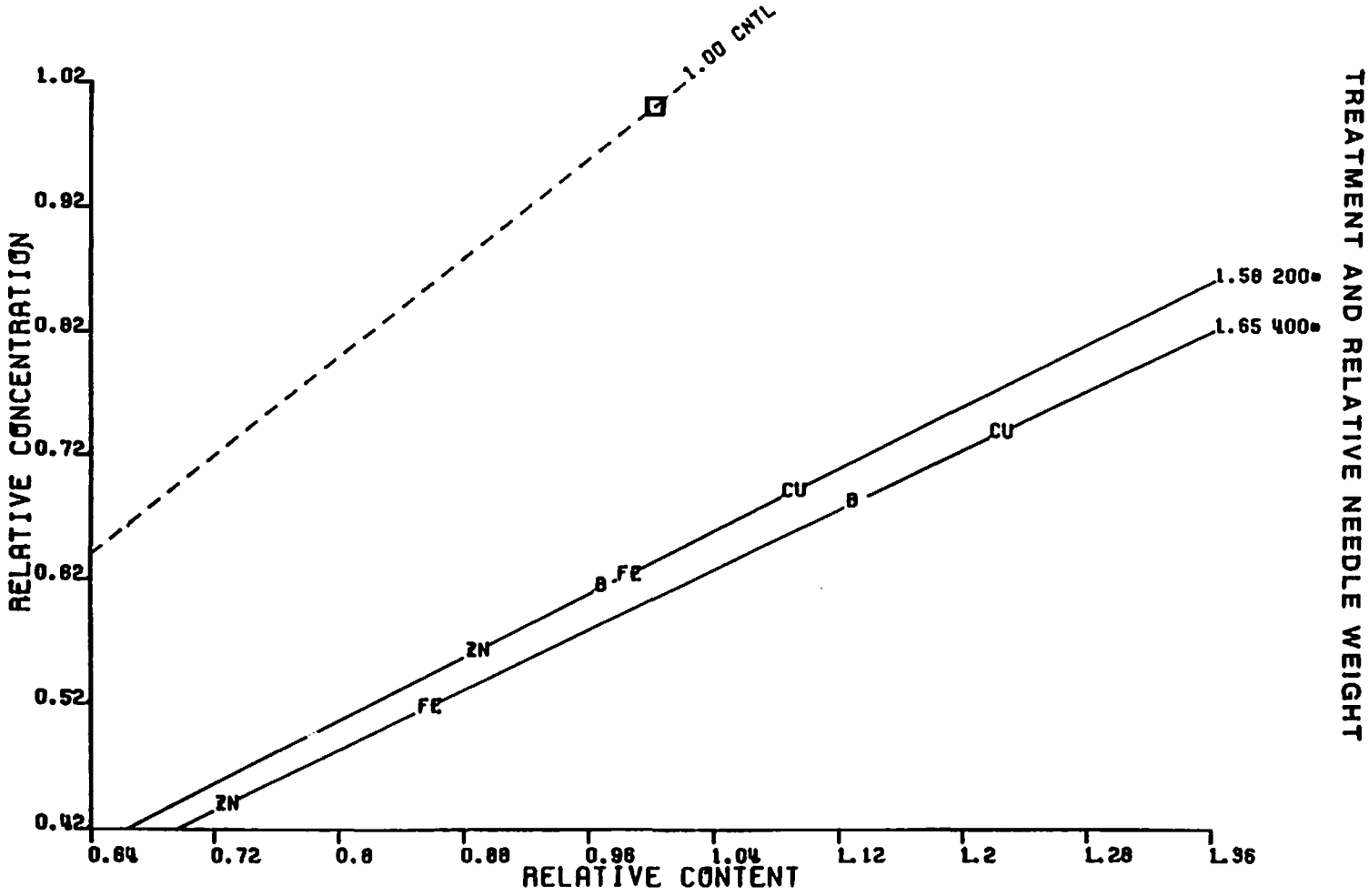
RELATIVE NUTRIENT RESPONSE FOR 230 N.F. TEANAWAY R.



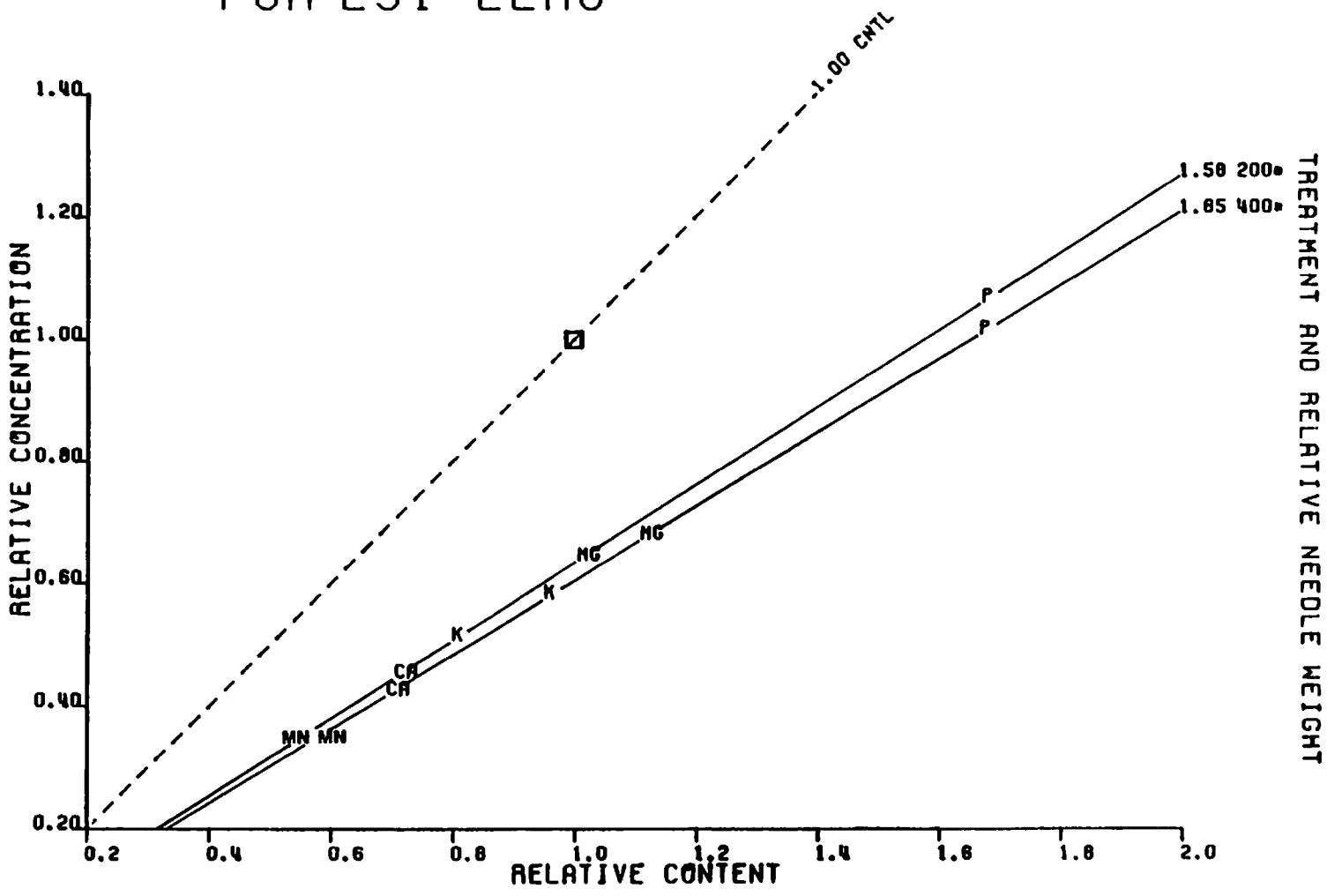
RELATIVE NUTRIENT RESPONSE FOR 230 M.F. TEANAWAY R.



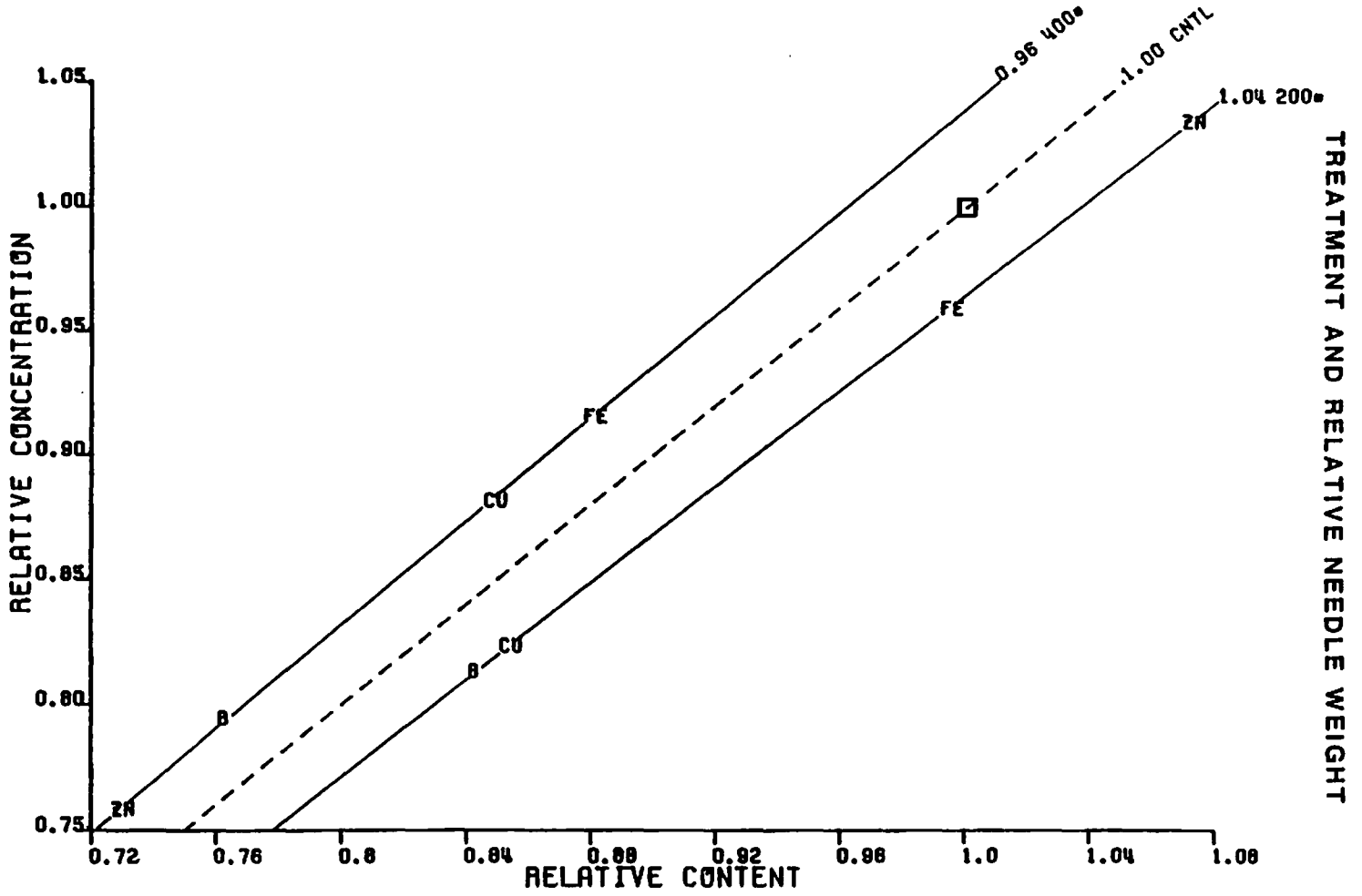
RELATIVE NUTRIENT RESPONSE FOR 231 ELMO



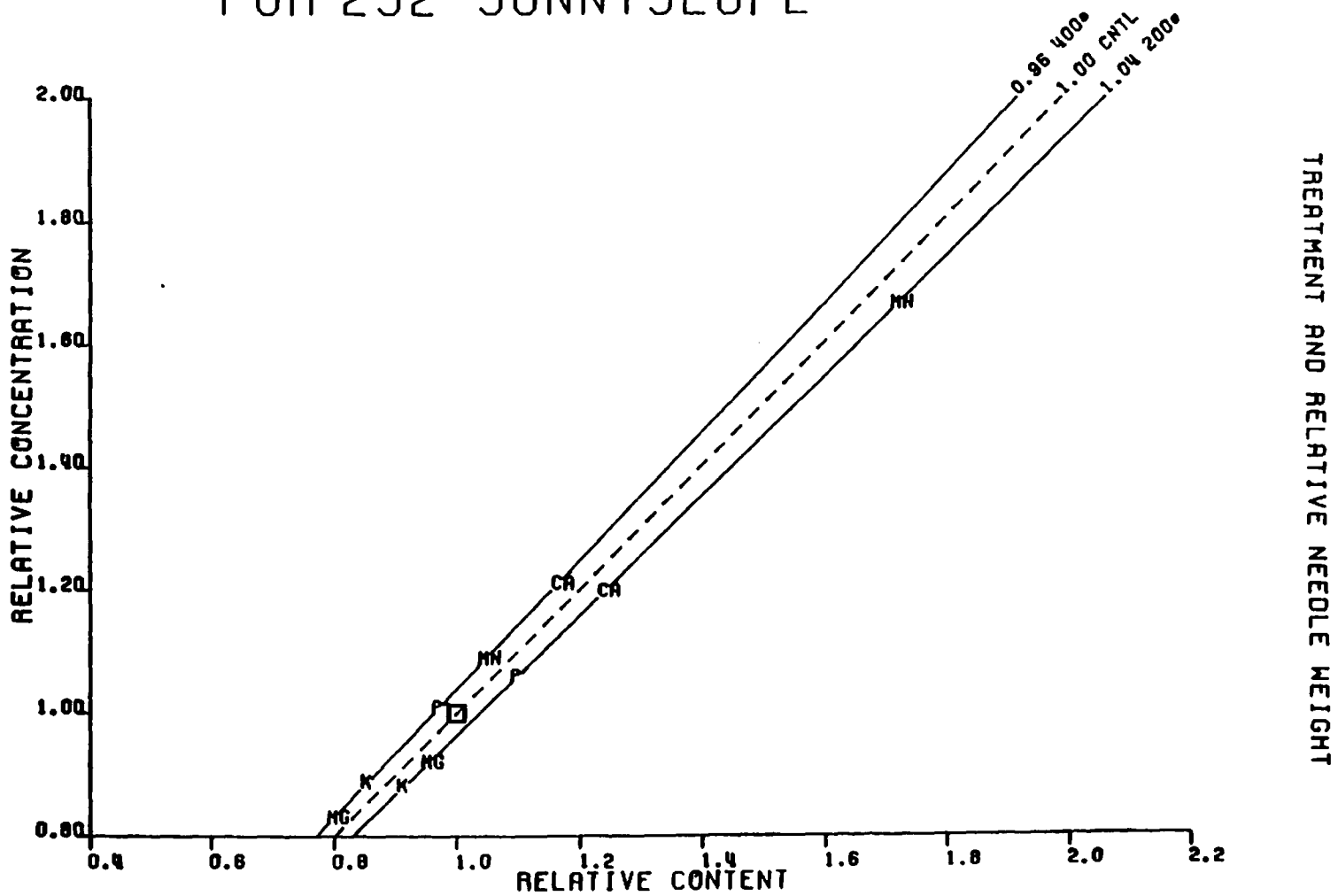
RELATIVE NUTRIENT RESPONSE FOR 231 ELMO



RELATIVE NUTRIENT RESPONSE FOR 232 SUNNYSLOPE

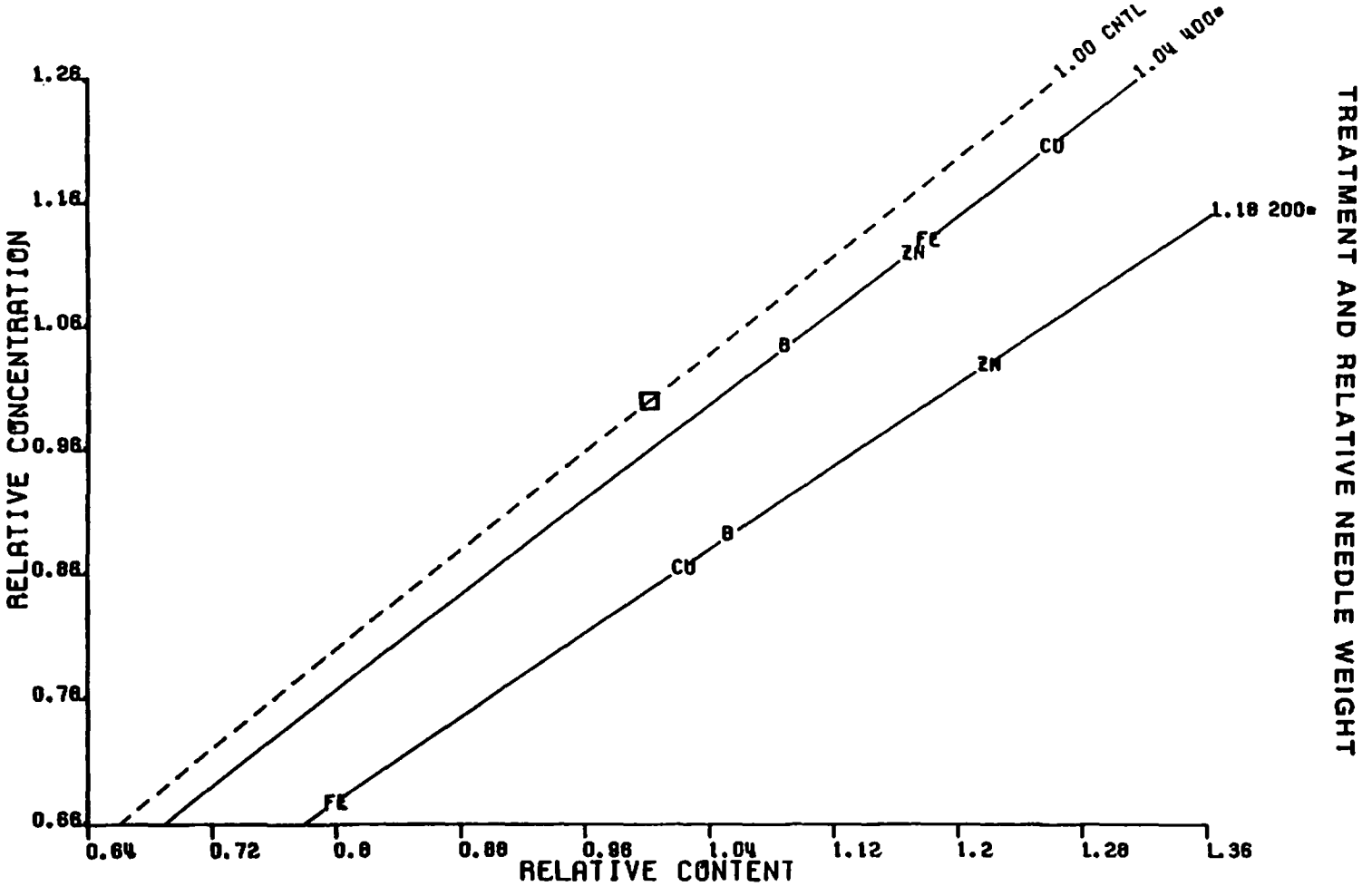


RELATIVE NUTRIENT RESPØNSE FØR 232 SUNNYSLØPE

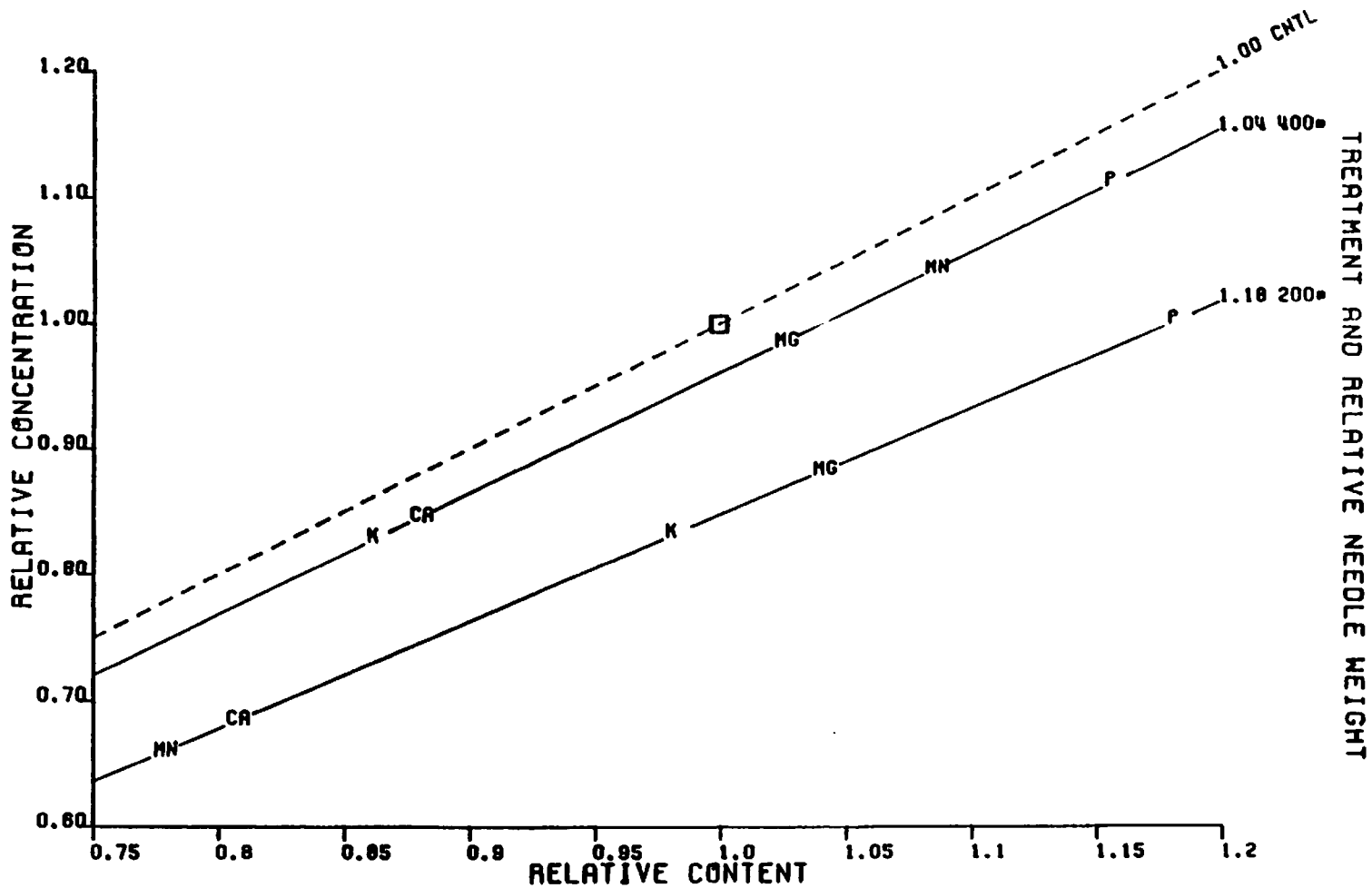


TREATMENT AND RELATIVE NEEDLE WEIGHT

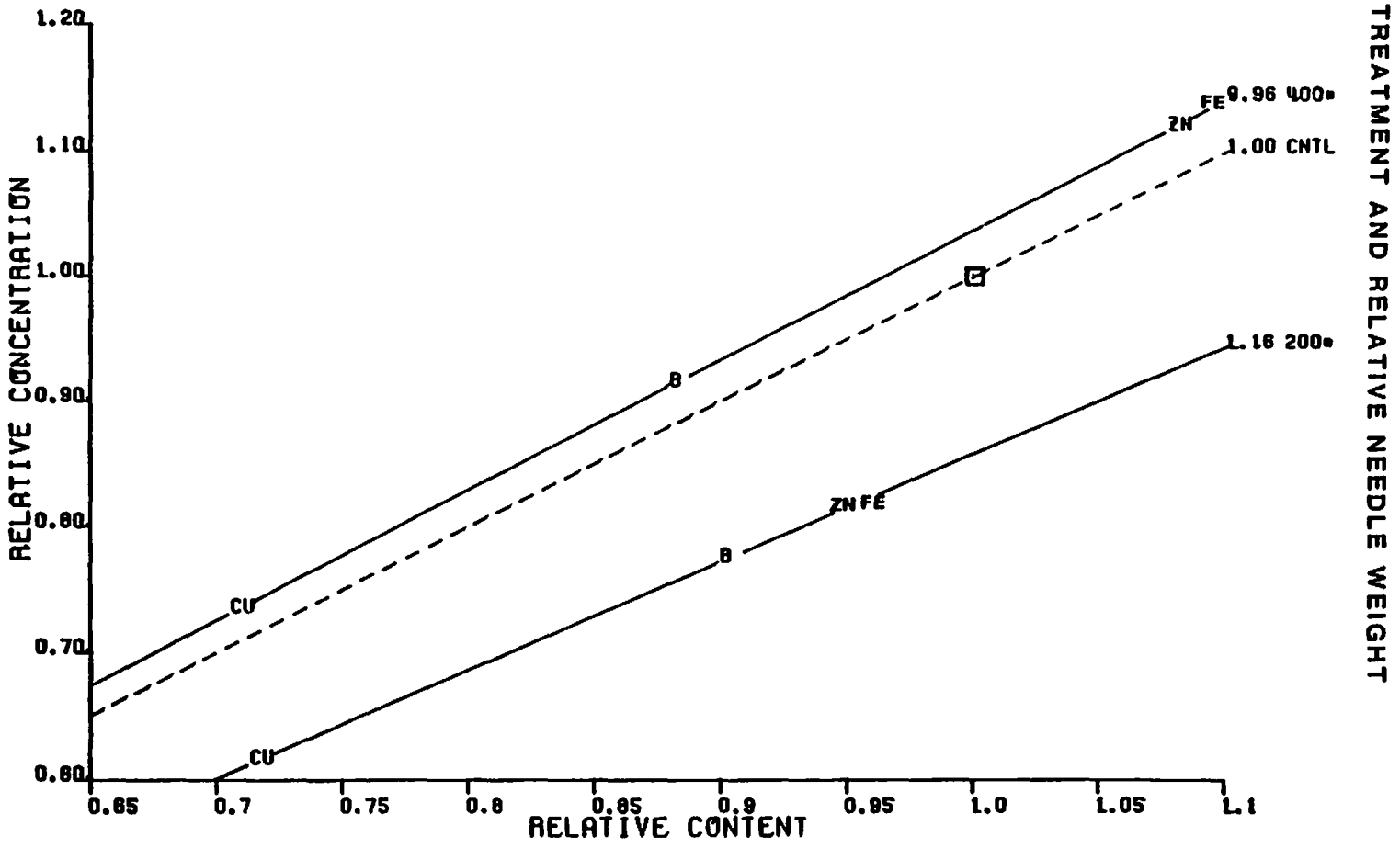
RELATIVE NUTRIENT RESPONSE FOR 233 HELLROARING CR.



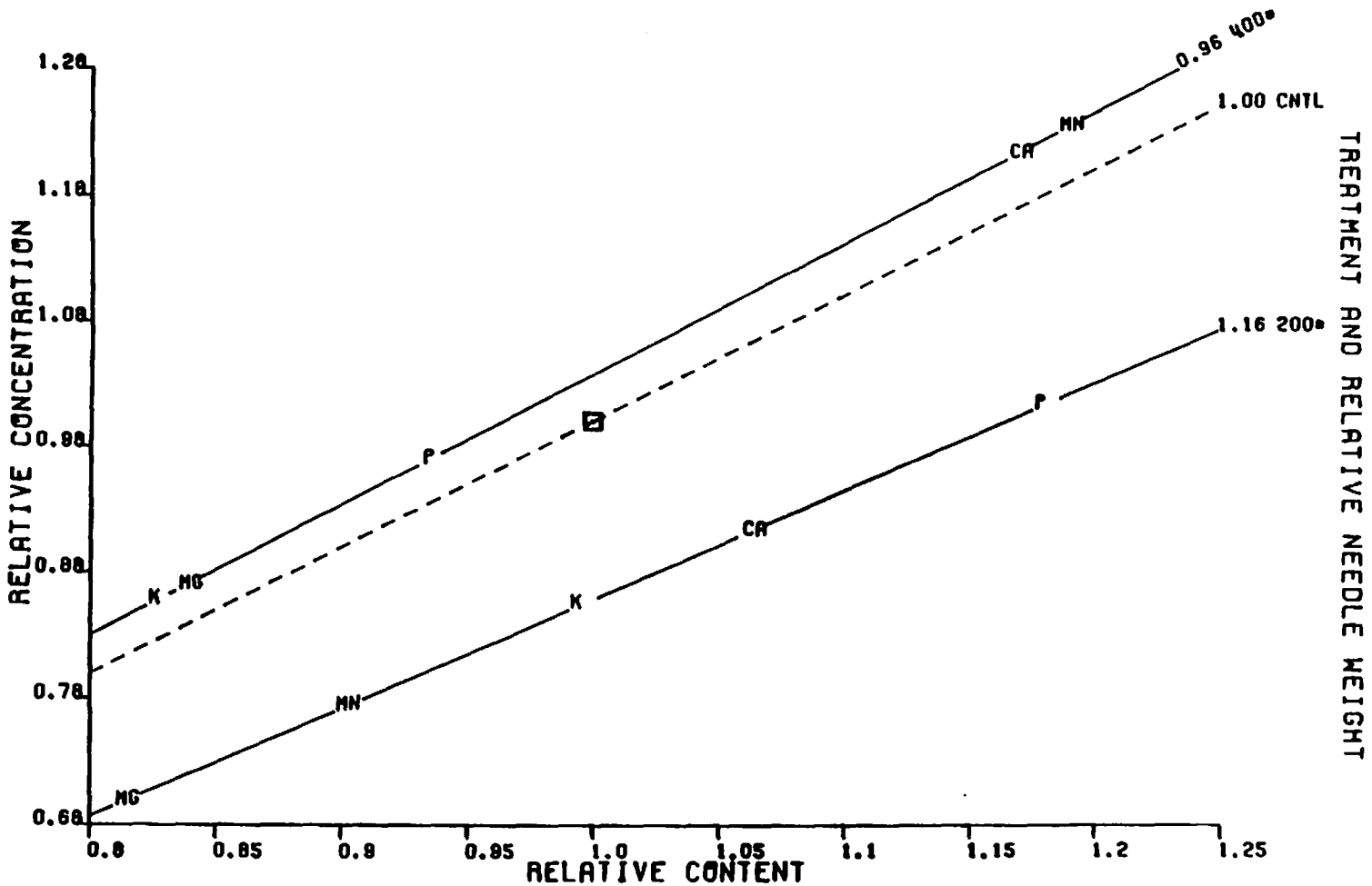
RELATIVE NUTRIENT RESPONSE FOR 233 HELLROARING CR.



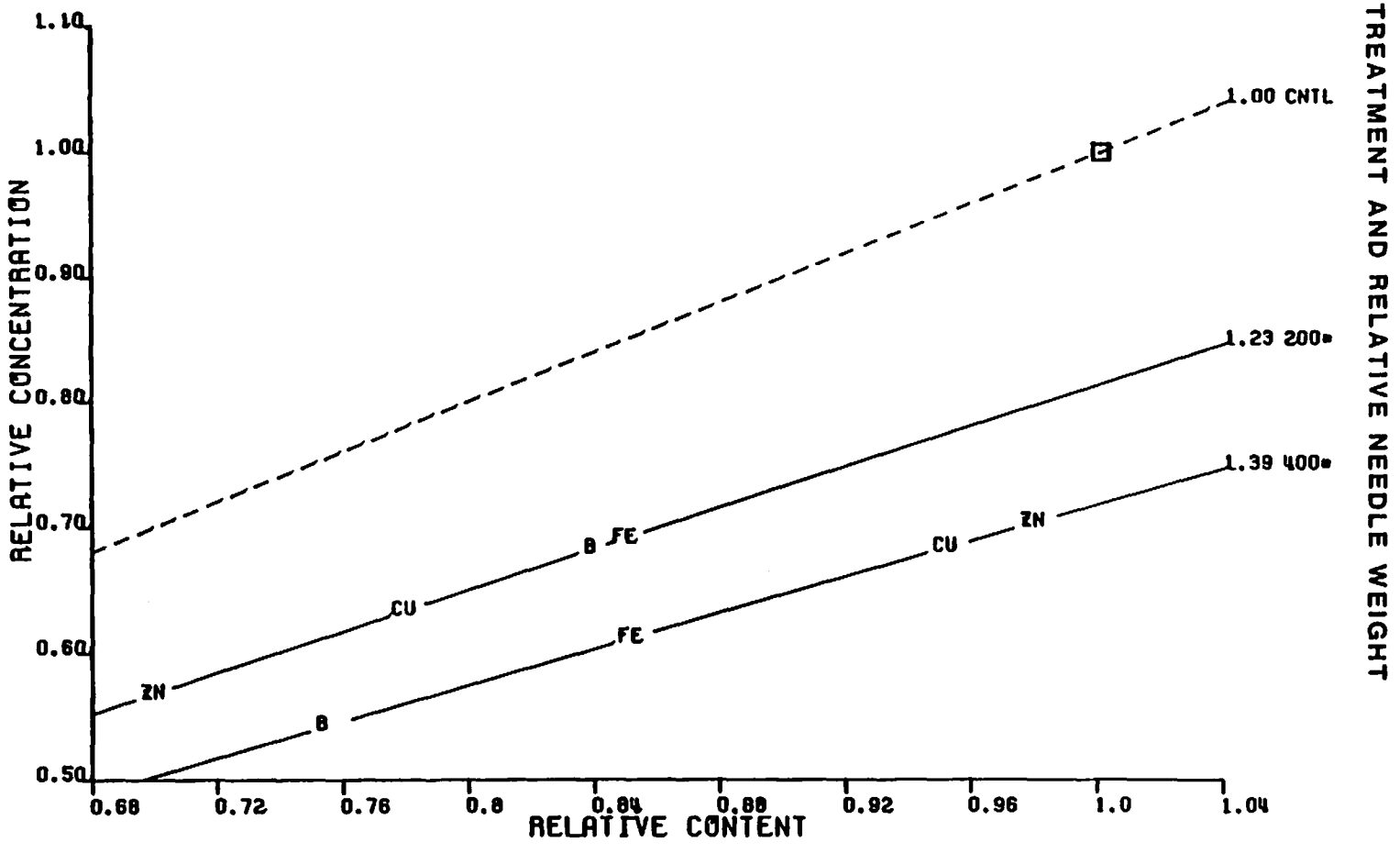
RELATIVE NUTRIENT RESPØNSE FØR 234 RØNAN



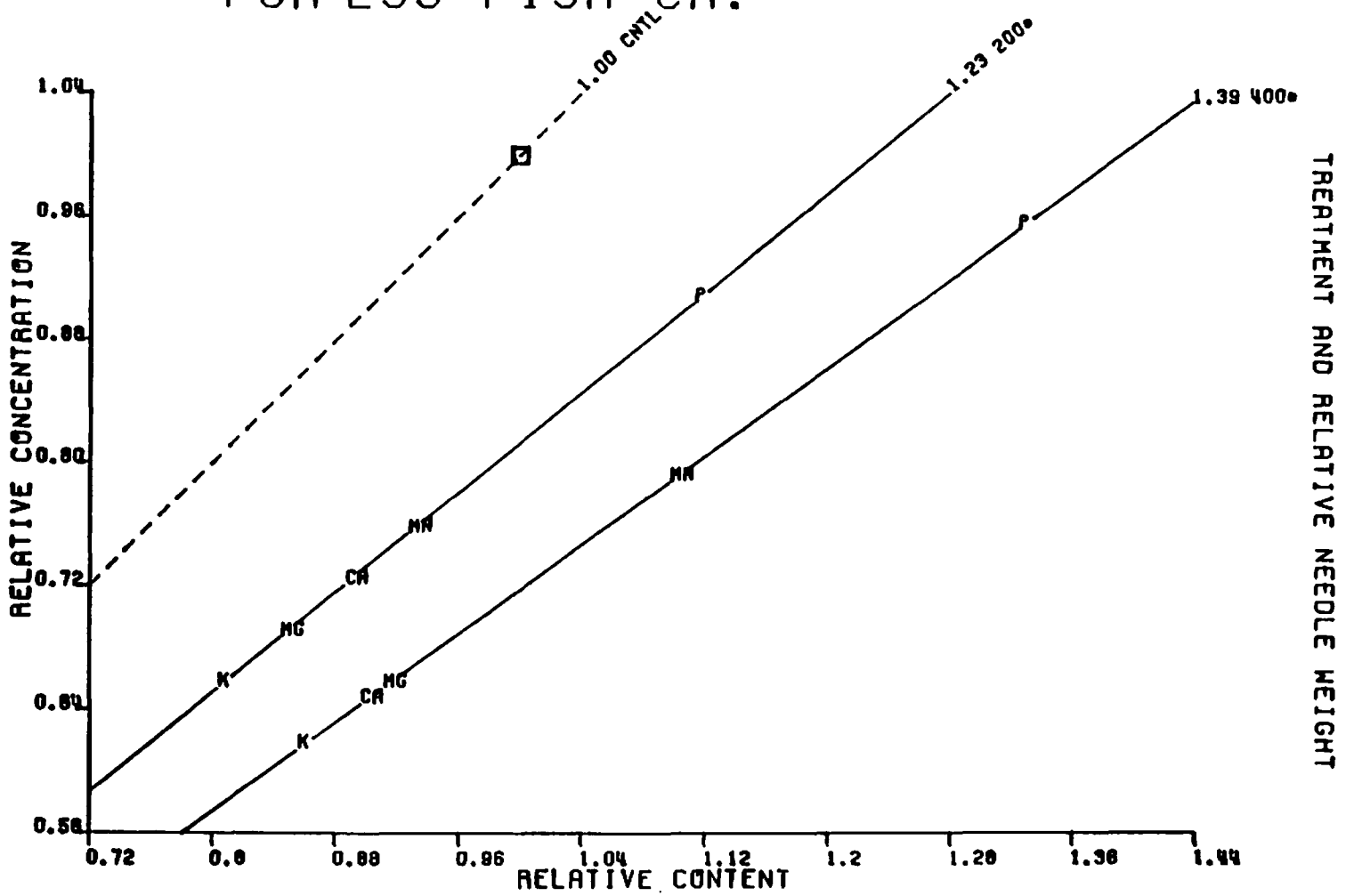
RELATIVE NUTRIENT RESPØNSE FØR 234 RØNAN



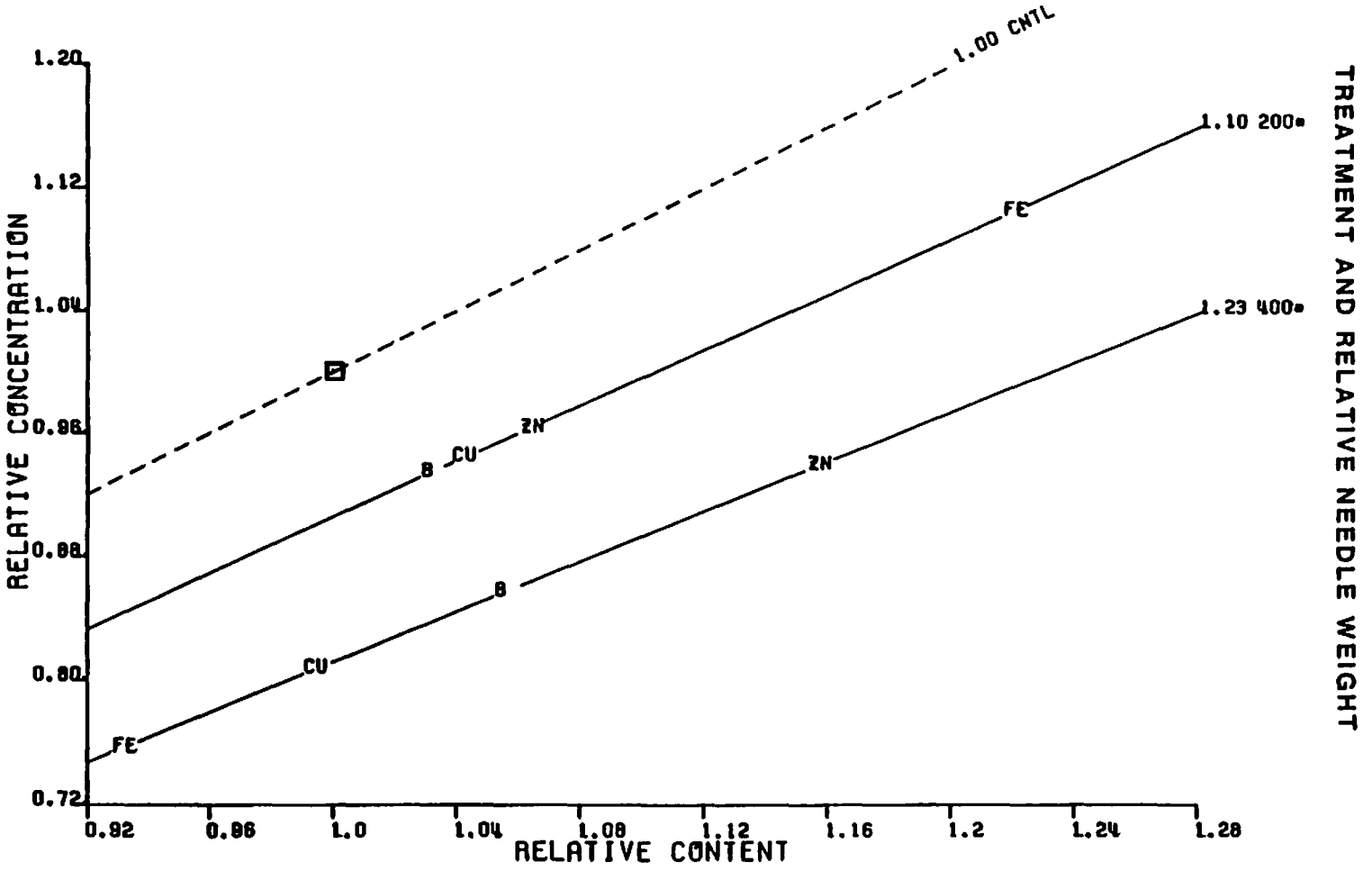
RELATIVE NUTRIENT RESPØNSE FØR 235 FISH CR.



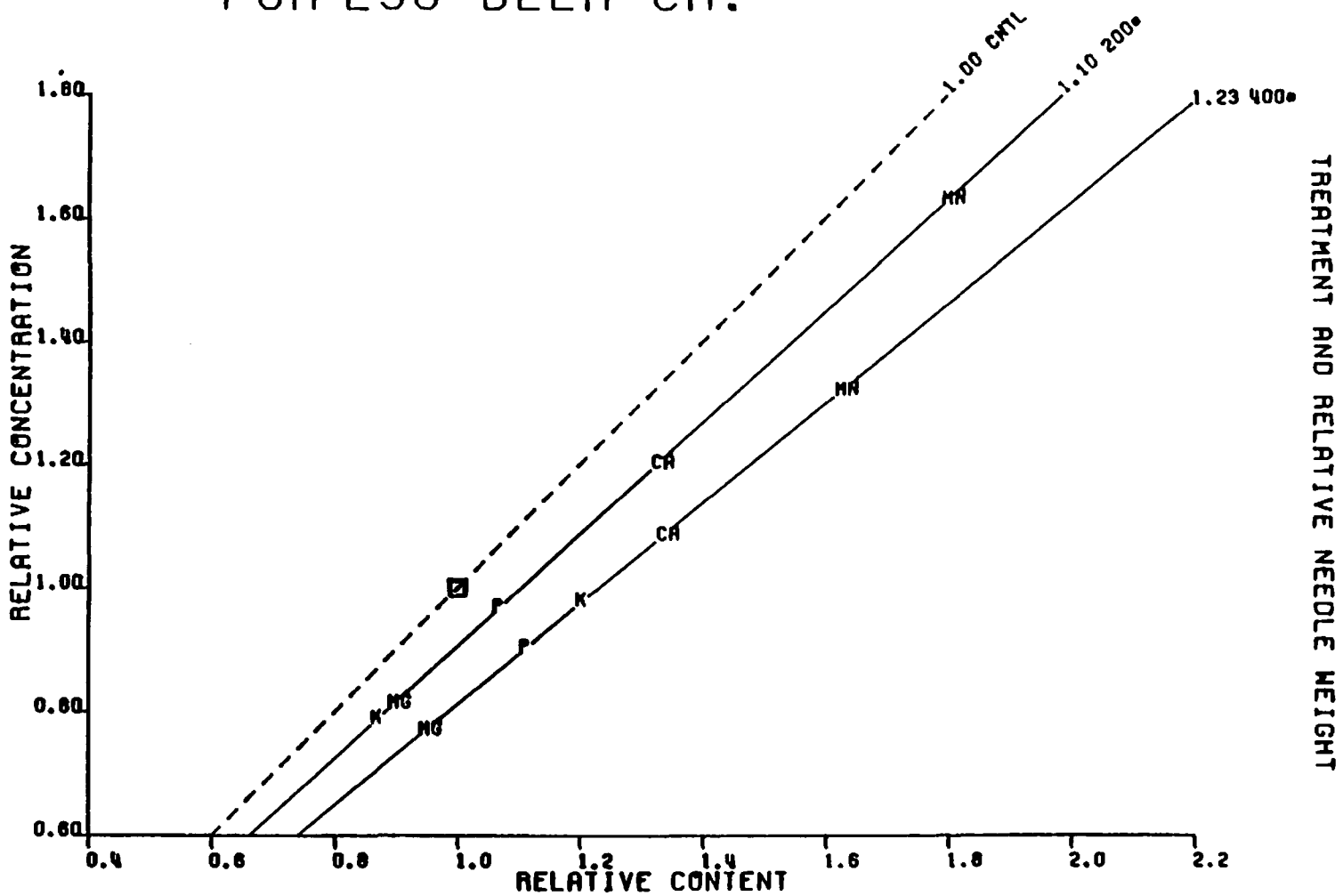
RELATIVE NUTRIENT RESPONSE FOR 235 FISH CR.



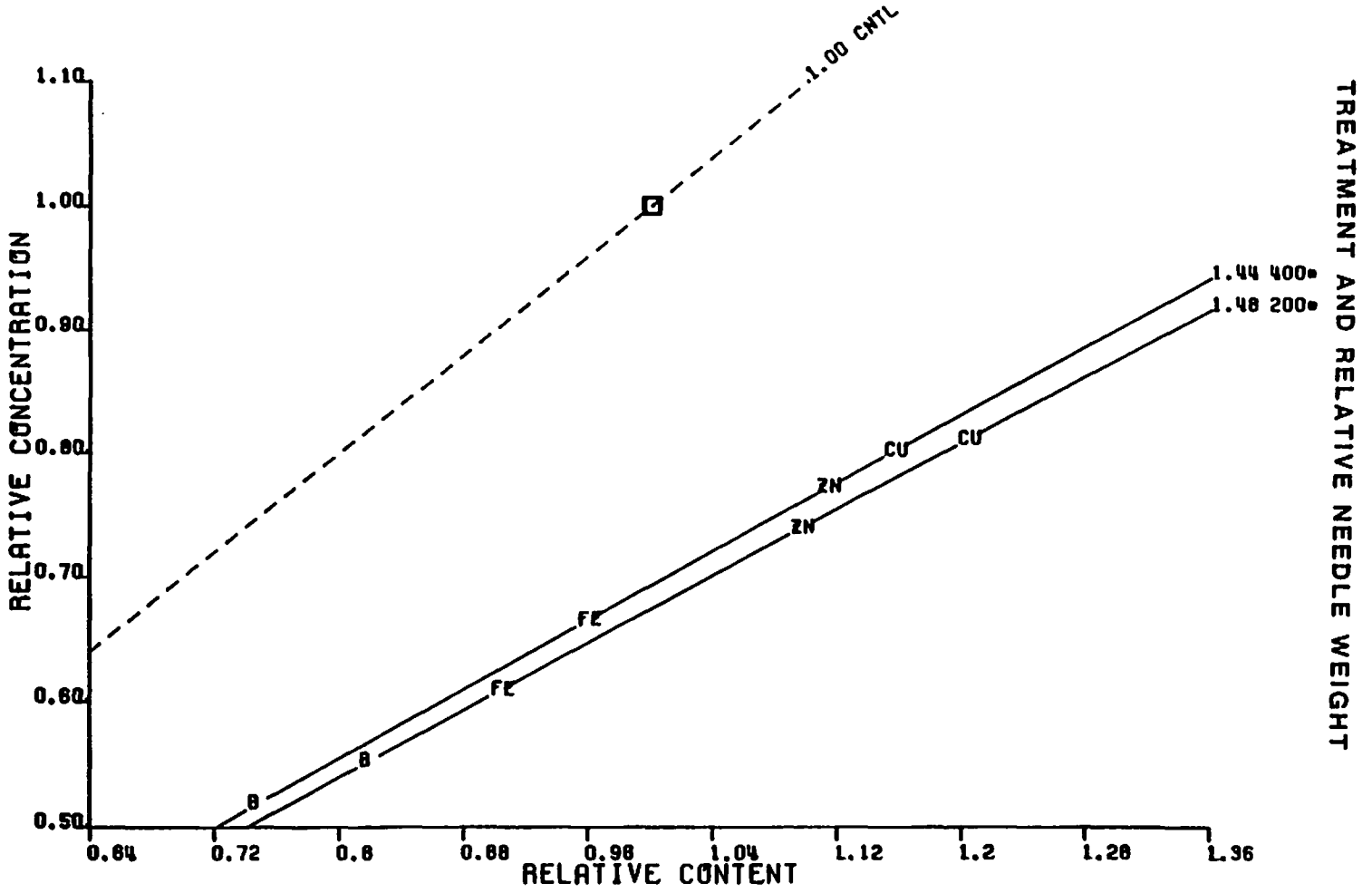
RELATIVE NUTRIENT RESPONSE FOR 236 DEER CR.



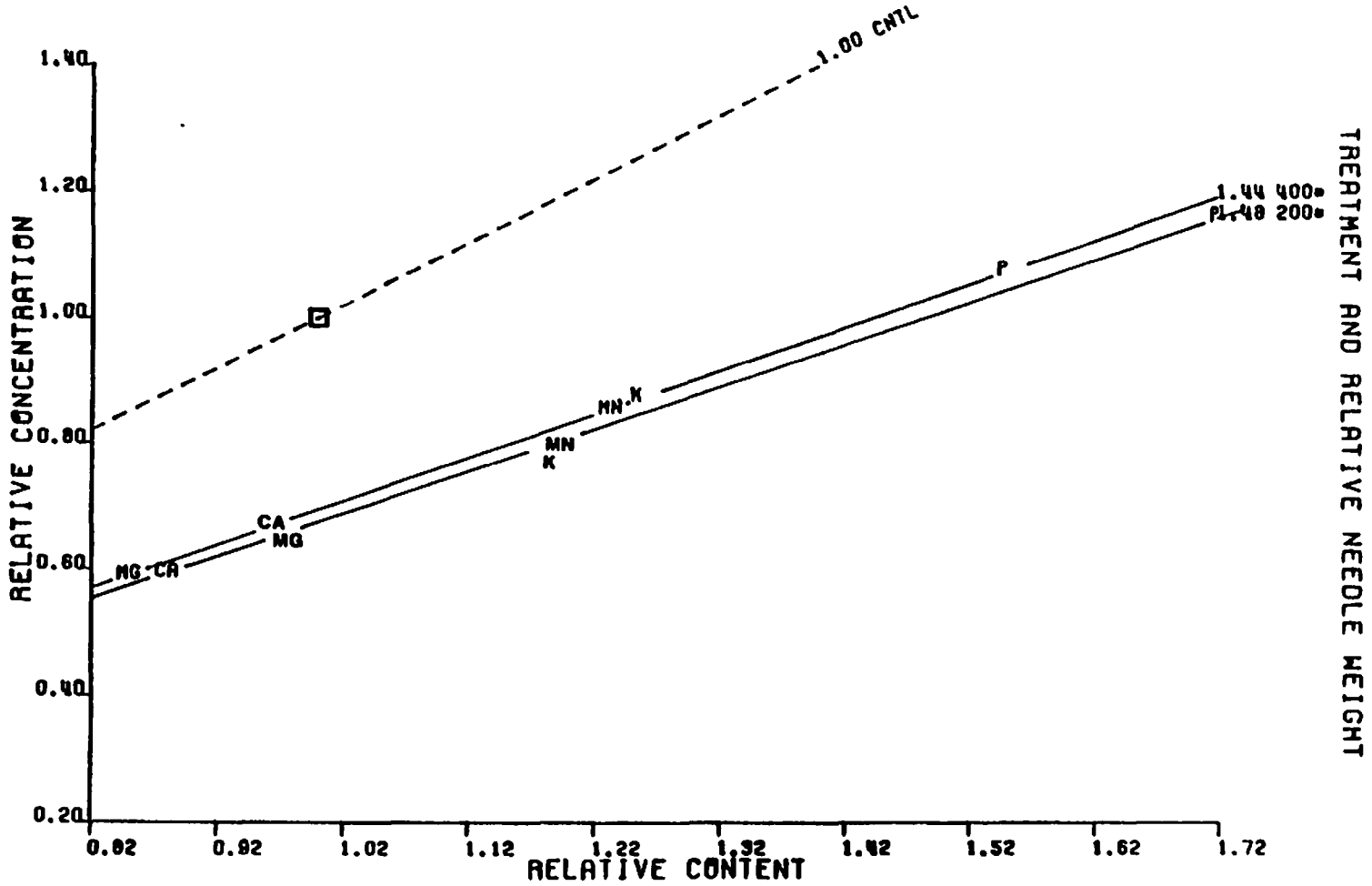
RELATIVE NUTRIENT RESPONSE FOR 236 DEER CR.



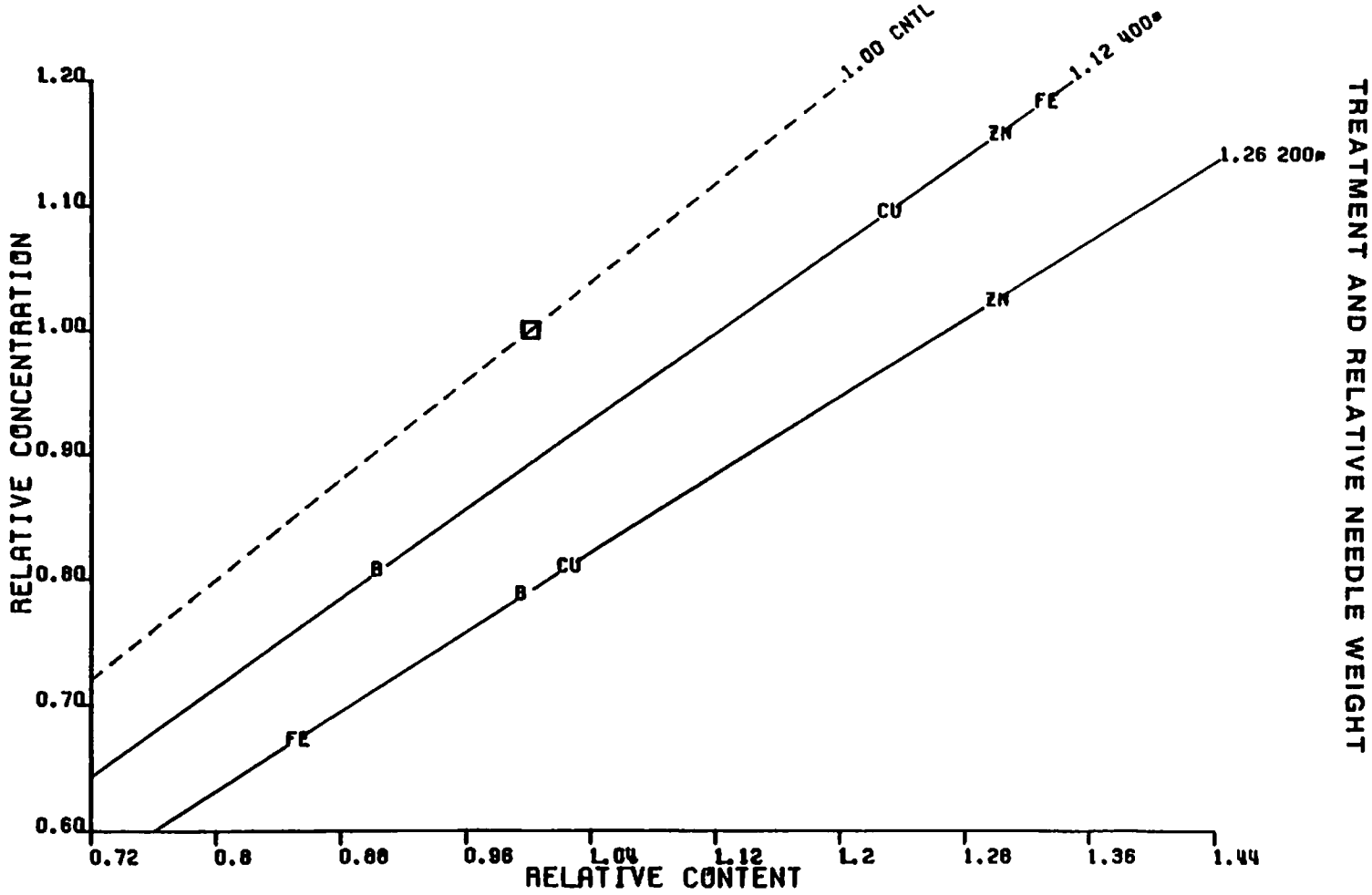
RELATIVE NUTRIENT RESPONSE FØR 237 MØLLET PARK



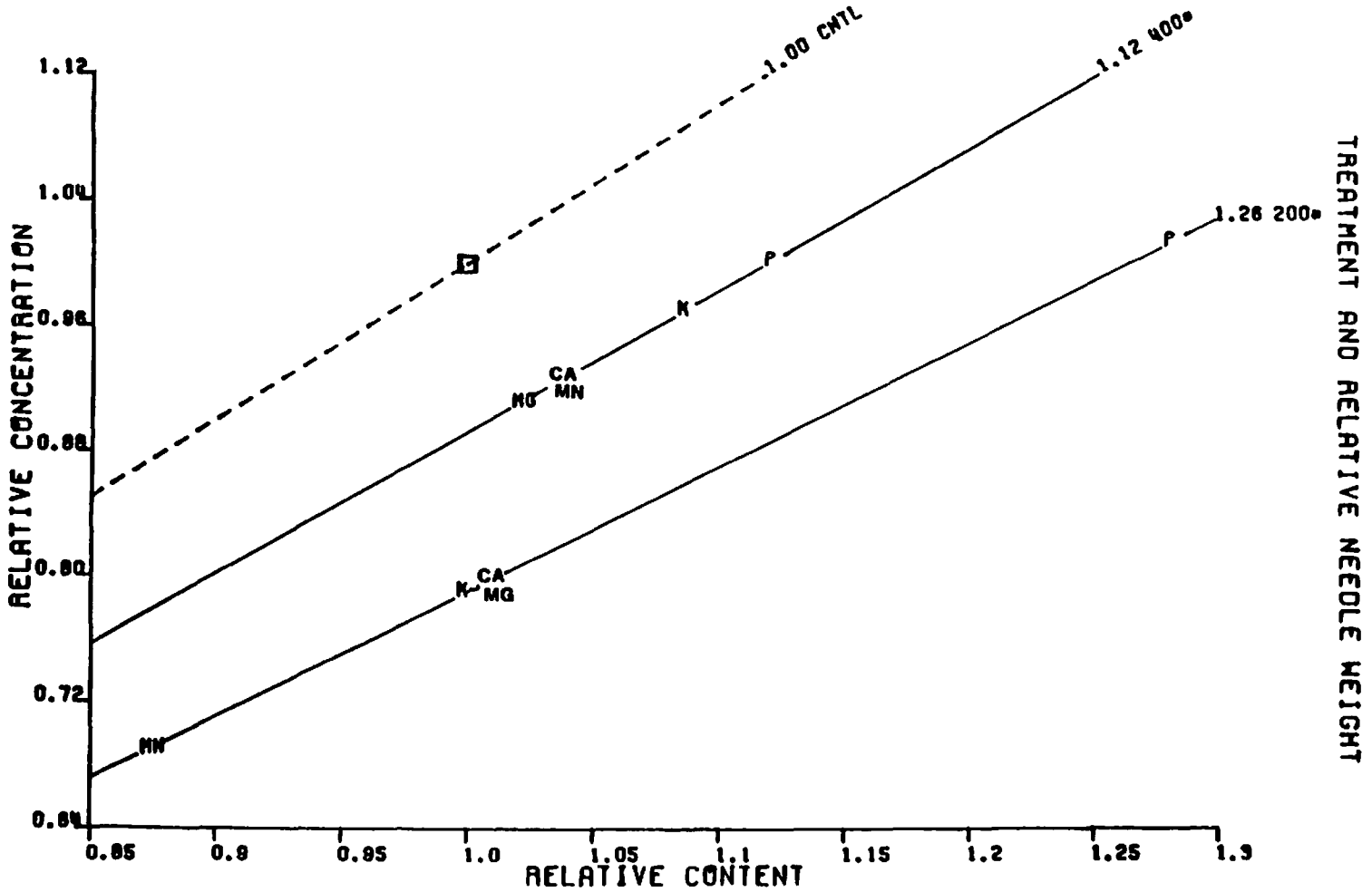
RELATIVE NUTRIENT RESPONSE FOR 237 MOLLET PARK



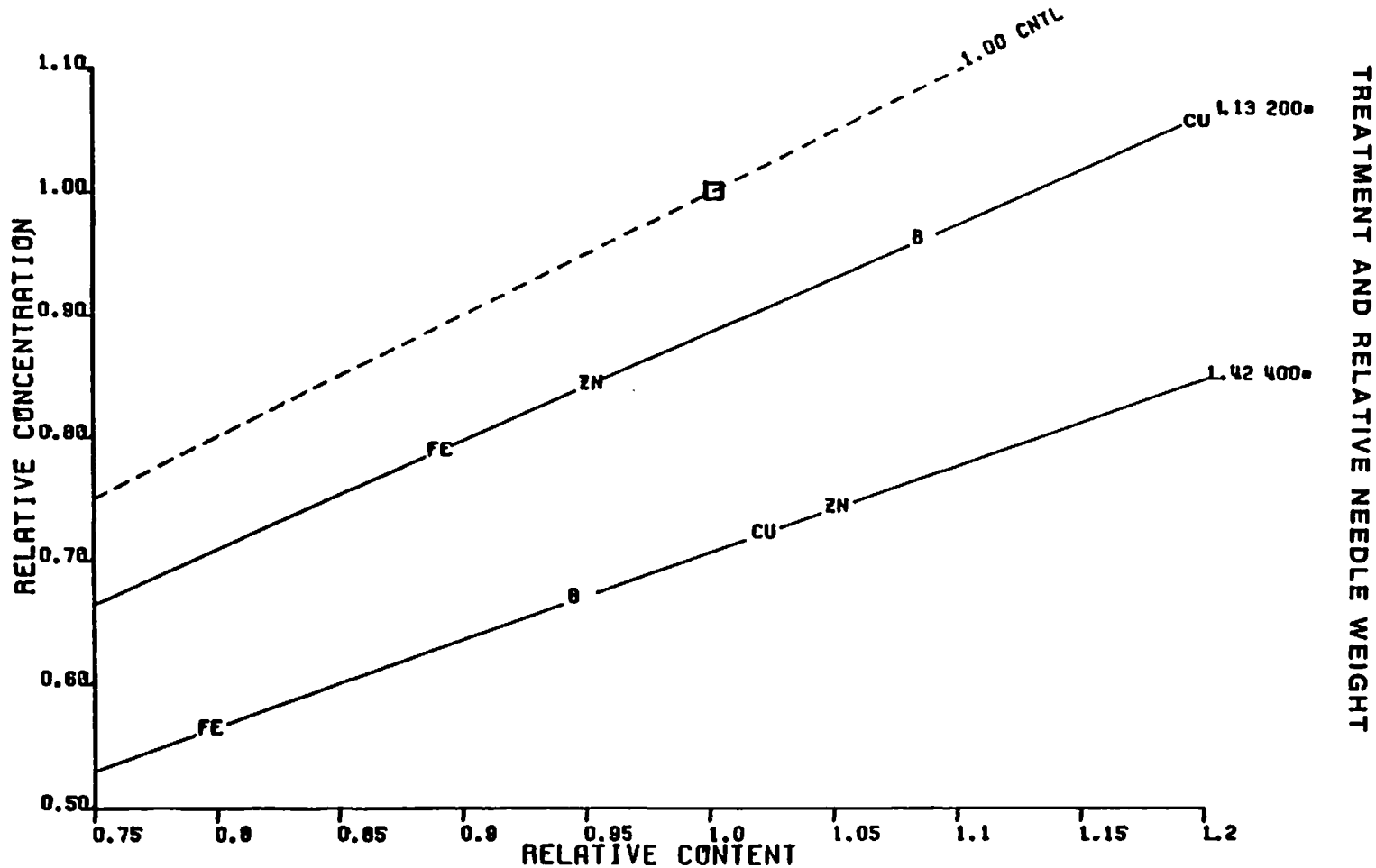
RELATIVE NUTRIENT RESPØNSE FØR 238 BUFFALØ BILL CR.



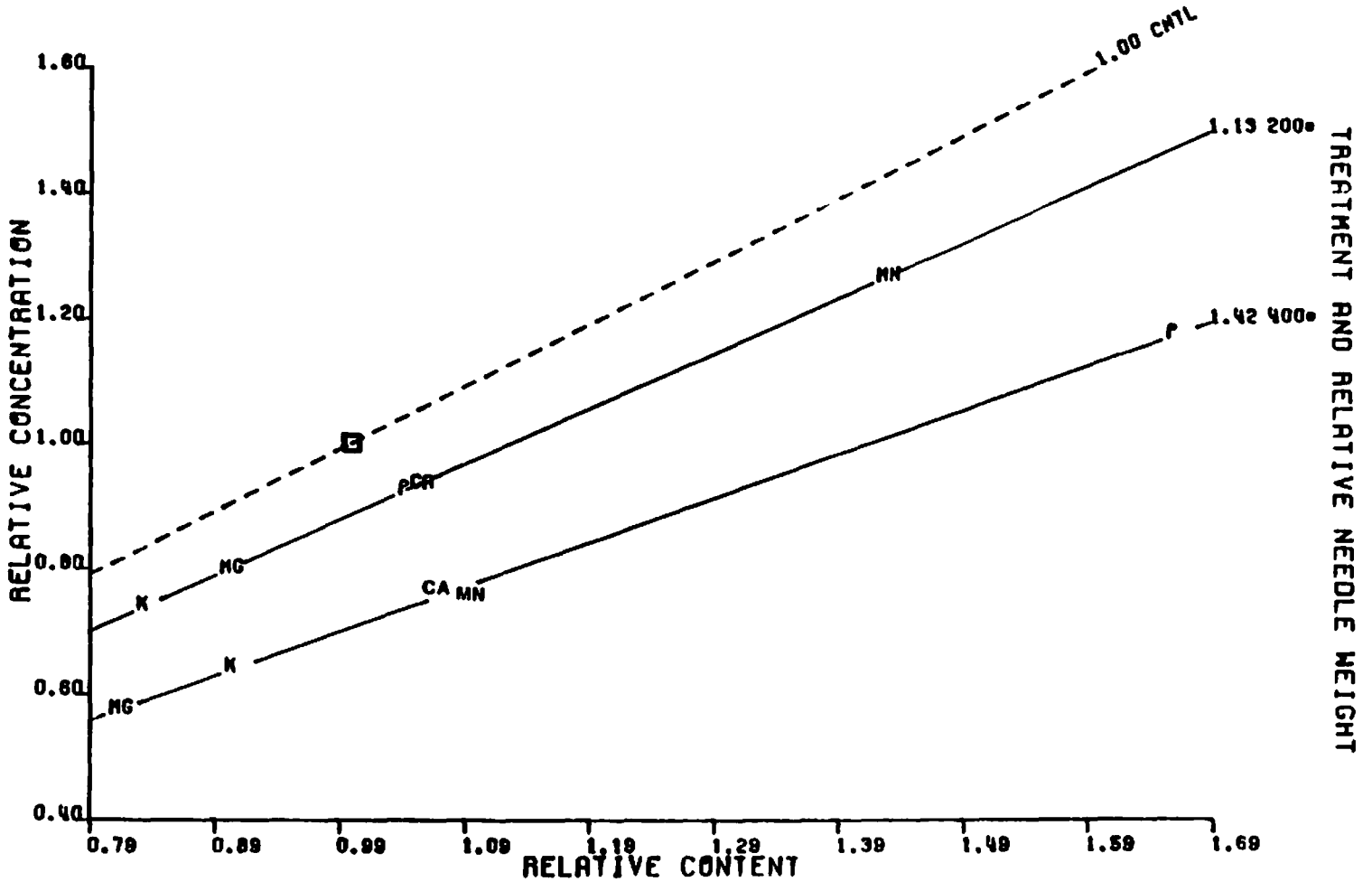
RELATIVE NUTRIENT RESPONSE FOR 238 BUFFALO BILL CR.



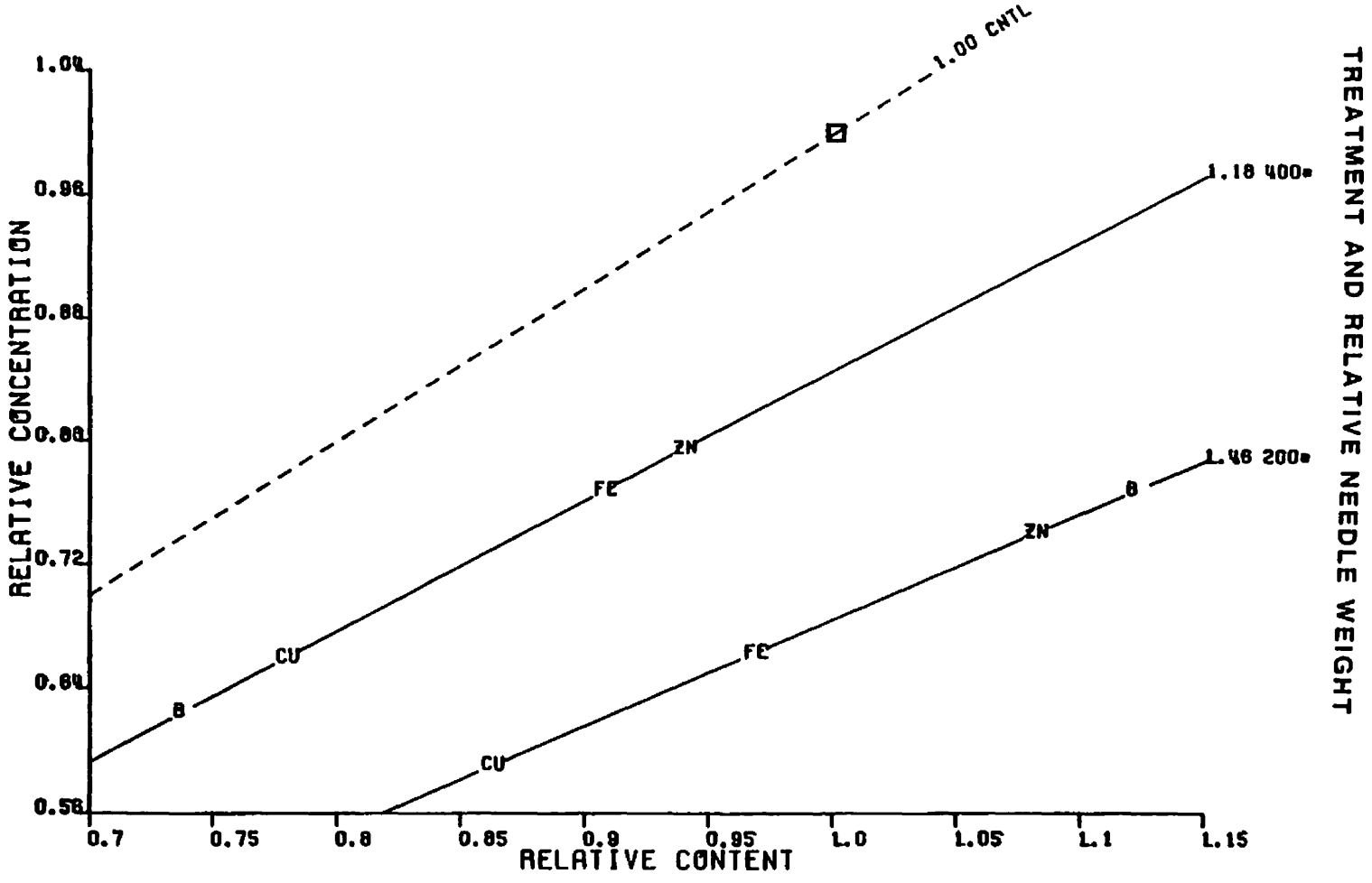
RELATIVE NUTRIENT RESPONSE FOR 239 WAHA #2



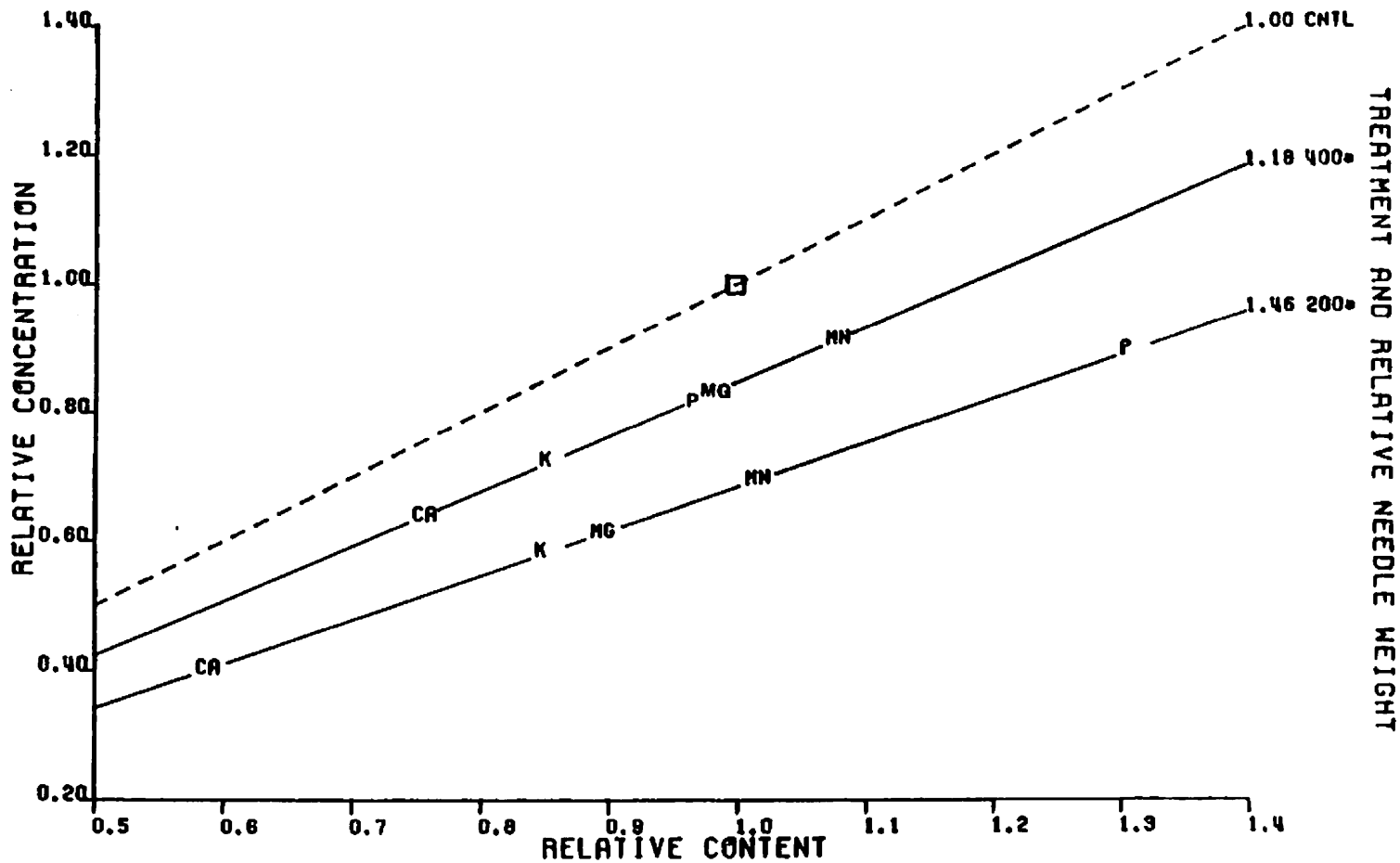
RELATIVE NUTRIENT RESPONSE FOR 239 WAHA #2



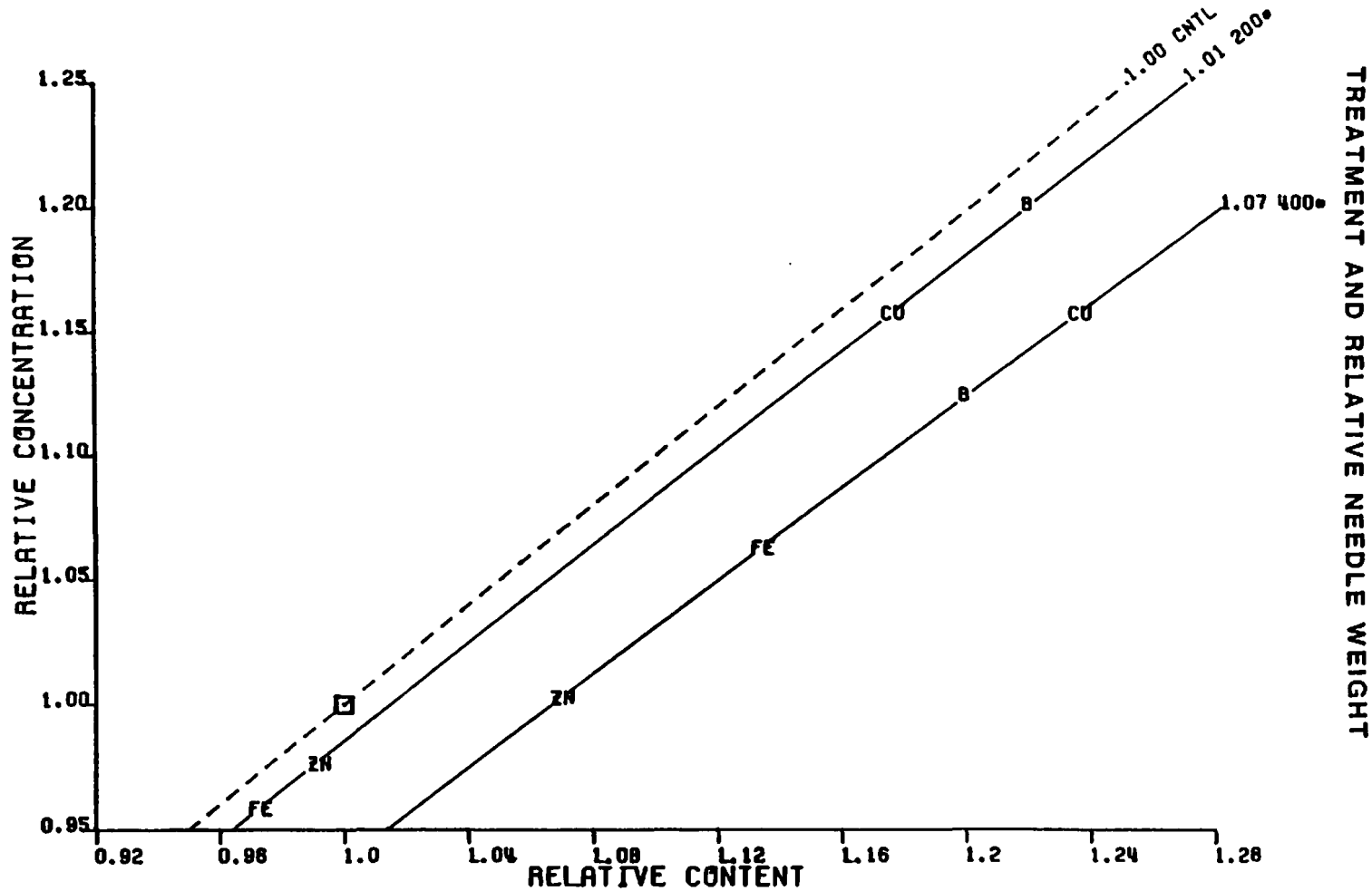
RELATIVE NUTRIENT RESPONSE FOR 240 QUARTZ CR. #1



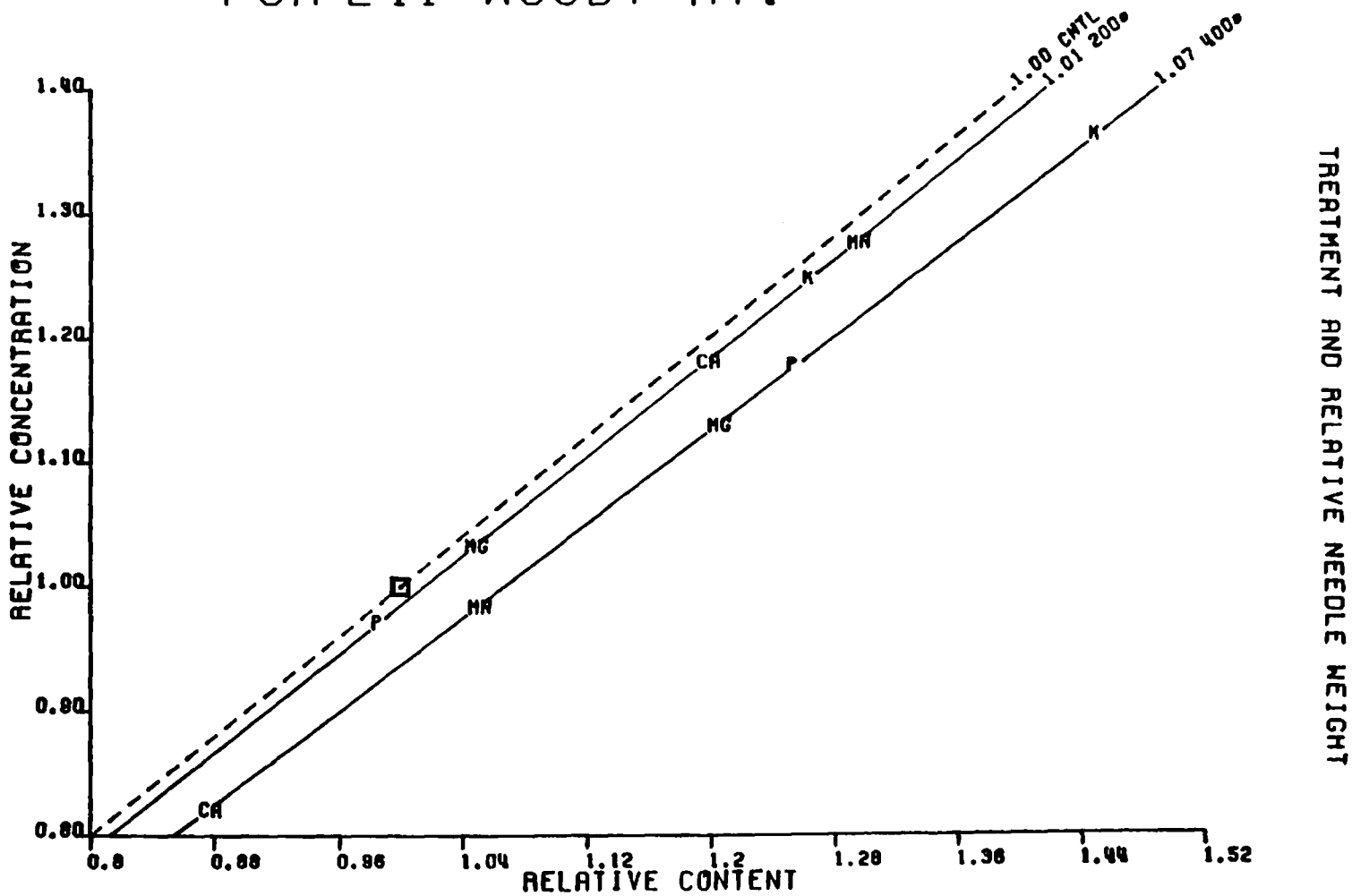
RELATIVE NUTRIENT RESPONSE FOR 240 QUARTZ CR. #1



RELATIVE NUTRIENT RESPONSE FOR 241 WOODY MT.

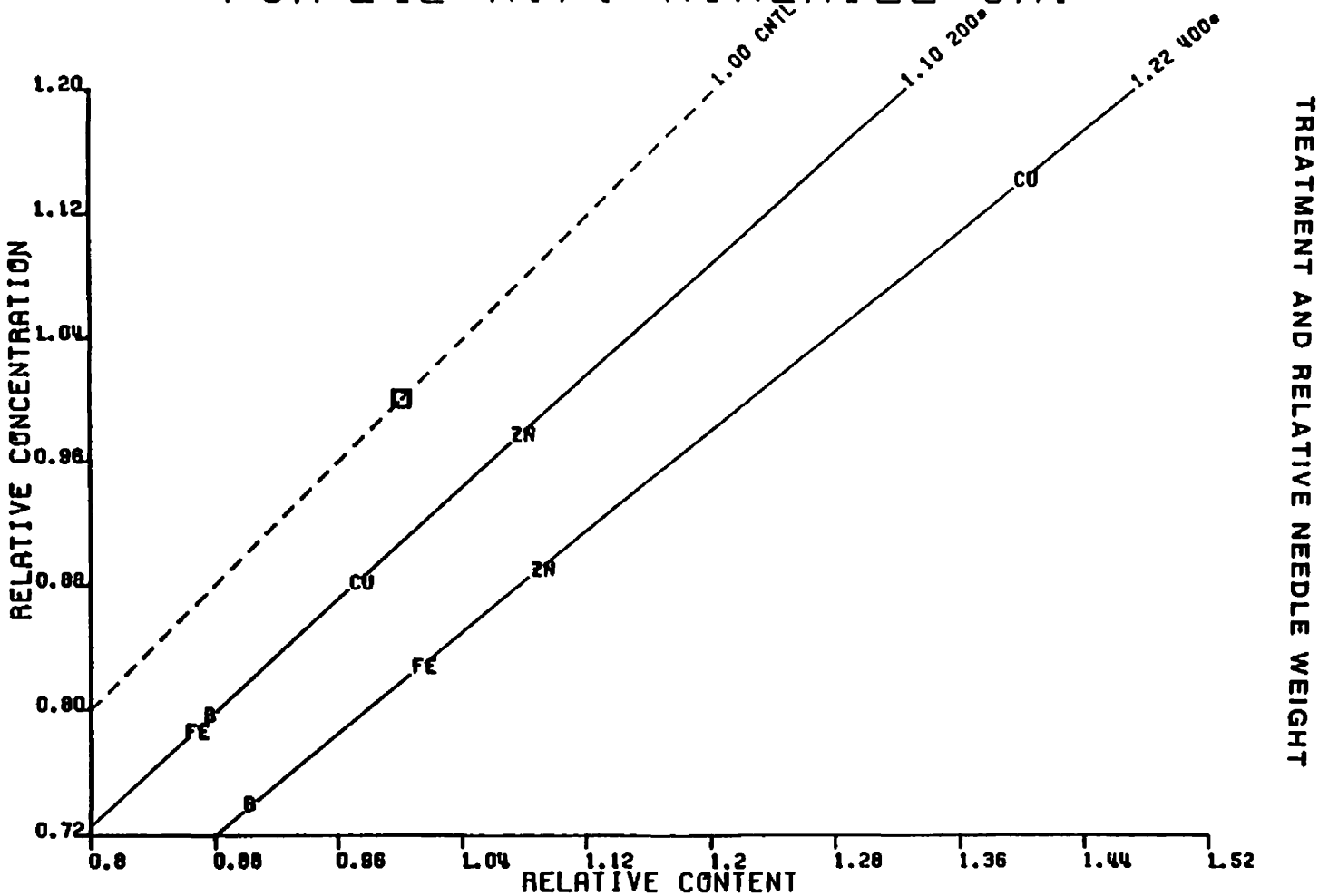


RELATIVE NUTRIENT RESPONSE FOR 241 WOODY MT.

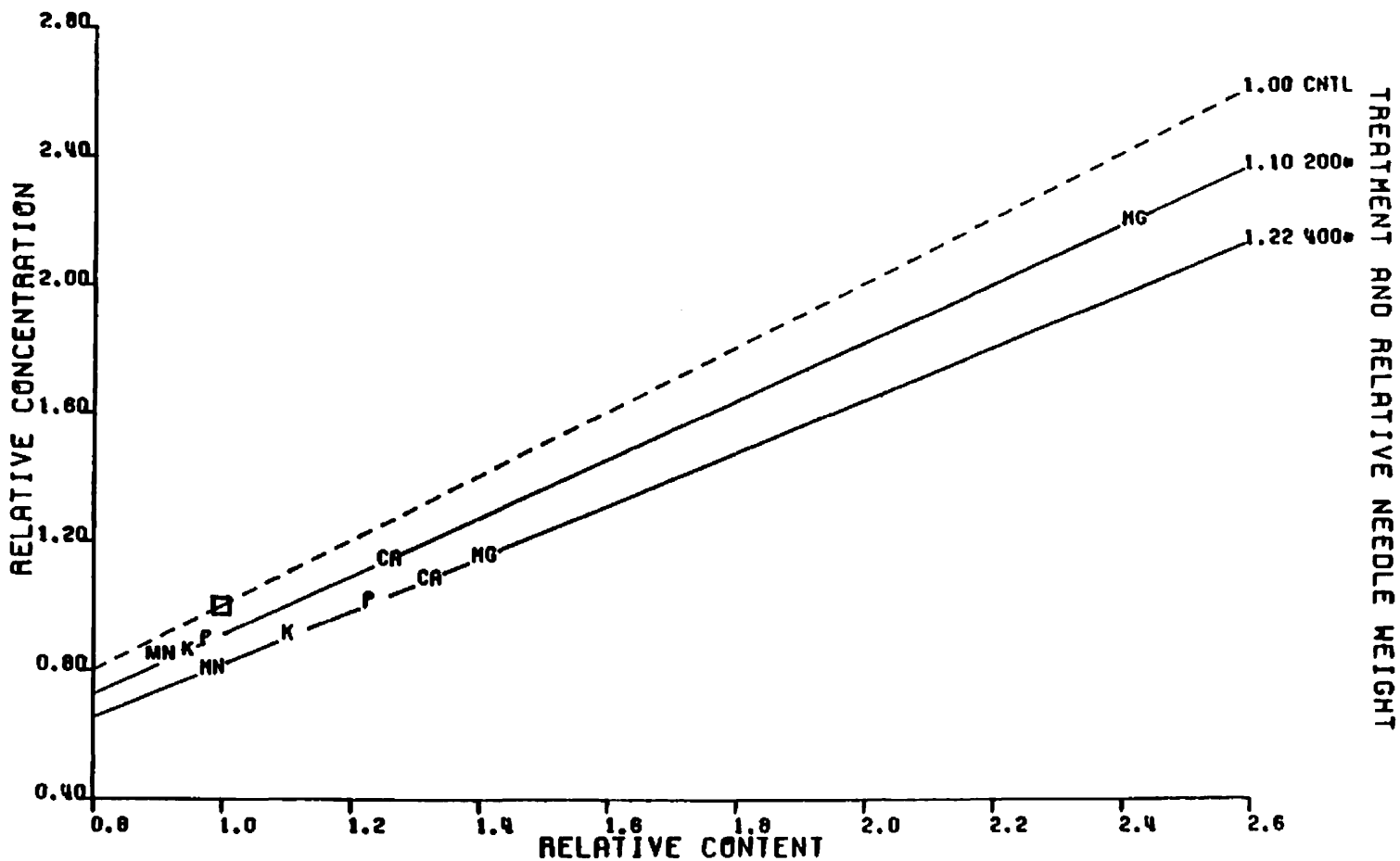


TREATMENT AND RELATIVE NEEDLE WEIGHT

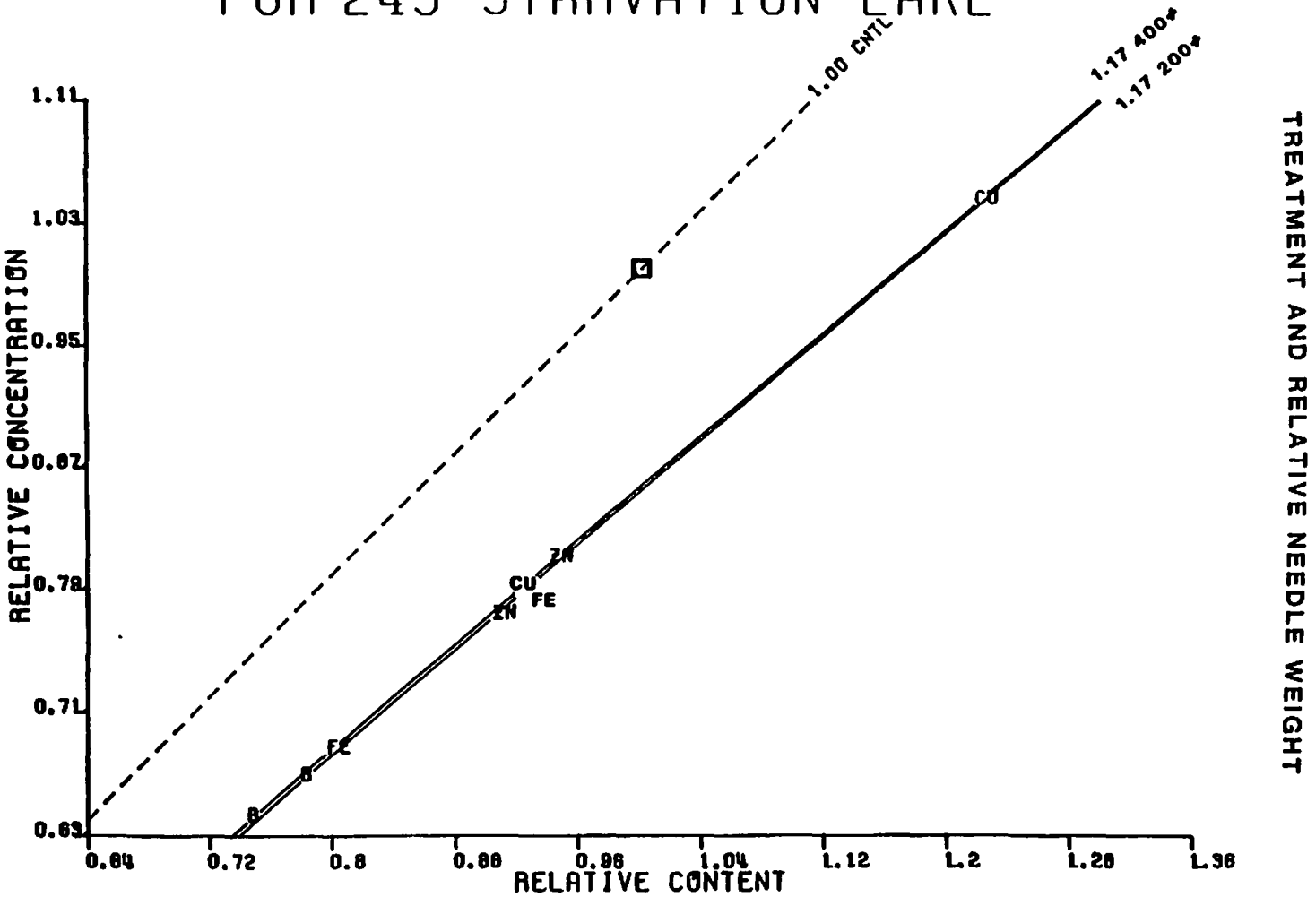
RELATIVE NUTRIENT RESPØNSE FØR 242 N.F. NINEMILE CR.



RELATIVE NUTRIENT RESPONSE FØR 242 N.F. NINEMILE CR.

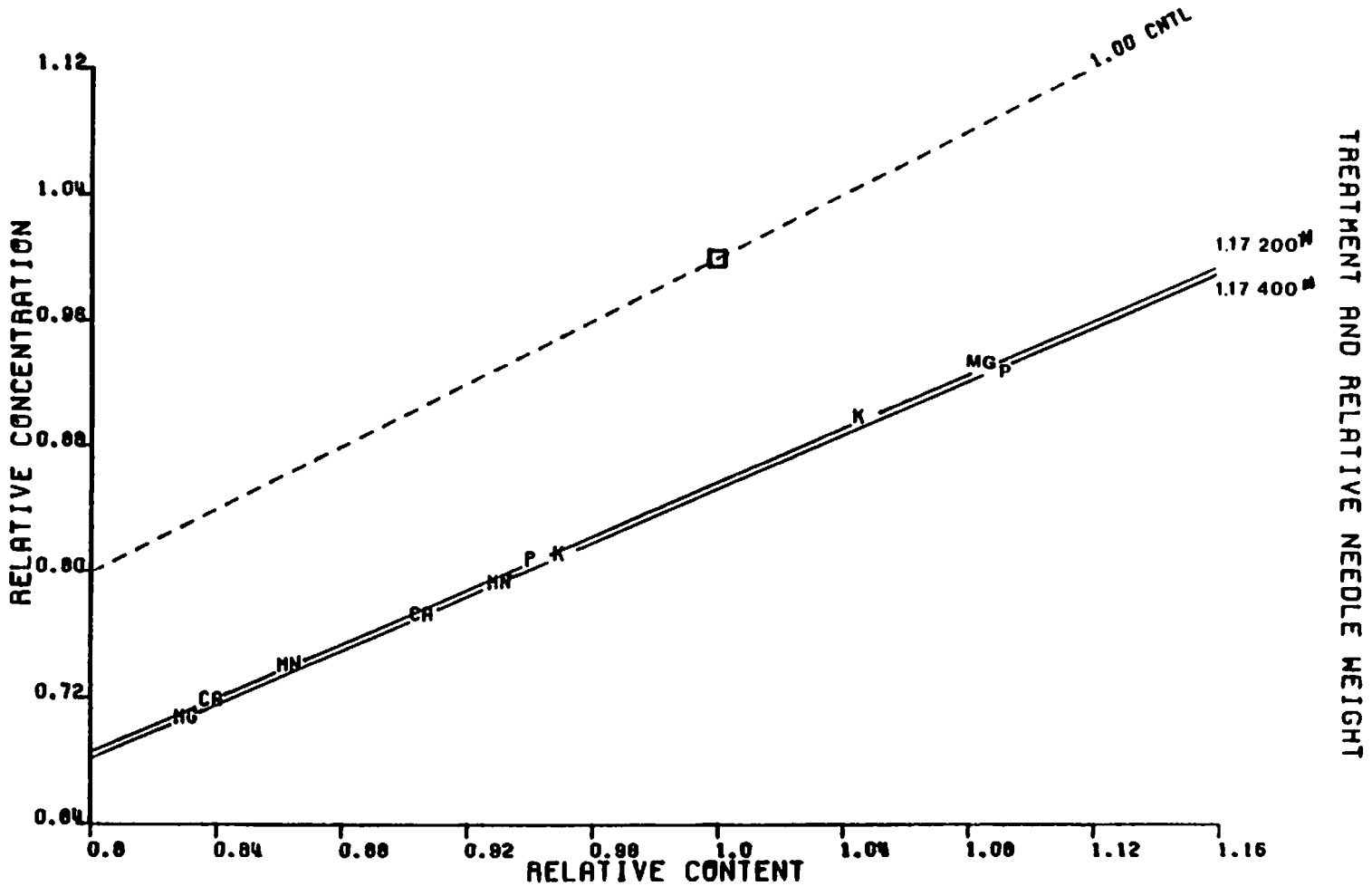


RELATIVE NUTRIENT RESPONSE FOR 243 STARVATION LAKE

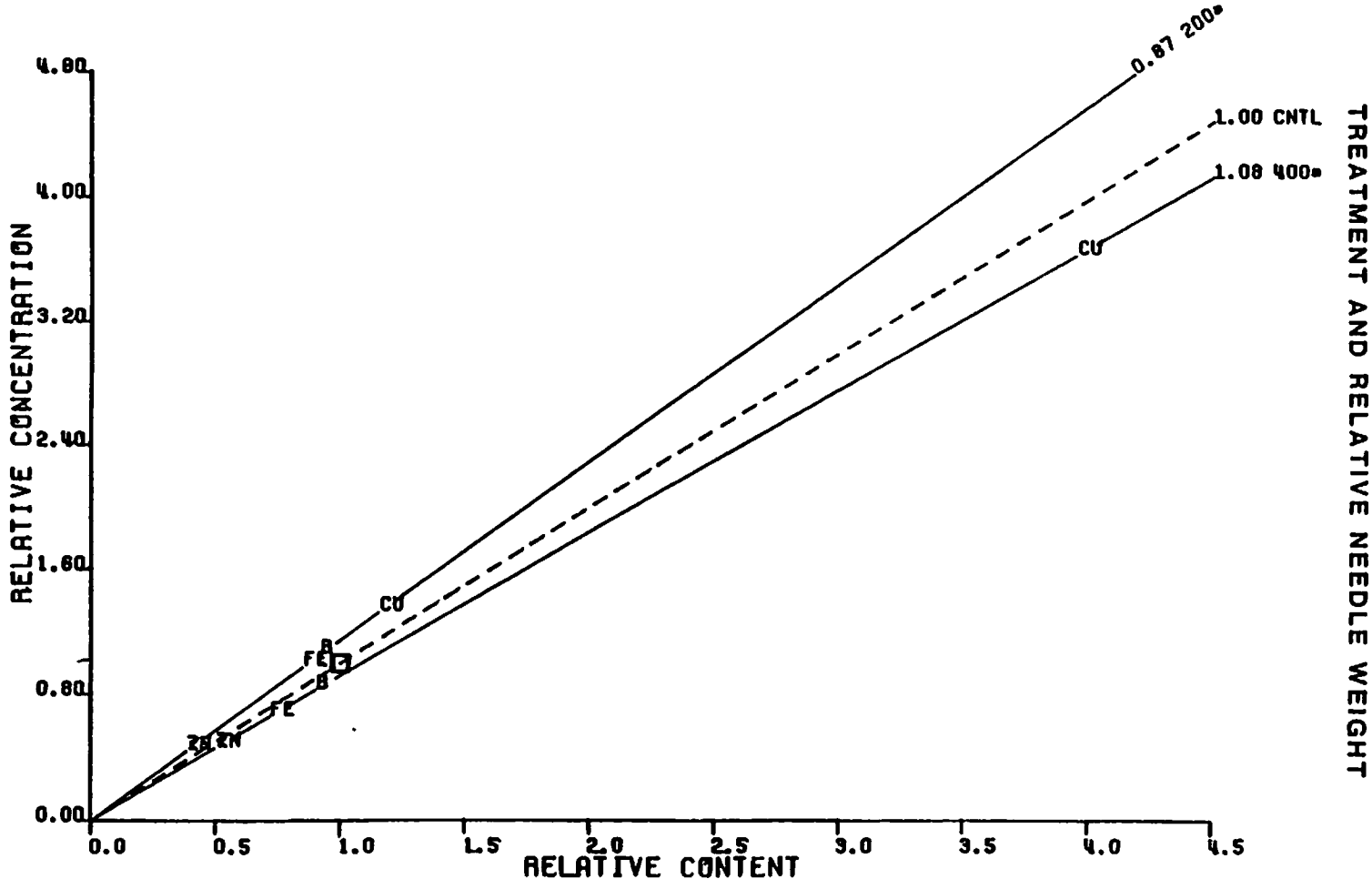


TREATMENT AND RELATIVE NEEDLE WEIGHT

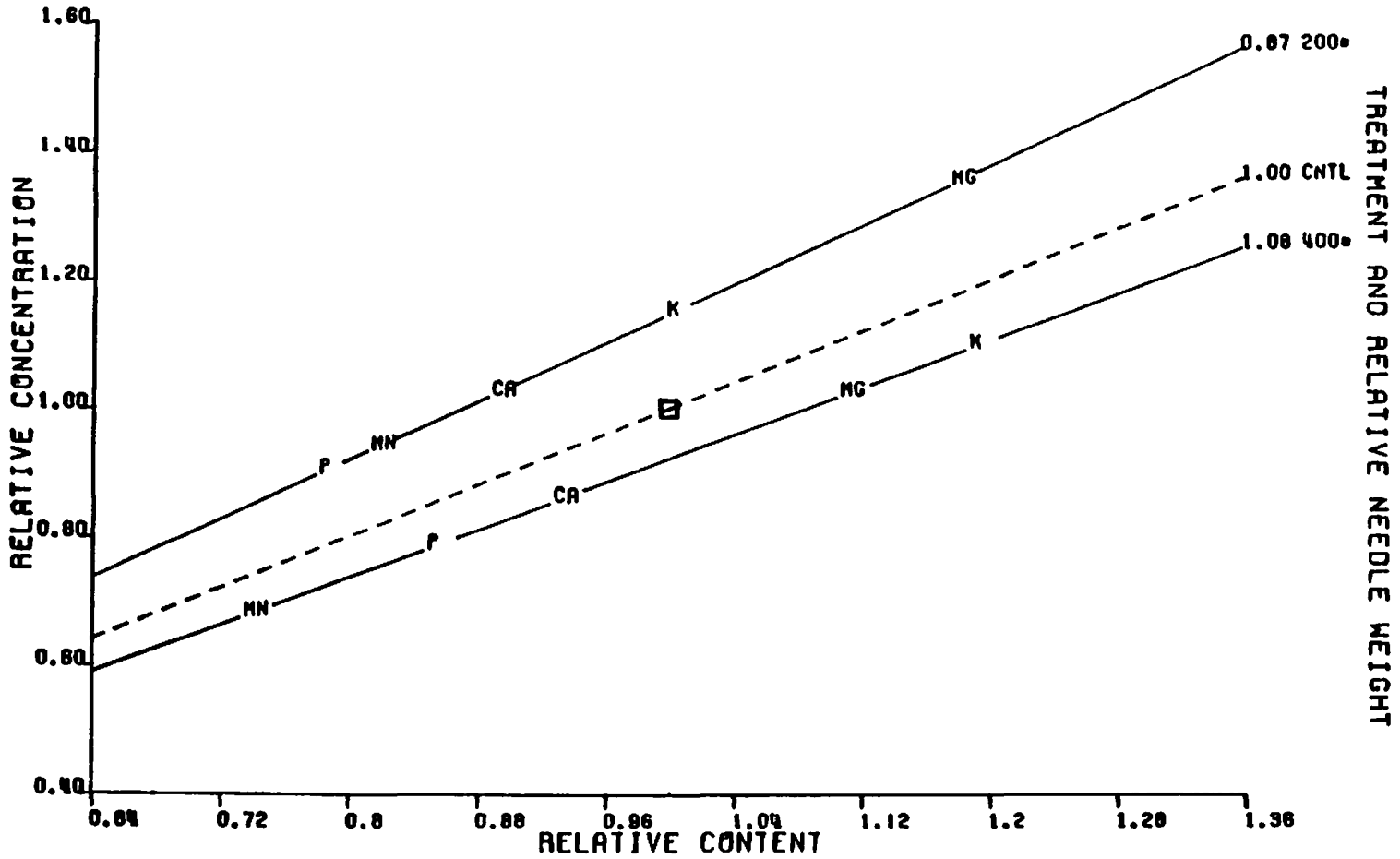
RELATIVE NUTRIENT RESPONSE FOR 243 STARVATION LAKE



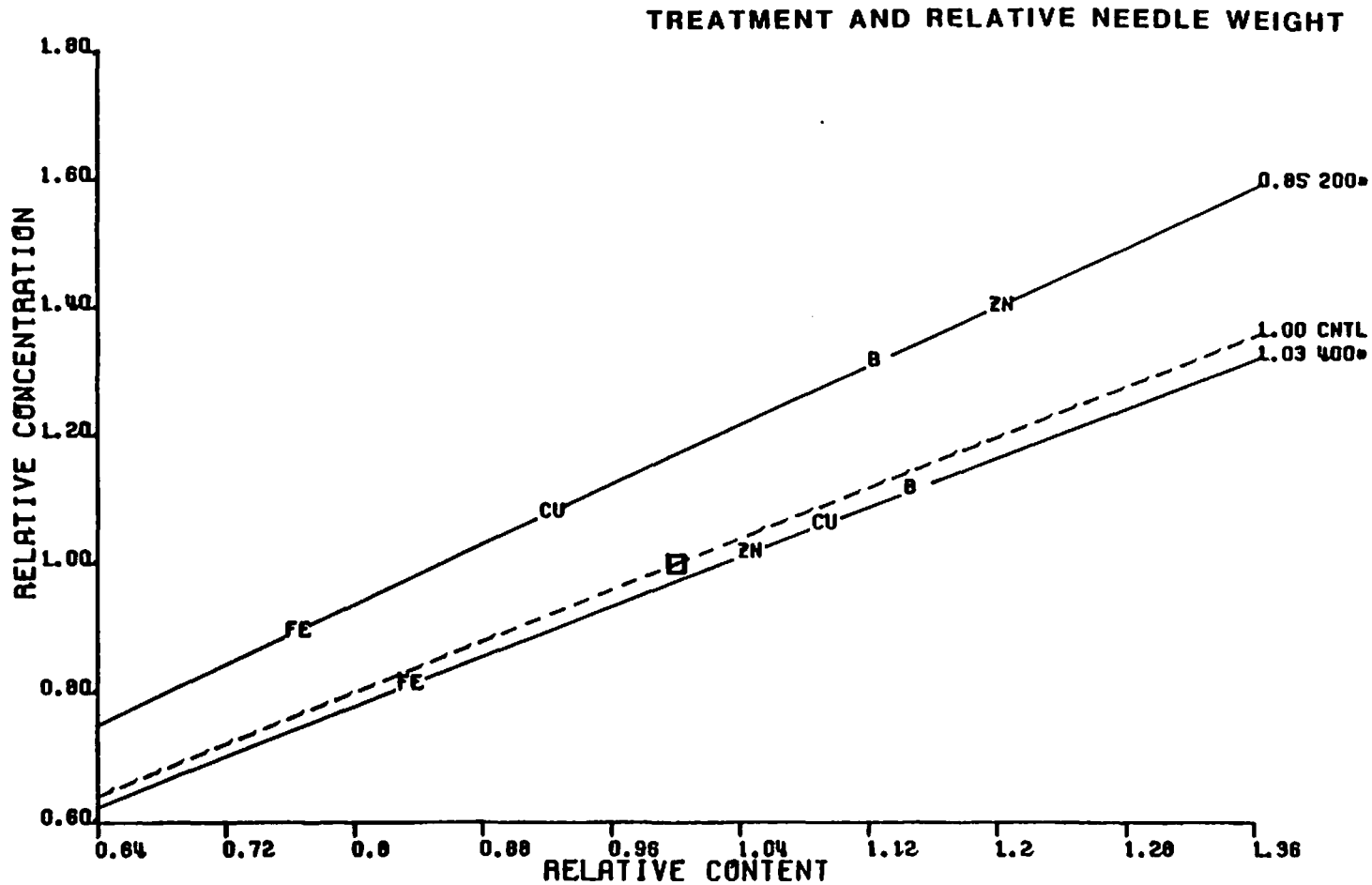
RELATIVE NUTRIENT RESPONSE FOR 244 LOOKOUT MT. #1



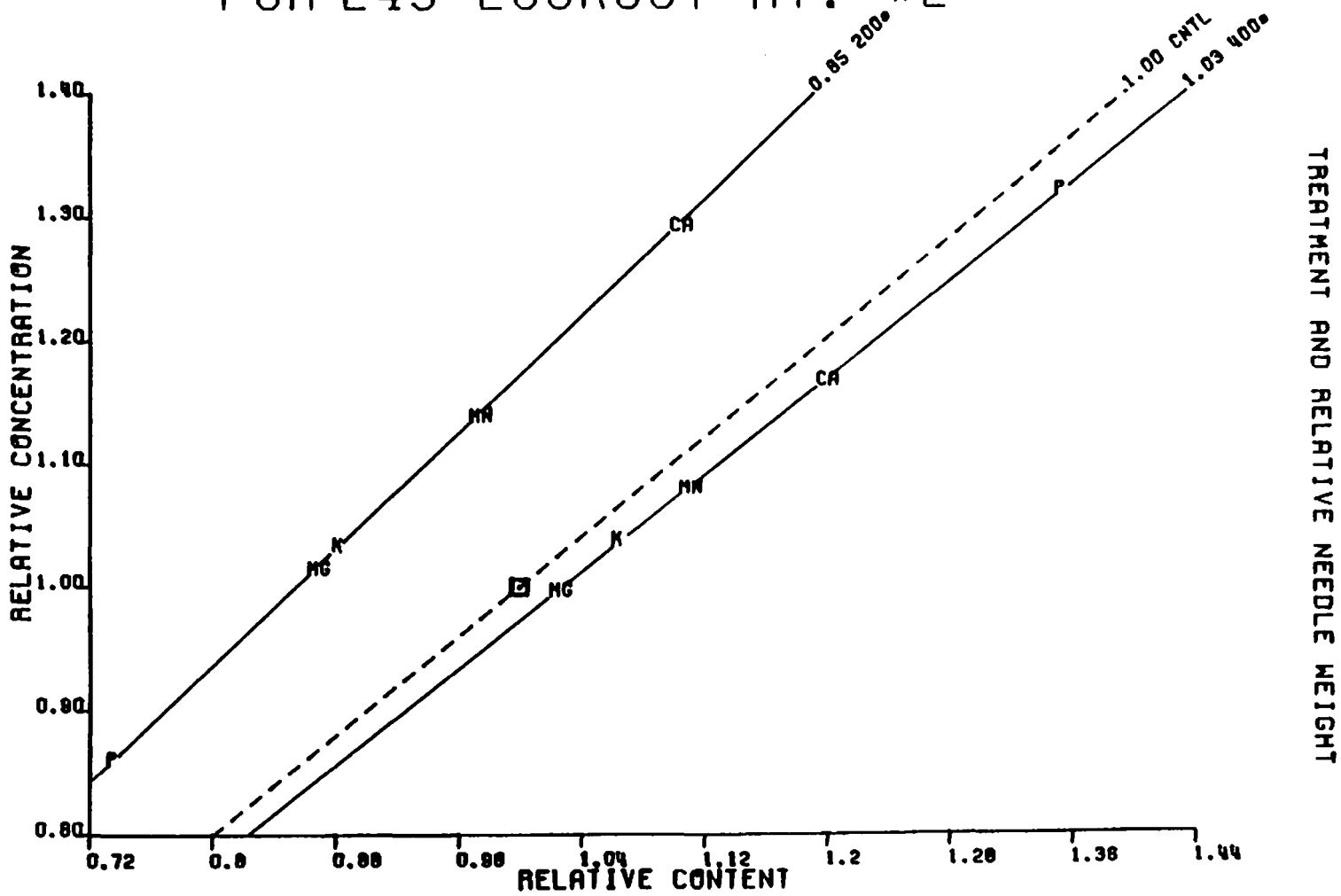
RELATIVE NUTRIENT RESPONSE FOR 244 LOOKOUT MT. #1



RELATIVE NUTRIENT RESPONSE FOR 245 LOOKOUT MT. #2



RELATIVE NUTRIENT RESPONSE FOR 245 LOOKOUT MT. #2



Foliar mineral nutrient concentrations for the 1981 installations.

METHODS

Foliage

All foliage was collected from the third whorl of dominant trees one year after urea application by climbing individual trees. Two trees were sampled per plot for a total of 12 per installation. Foliage was dried at 70° C and ground in a Wiley Mill. Analysis of foliage, except for nitrogen and phosphorus, followed standard methods utilizing a perchloric acid digestion, followed by use of a DC-argon plasma emission spectrometer (Blanchar et al. 1965, Ellis et al. 1976, Sommers and Nelson 1972). Foliage was digested in sulfuric acid and concentrations of nitrogen and phosphorus determined using Technicon AutoAnalyzer II instruments (Black 1965, US-EPA 1979).

Soil

Soil samples from each plot represent a composite of 10 randomly collected subsamples from 0-10 inches in the mineral soil. Samples were prepared by air-drying and then seiving-out and weighing the coarse fraction. Soil organic carbon was determined using the Walkley-Black wet combustion method (Black 1965). Soil was digested in sulfuric acid and concentrations of total nitrogen and total phosphorus determined as described above. Mineralizable nitrogen was determined following the anaerobic incubation procedure outlined by Powers (1980). Results are reported for the soil fraction and also corrected for the proportion of coarse fragments ((1-% coarse frag.) X (min. N)).

LITERATURE CITED

Black, C.A. (Ed.). 1965. Methods of soil analysis: Part II. American Society of Agronomy, Madison, Wisconsin.

Blanchar, R.W., G. Rehm, and A.C. Caldwell. 1965. Sulfur in plant materials by digestion with nitric and perchloric acid. Soil Sci. Soc. Amer. Proc. 29:71-72.

Ellis, R. Jr., J.J. Hanway, G. Holmgren, D.R. Keeney. 1976. Sampling and analysis of soils, plants, waste waters, and sludge: Suggested standardization and methodology. North Central Regional Publication 230.

Powers, R.F. 1980. Mineralizable soil nitrogen as an index of nitrogen availability to forest trees. Soil Sci. Soc. Am. J. 44:1314-1320.

Sommers, L.E., and D.W. Nelson. 1972. Determination of total phosphorus in soils: A rapid perchloric acid digestion procedure. Soil Sci. Soc. Am. Proc. 36:902-904.

US-EPA. 1979. Handbook for Analytical Quality Control in Water and Wastewater Laboratories. Environmental Monitoring and Support Laboratory, Office of Research and Development, EPA, Cincinnati, Ohio.

DOUGLAS-FIR
FERTILIZATION STUDY
FOLIAGE NUTRIENT CONCENTRATIONS

INSTALL	PLOT	TREE	TREAT	Needle Weight — g —	N %	P %	NUM	Zn	Mn	B	Fe	Mg	Cu	K	Ca
								ug/g							
201	1	A	200	.6830	1.51	.13	1	20.95	405.5	45.32	79.60	2045	4.966	6667	4141
201	1	B	200	.6247	1.20	.15	2	25.15	293.5	31.62	84.00	2045	5.966	5127	3221
201	2	26	400	1.0641	1.50	.20	3	33.65	395.5	23.12	79.60	1995	3.386	5627	5481
201	2	32	400	.9635	1.85	.29	4	37.35	282.5	24.82	102.00	2355	7.176	13027	2921
201	3	A	C	.5293	1.04	.19	5	20.75	355.5	19.62	111.00	2205	4.696	6667	3741
201	3	B	C	.9134	1.10	.22	6	32.65	341.5	27.22	94.00	2395	6.746	7167	4341
201	4	51	400	.6960	1.30	.14	7	19.55	325.5	20.82	62.80	2165	3.216	5557	3191
201	4	61	400	.7232	1.47	.19	8	27.35	365.5	21.32	78.90	2265	4.926	7337	3601
201	5	A	C	.6680	.86	.15	9	24.85	445.5	28.12	69.20	1965	2.716	5497	3701
201	5	87	C	.6902	.73	.23	10	16.35	469.5	24.62	87.00	2065	3.386	7067	6291
201	6	A	200	.7950	1.21	.17	11	25.25	355.5	21.42	76.60	2135	4.326	7407	4241
201	6	114	200	.6345	1.07	.13	12	16.05	275.5	21.92	54.10	1915	4.096	4687	3121
202	1	A	400	.6932	1.51	.18	13	37.95	435.5	23.92	49.40	2035	6.036	7237	4841
202	1	9	400	.5350	1.67	.22	14	39.65	734.5	19.32	45.40	2055	2.686	7907	4981
202	2	A	C	.4407	.72	.16	15	29.15	539.5	19.82	53.40	1965	3.556	6437	6761
202	2	39	C	.5781	1.02	.18	16	19.35	435.5	28.62	59.80	2075	4.826	6397	4071
202	3	A	200	.5886	1.01	.17	17	23.85	552.5	27.82	51.80	2035	3.926	6907	3701
202	3	48	200	.5539	1.09	.15	18	28.35	428.5	22.02	43.00	2105	4.596	7557	3401
202	4	A	400	.6427	1.38	.22	19	20.25	265.5	16.62	37.40	2105	3.286	5057	2661
202	4	B	400	.7498	1.31	.16	20	34.95	469.5	19.42	42.40	2055	3.156	7107	5011
202	5	A	200	.8760	1.05	.21	21	42.65	371.5	20.72	39.40	2015	4.796	5457	3971
202	5	93	200	.8136	1.13	.17	22	22.95	240.5	18.22	40.40	1735	3.416	5357	2591
202	6	A	C	.5349	1.04	.15	23	26.65	219.5	16.82	39.00	1925	3.736	4987	3671
202	6	98	C	.6719	.97	.15	24	31.95	323.5	17.22	53.80	1955	2.796	5397	4311
203	1	B	200	.6878	1.14	.22	25	27.42	355.5	25.53	101.70	2168	5.654	7500	5232
203	1	A	200	.9023	1.36	.17	26	23.72	339.5	17.53	87.70	1938	7.834	5990	5012
203	2	A	400	.7991	1.41	.24	27	19.22	283.5	22.13	86.70	2268	3.904	6260	4652
203	2	B	400	.5336	1.51	.19	28	24.62	465.5	25.03	92.70	2239	6.894	9480	5512
203	3	A	C	.5387	1.05	.24	29	25.72	368.5	23.93	71.60	2153	4.744	5050	5132
203	3	B	C	.6446	1.05	.17	30	20.62	344.5	21.83	83.70	2123	7.464	4930	5782
203	4	64	C	.7213	1.05	.29	31	41.92	265.5	33.83	68.60	1623	6.284	6690	4312
203	4	53	C	.7996	1.02	.28	32	34.92	220.5	25.23	141.70	2138	7.934	5950	5112
203	5	A	400	.6872	1.23	.20	33	26.22	237.5	20.73	119.70	2023	9.334	6320	4752
203	5	60	400	.7941	1.61	.23	34	26.82	291.5	31.13	140.70	2118	10.51	4710	5682
203	6	B	200	.6242	1.08	.19	35	37.22	313.5	24.83	107.70	1918	3.374	5230	6122
203	6	A	200	.7429	1.63	.23	36	36.92	254.5	18.93	103.70	2193	12.310	7430	4682
204	1	A	400	.5614	2.11	.21	37	24.94	331.0	22.02	71.96	1929	4.815	7736	2953
204	1	B	400	.4263	1.32	.23	38	22.84	530.0	23.92	39.06	1949	3.335	5066	6495
204	2	A	C	.4429	1.12	.22	39	37.24	456.0	29.52	58.26	1929	6.525	7076	3155
204	2	B	C	.5446	.98	.14	40	23.14	791.0	24.82	56.56	1579	3.375	4326	4175
204	3	A	200	.7710	1.70	.11	41	18.44	316.0	25.52	46.16	1249	4.245	4636	2625

INSTALL	PLOT	TREE	TREAT	Needle Weight — g —	N %	P %	NUM	Zn	Mn	B	Fe	Mg	Cu	K	Ca
								ug/g							
204	3	B	200	.7196	1.26	.13	42	20.54	389.0	25.72	92.46	1809	4.875	8116	2525
204	4	A	C	.5883	1.26	.13	43	17.64	674.0	22.32	63.96	1379	4.005	5606	3335
204	4	B	C	.6591	.98	.17	44	21.74	533.0	23.52	70.26	1859	3.905	7386	3545
204	5	A	400	.6791	2.20	.17	45	27.84	325.0	22.92	63.56	1669	4.515	5606	3245
204	5	B	400	.6546	1.21	.20	46	24.14	285.0	23.12	68.66	2369	5.615	8216	3235
204	6	A	200	.7550	1.37	.16	47	20.24	423.0	19.62	57.56	1759	3.475	6076	2605
204	6	B	200	.6138	1.15	.15	48	19.54	436.0	12.82	61.26	1229	3.945	6376	3405
205	1	A	400	.6973	1.82	.17	49	18.12	260.5	24.33	79.30	2218	8.334	7930	2892
205	1	B	400	.5765	2.50	.16	50	18.22	244.5	28.63	49.80	2258	9.004	7460	2052
205	2	A	200	.5785	1.31	.15	51	21.32	361.5	21.23	50.80	2108	6.824	5450	3602
205	2	B	200	.7328	1.49	.23	52	18.52	401.5	21.63	63.20	2388	5.184	6890	3102
205	3	A	C	.7350	1.17	.12	53	25.92	335.5	27.63	66.60	2028	5.654	6460	3572
205	3	B	C	.8109	1.38	.13	54	39.32	323.5	36.83	121.70	1748	13.91	5320	2272
205	4	A	400	.5350	1.32	.12	55	28.52	432.5	23.53	80.70	1878	5.854	7060	2922
205	4	B	400	.6538	1.42	.15	56	27.82	502.5	10.33	115.70	1948	11.010	6420	3502
205	5	A	200	.7367	1.68	.15	57	48.62	492.5	19.43	103.70	2108	5.554	7060	3572
205	5	B	200	.6461	1.26	.17	58	21.42	298.5	27.83	81.70	2288	5.784	7730	2812
205	6	A	C	.6623	1.26	.20	59	20.42	472.5	26.33	107.70	2238	6.024	7500	3702
205	6	B	C	.5397	.98	.12	60	23.52	405.5	20.03	77.00	1948	4.884	5280	4882
206	1	7	200	.7040	1.42	.28	61	24.55	266.5	20.42	61.50	2215	4.456	6067	3471
206	1	15	200	.5917	1.42	.22	62	24.35	225.5	20.02	55.10	2175	3.956	5827	3121
206	2	24	C	.6494	1.16	.22	63	14.95	355.5	22.22	43.70	1945	3.586	7737	3221
206	2	30	C	.6713	1.29	.18	64	32.25	314.5	41.02	53.80	2365	4.256	5727	3041
206	3	50	400	.7722	3.15	.28	65	29.85	435.5	20.92	38.40	2265	3.926	5397	3301
206	3	59	400	.7761	2.14	.28	66	30.75	391.5	22.32	39.70	2335	4.126	4627	3111
206	4	75	400	.7318	1.60	.16	67	26.15	368.5	20.42	36.00	2155	3.316	3997	3641
206	4	98	400	.5571	1.77	.18	68	45.35	307.5	27.32	53.10	2025	4.226	5767	6391
206	5	125	200	.7128	1.47	.22	69	17.75	299.5	17.62	27.60	1855	2.346	4417	3782
206	5	128	200	.5264	1.45	.29	70	27.25	391.5	30.92	58.50	2525	4.866	8777	4611
206	6	146	C	.7311	1.14	.18	71	43.05	306.5	37.02	47.70	1955	3.626	5897	3901
206	6	150	C	.5400	1.43	.25	72	31.05	300.5	25.92	33.70	2235	4.056	6097	3931
207	1	11	400	.4015	1.68	.17	73	28.14	532.7	16.75	94.59	1785	4.747	4507	6080
207	1	21	400	.4730	1.54	.19	74	23.34	412.7	17.15	82.79	1945	5.787	6117	6120
207	2	44	200	.4457	1.46	.16	75	38.24	375.7	22.45	63.39	2195	4.407	6997	6760
207	2	52	200	.5844	1.23	.18	76	32.14	303.7	21.45	70.69	2365	5.487	6357	4980
207	3	73	C	.6500	1.18	.26	77	32.54	203.7	6.94	82.09	2235	3.807	5747	5250
207	3	79	C	.7332	1.15	.22	78	23.44	344.7	15.57	66.69	2105	3.107	6117	5040
207	4	92	400	.6964	1.39	.22	79	13.44	289.7	15.05	100.60	1955	3.237	5747	2420
207	4	94	400	1.0120	2.06	.29	80	16.84	285.7	18.65	78.09	2225	4.947	6257	2910
207	5	121	C	.4401	1.07	.28	81	34.24	425.7	21.05	59.29	2345	7.197	7557	5610
207	5	131	C	.5376	1.19	.21	82	27.04	529.7	19.05	59.69	2375	4.447	7867	5250
207	6	152	200	.5521	1.49	.18	83	20.54	469.7	16.65	56.69	2055	4.247	4377	5230
207	6	161	200	.4472	1.44	.15	84	19.24	448.7	23.45	53.59	1355	3.777	4707	5650
208	1	A	C	.4396	.87	.14	85	23.65	623.5	20.42	146.00	2015	6.336	5967	6031
208	1	B	C	.4812	.92	.18	86	21.95	499.5	16.62	110.00	2095	6.036	5227	4511
208	2	A	400	.6073	1.20	.14	87	17.75	459.5	18.02	95.00	1995	5.566	4417	3401
208	2	B	400	.4685	1.10	.12	88	22.65	737.5	24.62	98.00	1845	6.176	4757	4981
208	3	A	200	.4803	1.20	.13	89	15.65	556.5	16.92	85.00	1905	4.926	4657	4071
208	3	B	200	.4342	1.10	.17	90	22.75	616.5	13.22	138.00	1935	6.136	4797	5531
208	4	A	400	.6069	1.27	.14	91	25.25	401.5	11.22	172.00	1765	7.346	4417	3201
208	4	B	400	.4536	1.19	.13	92	13.45	389.5	14.62	179.00	1705	5.636	4927	4341
208	5	54	200	.4814	1.14	.12	93	23.55	562.5	12.72	178.00	1945	6.436	5667	3741
208	5	A	200	.4595	1.10	.12	94	16.25	505.5	15.52	154.00	1895	6.306	5967	4041
208	6	A	C	.2429	1.04	.13	95	15.25	353.5	13.92	127.00	1835	4.726	4257	5211
208	6	86	C	.5390	.93	.19	96	26.95	399.5	22.32	178.00	2345	7.246	7777	3371

INSTALL	PLOT	TREE	TREAT	Needle Weight — g —	N %	P %	NUM	Zn	Mn	B	Fe	Mg	Cu	K	Ca
								ug/g							
209	1	3	200	.7619	2.06	.24	97	41.81	361.8	39.25	40.62	1319	4.934	4329	7225
209	1	6	200	1.0241	1.65	.20	98	20.31	299.8	24.75	49.32	2259	4.364	5579	3705
209	2	20	C	.5329	1.28	.32	99	33.41	321.8	32.85	59.12	2369	4.934	6009	6395
209	2	32	C	.6133	1.10	.24	100	30.91	301.8	32.85	62.82	2229	5.234	5979	6795
209	3	39	400	.7412	1.43	.19	101	24.61	210.8	20.85	56.42	2239	4.994	5609	3945
209	3	43	400	.7562	1.17	.22	102	39.41	266.8	24.35	74.22	2339	6.304	6379	5315
209	4	52	C	.2974	1.17	.22	103	40.81	529.8	38.85	66.82	1949	3.424	6919	6595
209	4	58	C	.6457	1.23	.24	104	42.11	418.8	26.75	56.02	2209	4.834	11239	7095
209	5	78	400	.7621	1.50	.21	105	31.21	237.8	27.35	51.32	2449	5.094	7759	4445
209	5	83	400	.7035	1.66	.20	106	26.31	248.8	26.65	47.72	2299	5.364	7519	5355
209	6	97	200	.8785	1.50	.26	107	45.51	368.8	32.85	60.42	2419	4.694	9099	5485
209	6	105	200	.7808	1.66	.19	108	36.41	198.8	35.15	59.12	2199	3.994	6774	4215
210	1	11	C	.5652	1.13	.20	109	25.99	297.5	9.43	96.18	2644	4.763	6761	4440
210	1	26	C	.4888	0.99	.18	110	16.29	304.5	13.53	78.38	2314	3.723	4711	3330
210	2	47	200	.7255	1.35	.19	111	32.59	252.5	18.53	80.78	2574	5.903	7591	3800
210	2	50	200	.5708	1.21	.16	112	26.99	328.5	21.13	76.38	2124	4.163	6391	5650
210	3	72	400	.7373	1.86	.14	113	41.29	395.5	27.73	86.18	2214	6.273	5921	3570
210	3	7A	400	.6086	2.44	.16	114	37.59	249.5	23.73	72.38	2374	6.403	6391	3900
210	4	101	C	.4213	1.03	.17	115	31.19	249.5	31.53	71.08	2674	6.173	8631	3870
210	4	104	C	.5451	1.20	.20	116	28.49	208.5	29.43	46.18	2524	4.493	6651	3970
210	5	123	200	.6043	1.57	.19	117	34.59	252.5	21.63	68.68	2564	5.603	7291	3270
210	5	138	200	.9412	1.56	.16	118	28.59	173.5	28.13	41.18	2594	6.643	8371	4310
210	6	146	400	.6716	1.89	.16	119	30.39	228.5	18.83	49.59	2114	3.383	6181	4880
210	6	159	400	.6624	1.96	.16	120	27.19	361.5	23.13	75.08	2074	4.963	5411	5110
211	1	18	C	.4987	1.39	.20	121	39.62	455.5	38.23	61.20	1698	12.410	5550	6022
211	1	28	C	.6536	1.07	.25	122	40.92	428.5	30.53	57.80	1998	5.884	6790	5082
211	2	56	200	.9799	1.26	.21	123	24.22	197.5	26.53	51.50	1478	4.444	5850	3042
211	2	82	200	.9871	1.30	.21	124	29.22	218.5	22.43	64.20	2168	4.374	1315	4112
211	3	104	400	.9344	2.25	.15	125	31.12	307.5	24.23	45.40	1998	5.314	9480	4882
211	3	122	400	.8584	1.36	.16	126	32.52	231.5	17.73	55.50	1758	5.144	8700	5452
211	4	148	400	.7548	1.71	.15	127	24.32	282.5	27.63	45.10	1518	3.974	6560	4982
211	4	176	400	.8750	2.05	.16	128	20.72	255.5	22.43	44.80	1438	6.424	6150	3672
211	5	195	200	.9071	1.58	.15	129	25.52	358.5	23.13	49.50	1528	4.204	4360	2902
211	5	203	200	.7519	1.25	.17	130	23.92	252.5	25.73	42.10	1678	4.044	6760	3672
211	6	243	C	.6671	1.18	.26	131	24.92	208.5	19.03	49.50	1719	4.914	1000	4372
211	6	281	C	.8069	1.21	.20	132	25.92	255.5	21.33	59.20	1328	3.704	6620	4742
212	1	A	400	.7494	1.52	.24	133	24.31	164.8	20.35	48.32	2379	3.224	6879	3315
212	1	B	400	.7167	1.31	.20	134	27.21	219.8	22.55	59.72	2379	3.754	9399	3155
212	2	A	200	.7673	1.25	.20	135	25.31	234.8	26.15	57.02	2259	3.824	8359	3545
212	2	B	200	.7271	1.04	.21	136	27.91	258.3	19.55	60.12	2309	4.264	9799	4315
212	3	A	C	.7712	1.17	.22	137	27.21	187.8	18.95	71.52	2209	4.994	5139	2235
212	3	B	C	.5564	.96	.23	138	31.01	295.8	25.45	66.82	2129	3.954	7959	4075
212	4	A	400	.6369	1.45	.23	139	31.11	458.8	34.55	54.42	1319	4.764	4069	5015
212	4	B	400	.5888	1.39	.19	140	36.11	385.3	21.05	56.72	2219	5.934	6479	5725
212	5	A	200	.7682	1.35	.23	141	36.31	428.8	25.45	49.72	2239	4.024	6649	4685
212	5	80	200	.5335	1.28	.25	142	33.41	412.8	32.85	58.42	2279	4.094	5979	4175
212	6	A	C	.4518	1.07	.29	143	32.61	395.8	36.55	51.32	1829	5.634	8799	3845
212	6	B	C	.5930	1.09	.29	144	27.61	348.8	25.75	61.72	2539	4.024	8229	3705
216	1	22	C	.9306	1.42	.20	145	35.22	199.5	28.73	39.70	1638	4.004	6660	3842
216	1	27	C	.6993	1.19	.17	146	38.92	193.5	22.73	47.10	1788	5.514	6860	4812
216	2	35	200	.7855	1.19	.16	147	26.52	211.5	16.33	50.80	1618	4.174	6520	3920
216	2	51	200	1.0069	1.21	.15	148	28.32	159.5	17.13	38.70	1448	4.274	5180	4042
216	3	70	400	.7295	1.50	.14	149	41.62	361.5	24.23	48.10	1528	3.534	5950	4742
216	3	74	400	.8079	1.19	.23	150	36.62	309.5	16.23	41.40	1938	3.534	5690	6992
216	4	82	400	.9827	1.37	.16	151	37.22	292.5	24.03	64.60	1388	5.084	5790	3842

INSTALL	PLOT	TREE	TREAT	Needle Weight — g —	N %	P %	NUM	Zn	Mn	B	Fe	Mg	Cu	K	Ca
								ug/g							
216	4	98	400	.6870	1.50	.16	152	28.72	262.5	29.13	47.10	1588	5.144	5720	3602
216	5	116	200	.7824	1.29	.22	153	32.22	203.5	28.13	48.50	1918	5.654	7330	3402
216	5	117	200	.6590	1.27	.19	154	34.22	227.5	37.53	85.70	2098	4.944	6220	4442
216	6	140	C	.7518	.98	.20	155	28.22	182.5	27.23	55.80	1618	3.604	7460	2922
216	6	160	C	.7106	.89	.16	156	31.92	246.5	28.03	56.50	1778	4.884	7230	4572
217	1	5	200	.7507	1.41	.14	157	30.24	338.7	31.95	44.89	1905	4.037	6887	4310
217	1	17	200	.6426	1.39	.20	158	29.74	250.7	18.25	37.89	2195	2.797	5547	4610
217	2	37	C	.3669	.94	.16	159	23.74	222.7	18.85	36.49	2125	2.897	5947	4110
217	2	53	C	.7799	1.23	.19	160	19.44	184.7	21.15	31.19	1975	2.397	6017	3900
217	3	57	400	.6326	1.90	.15	161	13.84	264.7	24.15	26.79	1935	3.037	5987	3570
217	3	59	400	.7704	1.51	.13	162	15.54	388.7	35.05	32.79	2085	4.307	6487	3770
217	4	71	400	.6555	1.42	.24	163	34.24	255.7	21.95	39.19	2145	4.077	6727	3140
217	4	73	400	.6157	1.54	.22	164	32.84	452.7	31.95	43.89	2005	4.277	5117	5010
217	5	105	C	.7233	1.06	.18	165	21.14	248.7	22.35	32.19	1865	4.037	6257	3640
217	5	109	C	.7523	1.07	.17	166	21.14	290.7	24.85	36.89	1935	5.817	5917	4240
217	6	122	200	.7670	2.02	.22	167	24.44	184.7	38.35	31.49	2235	3.737	4437	3270
217	6	125	200	.6227	1.66	.18	168	26.04	348.7	26.65	33.19	1955	4.847	5647	3970
218	1	5	400	.6331	1.43	.14	169	22.29	348.5	22.55	29.80	1460	4.395	6010	3144
218	1	12	400	.5509	1.05	.18	170	23.29	237.5	27.05	19.40	1780	3.855	6280	4264
218	2	18	200	.5384	1.12	.20	171	20.99	275.5	32.55	25.80	2030	3.855	5200	3534
218	2	30	200	.5952	1.19	.25	172	27.59	295.5	33.15	36.20	1950	4.565	5810	5274
218	3	33	C	.5813	.88	.24	173	27.99	297.5	24.55	48.90	1960	3.285	8190	4204
218	3	35	C	.6134	.94	.24	174	27.19	271.5	23.95	44.90	2060	3.955	5600	3424
218	4	51	200	.6045	.99	.16	175	15.09	361.5	23.45	44.20	1820	2.985	5870	3264
218	4	61	200	.7915	1.28	.18	176	21.29	162.5	27.85	23.70	2020	2.915	6010	3204
218	5	69	400	.8654	1.42	.19	177	19.39	307.5	31.85	30.50	2000	4.195	7380	3964
218	5	70	400	.6196	1.60	.14	178	33.39	315.5	25.75	27.80	1270	3.155	4300	3734
218	6	77	C	.5764	.99	.17	179	28.89	408.5	29.05	43.50	1810	3.925	6380	3594
218	6	85	C	.5422	.96	.28	180	23.79	355.5	35.55	34.80	1930	3.155	6410	3734
219	1	5	400	.9771	1.64	.25	181	45.34	506.0	27.02	118.20	1819	7.365	8186	6725
219	1	18	400	.8181	1.38	.14	182	34.94	262.0	25.72	104.20	1869	6.225	6376	5115
219	2	A	200	.4974	1.20	.16	183	34.24	386.0	30.12	112.20	1619	6.055	5936	5115
219	2	B	200	.7110	1.14	.15	184	35.64	294.0	22.02	83.36	1339	4.245	4636	3845
219	3	A	C	.5613	1.14	.21	185	41.94	326.0	27.02	115.20	1579	6.925	7246	6295
219	3	57	C	.5080	1.06	.22	186	26.74	345.0	28.92	122.20	1609	7.865	10536	6155
219	4	A	400	.5655	1.47	.17	187	46.34	463.0	27.92	99.16	1939	8.405	6946	5855
219	4	92	400	.5584	1.44	.17	188	32.94	258.0	26.02	112.20	1509	6.455	5536	4045
219	5	A	C	.5348	1.02	.17	189	31.14	342.0	24.32	109.20	1639	6.355	5566	4045
219	5	111	C	.4918	.95	.17	190	26.84	369.0	20.12	80.66	1299	4.515	7216	5355
219	6	119	200	.5759	1.34	.14	191	31.94	198.0	24.62	82.36	1629	6.055	7216	4545
219	6	145	200	.6562	1.50	.14	192	29.04	223.0	34.42	109.20	1609	6.955	4796	3295
220	1	10	400	.8488	1.61	.20	193	36.81	334.8	23.45	62.82	1269	6.474	6079	3095
220	1	27	400	.5564	1.47	.11	194	17.71	750.8	29.55	76.52	1359	3.454	6249	5925
220	2	A	C	.5619	.60	.19	195	22.21	348.8	23.35	79.22	1039	6.234	3969	4615
220	2	57	C	.6903	1.03	.19	196	17.61	207.8	26.85	78.22	1259	6.744	5639	2905
220	3	A	400	.9408	1.29	.14	197	24.71	252.8	19.55	66.12	885	5.134	6039	3175
220	3	72	400	1.0211	1.48	.15	198	33.11	218.8	16.05	68.12	1409	6.134	6079	2635
220	4	97	200	.5814	1.30	.20	199	18.61	178.8	25.85	55.02	909	5.704	3969	3605
220	4	104	200	.7203	1.21	.13	200	17.31	223.8	15.85	48.72	872	4.664	4939	2755
220	5	116	C	.7131	.78	.20	201	25.71	489.8	16.95	51.32	1019	4.194	4069	5415
220	5	122	C	.6034	.98	.17	202	22.41	290.8	28.05	79.92	1129	4.764	4869	3705
220	6	143	200	.4998	1.22	.16	203	11.71	341.8	24.45	72.52	1369	5.234	4969	4995
220	6	151	200	.6264	1.11	.13	204	18.91	169.8	19.65	43.02	1289	4.154	5409	3065
221	1	15	C	.4812	1.07	.15	205	22.92	173.5	17.43	81.70	2178	6.394	6860	3332
221	1	26	C	.3398	.91	.19	206	24.42	220.5	24.83	137.70	2128	6.224	4780	5042

INSTALL	PLOT	TREE	TREAT	Needle Weight — g —	N %	P %	NUM	Zn	Mn	B	Fe	Mg	Cu	K	Ca
								ug/g							
221	2	A	200	.7280	1.38	.19	207	21.42	304.5	19.93	64.60	2058	5.784	5990	2972
221	2	B	200	.6030	1.30	.15	208	21.22	218.5	17.03	63.20	2168	6.424	6220	3702
221	3	A	400	.6837	1.95	.19	209	22.02	313.5	22.93	73.60	2318	5.814	10250	4142
221	3	B	400	.6569	1.57	.16	210	32.52	240.5	22.73	53.20	2178	5.414	7730	2742
221	4	74	200	.5480	1.44	.15	211	31.12	358.5	32.53	74.30	1498	8.974	6220	5452
221	4	79	200	.6110	1.95	.21	212	42.32	322.5	26.13	48.80	2168	6.894	4850	4142
221	5	A	C	.3390	.80	.13	213	15.02	227.5	20.13	41.40	2038	5.714	7460	3332
221	5	B	C	.3779	1.11	.23	214	32.22	245.5	24.43	54.80	2088	5.084	6520	5552
221	6	A	400	.5961	2.02	.21	215	32.22	365.5	26.93	88.70	1598	7.694	6190	5212
221	6	B	400	.4180	2.11	.29	216	31.52	262.5	22.53	71.90	2248	8.464	5420	3742
222	1	37	400	.6722	1.31	.18	217	31.99	235.5	30.85	56.60	1900	4.725	4930	5474
222	1	52	400	.8392	1.40	.20	218	39.69	348.5	28.95	64.00	2000	4.495	7180	4564
222	2	A	C	.9046	1.11	.17	219	40.69	358.5	26.55	57.00	1780	4.395	6040	4974
222	2	B	C	.8002	1.08	.27	220	26.79	254.5	26.65	50.90	2140	4.725	7450	3834
222	3	A	200	.7948	1.09	.20	221	31.09	199.5	25.75	72.40	1380	4.195	5070	4974
222	3	111	200	.5347	1.37	.22	222	29.29	321.5	22.65	65.70	1480	5.265	7820	5140
222	4	A	400	.6971	1.34	.27	223	32.69	239.5	33.55	54.90	1900	4.295	5970	3634
222	4	146	400	.7844	1.38	.23	224	41.39	315.5	23.25	79.40	2080	5.365	7050	5374
222	5	157	C	.3106	.91	.21	225	31.99	395.5	21.55	92.50	1860	4.725	6680	6384
222	5	166	C	.5777	1.08	.19	226	36.99	257.5	22.95	60.60	1900	5.135	7010	4534
222	6	A	200	.4878	1.17	.20	227	29.39	381.5	20.65	113.50	1550	5.935	6480	5444
222	6	198	200	.4080	1.24	.19	228	37.69	398.5	37.55	109.50	1690	6.405	7150	9504
223	1	A	C	.6863	.96	.25	229	24.26	195.7	20.63	109.40	2449	6.468	12758	4580
223	1	24	C	.9655	1.24	.18	230	17.76	187.7	16.53	67.48	1639	4.858	4858	3650
223	2	A	200	1.0669	1.67	.29	231	38.86	286.7	23.63	68.18	1939	4.258	6768	4320
223	2	47	200	.5738	1.23	.16	232	26.86	282.7	24.33	65.48	1549	3.558	5653	6730
223	3	A	400	.7984	1.67	.23	233	28.76	184.7	27.43	80.29	1699	6.038	11459	6090
223	3	63	400	.7735	1.44	.28	234	29.66	129.7	32.63	102.40	1719	7.778	6768	3810
223	4	77	200	.8051	1.33	.22	235	21.86	238.7	20.23	62.48	1199	4.628	7308	3750
223	4	91	200	.5837	1.45	.30	236	26.26	226.7	32.63	113.40	1949	8.418	9318	4250
223	5	108	C	.6090	.91	.20	237	28.26	243.7	18.33	65.78	1719	4.998	5828	5190
223	5	110	C	.4574	.91	.18	238	18.46	227.7	23.93	73.88	1419	3.558	4418	4420
223	6	123	400	.9592	1.67	.21	239	40.86	279.7	25.93	63.48	2139	4.658	9718	5830
223	6	126	400	.9392	1.77	.22	240	27.26	270.7	29.13	57.08	1919	9.668	6868	4790
225	1	A	400	.8877	2.07	.20	241	40.99	495.5	30.33	87.18	2424	4.933	7431	4210
225	1	B	400	.6268	1.75	.18	242	21.99	351.5	27.53	94.18	2104	6.443	7791	2570
225	2	A	C	.5741	1.11	.26	243	28.19	331.5	25.93	107.20	2274	7.383	8701	5410
225	2	22	C	.5207	1.21	.24	244	40.29	415.5	34.63	93.18	2264	5.973	4741	4570
225	3	A	200	.5460	1.27	.14	245	26.69	516.5	27.33	69.68	2184	5.463	6351	3240
225	3	B	200	.6882	1.09	.17	246	17.29	334.5	19.53	62.28	2364	3.793	5351	2510
225	4	51	400	.6481	1.88	.20	247	44.29	532.5	30.93	97.18	2374	5.093	5611	3430
225	4	57	400	.4691	1.67	.18	248	21.99	519.5	27.33	65.68	2204	5.773	6051	3110
225	5	A	200	.6117	1.35	.21	249	26.09	619.5	29.83	76.08	2374	5.403	6081	3260
225	5	B	200	.3003	1.18	.14	250	22.49	646.5	33.23	113.18	2024	4.933	5631	5210
225	6	A	C	.6119	.98	.22	251	29.39	315.5	18.33	75.38	2414	4.323	8501	2910
225	6	B	C	.5494	1.27	.24	252	24.79	633.5	30.13	86.18	2344	6.943	8131	3770
226	1	A	C	.5217	.89	.37	253	27.74	496.0	23.82	99.16	1539	1.595	7316	3055
226	1	5	C	.5843	1.06	.27	254	27.44	402.0	31.22	101.20	1819	6.925	7896	4005
226	2	A	200	.5191	1.24	.19	255	20.94	382.0	21.72	93.16	1739	4.475	6646	5555
226	2	22	200	.6633	1.25	.19	256	19.24	349.0	33.12	132.20	1019	3.635	7746	2565
226	3	A	400	.8092	1.29	.25	257	27.14	366.0	29.12	113.20	1759	4.245	5536	2875
226	3	B	400	.7044	1.29	.26	258	32.04	620.0	31.12	157.20	2269	4.075	9696	3805
226	4	A	400	.8713	1.51	.21	259	35.94	342.0	23.12	142.20	1279	3.005	5166	3475
226	4	52	400	.7930	1.34	.20	260	42.64	369.0	27.32	141.20	2299	5.085	10236	3505
226	5	A	200	.7938	1.18	.32	261	25.24	266.0	29.62	87.36	1649	4.075	9326	2695

INSTALL	PLOT	TREE	TREAT	Needle Weight — g —	N %	P %	NUM	Zn	Mn	B	Fe	Mg	Cu	K	Ca
								ug/g							
226	5	63	200	.5657	1.46	.25	262	27.34	459.0	18.02	108.2	1639	4.005	11736	4215
226	6	A	C	.5292	1.29	.36	263	32.54	486.0	26.52	98.16	1539	8.665	10736	4545
226	6	75	C	.4511	1.16	.27	264	27.34	456.0	34.12	110.20	1949	3.305	5936	4985
227	1	A	200	.7303	1.33	.28	265	31.24	375.7	28.87	86.18	1899	4.680	7572	3470
227	1	10	200	.7996	1.40	.32	266	24.04	408.7	23.47	92.28	1139	2.430	7502	2390
227	2	A	400	1.0056	1.52	.26	267	35.14	358.7	25.97	93.28	1939	4.910	8842	3640
227	2	22	400	.6534	1.36	.21	268	39.14	438.7	19.17	82.88	1529	3.340	4552	2860
227	3	29	C	.7646	1.18	.20	269	32.24	472.7	24.77	109.3	1919	6.120	8712	3470
227	3	30	C	.6596	1.42	.17	270	31.44	341.7	23.77	79.78	1749	3.870	5762	2330
227	4	43	200	.5965	1.28	.30	271	33.84	293.7	20.47	119.28	2139	4.540	7702	3120
227	4	48	200	.6586	1.42	.22	272	34.84	320.7	28.97	123.30	2059	6.660	7502	3310
227	5	52	C	.8139	1.18	.21	273	36.84	289.7	21.57	103.30	1919	6.120	7642	2470
227	5	58	C	.7068	1.18	.31	274	26.84	276.7	22.27	78.18	1509	4.610	6232	2080
227	6	A	400	.5935	1.26	.17	275	12.84	271.7	18.17	86.18	1439	3.970	7642	2650
227	6	65	400	.8198	1.33	.19	276	21.14	306.7	17.77	129.30	1089	3.810	4792	2500
228	1	A	400	.8068	1.54	.27	277	42.86	499.7	21.23	70.18	2189	3.958	8209	4380
228	1	14	400	.9647	1.79	.29	278	27.86	502.7	16.73	75.88	1869	3.818	7338	3060
228	2	A	200	.5662	1.35	.27	279	23.56	312.7	19.73	80.28	1979	3.668	6428	2850
228	2	B	200	.8030	1.80	.21	280	33.16	438.7	26.43	106.40	1669	4.758	7468	4350
228	3	A	C	.5132	1.32	.24	281	38.16	938.7	26.33	89.98	2019	6.908	8278	5420
228	3	B	C	.5586	1.10	.22	282	39.16	596.7	11.93	68.88	2149	4.698	7568	5520
228	4	A	200	.6748	1.30	.29	283	27.46	499.7	21.83	75.18	1859	4.158	6668	3350
228	4	B	200	.9443	1.31	.19	284	31.06	381.7	19.53	58.78	1749	4.258	5528	2940
228	5	A	C	.6727	1.26	.18	285	22.86	435.7	20.93	57.48	2019	3.218	6798	4420
228	5	85	C	.5145	1.23	.38	286	24.96	505.7	23.63	76.58	2409	4.828	6528	3850
228	6	A	400	.8136	2.25	.21	287	27.96	529.7	22.73	71.88	1979	2.548	7538	4050
228	6	112	400	.6861	2.04	.26	289	30.36	532.7	19.53	91.28	1929	5.328	6428	2920
229	1	A	400	.6520	2.32	.22	289	40.09	458.5	24.35	64.70	2050	8.925	8860	3934
229	1	4	400	.8199	1.99	.27	290	23.99	239.5	20.85	85.50	2170	9.225	6750	3024
229	2	A	C	.4051	1.08	.34	291	37.39	536.5	45.25	101.50	2800	6.435	12170	6044
229	2	B	C	.5751	1.12	.30	292	32.69	301.5	30.45	99.50	2460	6.605	11870	3304
229	3	A	200	.7100	1.60	.27	293	33.69	351.5	25.55	90.50	2130	7.315	6680	3174
229	3	B	200	.4345	1.36	.23	294	24.29	408.5	25.05	97.50	2360	8.015	11570	5674
229	4	A	C	.7542	1.31	.28	295	27.89	415.5	32.85	66.70	2230	6.375	6950	3634
229	4	44	C	.4176	1.12	.27	296	34.39	459.5	27.35	106.50	2030	10.670	6480	3184
229	5	?	400	.6788	1.87	.22	297	34.99	388.5	22.75	99.50	1830	5.665	7280	2954
229	5	51	400	.5730	1.51	.20	298	43.39	492.5	18.05	129.50	2440	7.865	13570	4104
229	6	60	200	.8593	1.27	.31	299	29.19	334.5	34.15	110.50	2130	5.965	8990	3734
229	6	64	200	.8223	1.39	.27	300	32.69	418.5	22.25	98.50	1930	15.370	7950	2574
230	1	7	400	.4728	2.19	.27	301	27.54	371.7	25.75	63.69	2015	5.077	5007	2740
230	1	14	400	.7449	2.42	.27	302	38.24	462.7	26.35	61.99	2255	4.477	7327	4210
230	2	16	200	.5914	1.24	.16	303	24.44	482.7	27.05	45.29	1975	4.547	5577	3740
230	2	30	200	.8059	1.39	.21	304	25.74	516.7	21.05	64.39	2315	4.477	7057	2650
230	3	A	C	.5005	1.16	.24	305	34.84	573.7	20.95	36.89	2315	2.897	5747	3430
230	3	40	C	.7006	1.03	.20	306	33.54	398.7	24.25	29.79	2305	2.937	5747	3640
230	4	A	C	.7582	1.53	.23	307	24.64	332.7	25.15	45.59	2235	6.157	8127	1730
230	4	67	C	.4112	1.16	.26	308	40.54	814.7	32.35	50.29	2525	5.447	8227	4270
230	5	A	200	.5111	1.28	.26	309	41.94	542.7	23.75	50.29	2165	4.007	7697	4710
230	5	70	200	.6076	1.29	.19	310	33.14	519.7	18.75	64.99	2005	5.817	6687	3640
230	6	98	400	.5351	1.42	.26	311	32.14	438.7	21.05	75.09	2405	4.747	6587	5350
230	6	99	400	.8429	1.32	.14	312	34.84	341.7	25.35	70.09	2155	6.487	7057	2750
231	1	A	C	.4868	1.18	.21	313	23.84	492.7	17.85	49.59	1745	4.507	4647	5510
231	1	9	C	.4576	1.05	.24	314	40.94	455.7	19.55	75.39	2245	5.747	7127	5480
231	2	A	200	.5944	1.29	.26	315	26.94	361.7	20.05	49.59	1895	4.037	5517	3500
231	2	35	200	1.0078	1.26	.25	316	35.54	330.7	26.95	55.99	2195	8.537	6827	3840

INSTALL	PLOT	TREE	TREAT	Needle Weight — g —	N %	P %	NUM	Zn	Mn	B	Fe	Mg	Cu	K	Ca
								ug/g							
231	3	49	400	.5917	1.82	.19	317	22.34	344.7	21.55	45.29	1885	3.777	4337	3430
231	3	51	400	.5329	1.34	.24	318	20.04	355.7	21.05	43.89	2045	5.247	4607	5580
231	4	A	200	.6424	1.64	.24	319	38.24	435.7	21.65	51.59	1765	3.977	3707	4210
231	4	68	200	.5498	1.27	.28	320	40.94	401.7	16.55	59.69	2425	6.087	6687	5980
231	5	A	C	.3671	1.05	.25	321	32.54	690.7	21.65	45.59	2165	5.317	7057	4840
231	5	80	C	.4591	1.21	.27	322	63.34	1189.7	29.25	50.99	2045	5.317	9537	8940
231	6	A	400	1.0958	1.86	.27	323	29.34	422.7	29.85	43.89	2775	7.897	9807	3940
231	6	90	400	.7205	1.50	.28	324	44.24	472.7	26.85	55.59	2425	8.507	8297	4270
232	1	A	C	.8402	1.08	.20	325	37.56	311.7	23.43	54.38	1649	8.918	6938	2700
232	1	B	C	.6296	1.08	.17	326	36.86	319.7	26.23	69.48	2389	12.000	8608	4010
232	2	A	400	.5116	1.37	.13	327	27.76	408.7	22.03	43.38	1759	6.578	6628	5730
232	2	B	400	.8204	1.66	.22	328	27.46	209.7	19.73	66.78	1089	9.118	8748	2770
232	3	40	200	.5605	1.46	.19	329	22.96	415.7	21.83	61.78	1539	3.918	5828	3240
232	3	42	200	.6155	1.70	.25	330	38.16	579.7	27.13	71.98	1879	9.218	7738	3650
232	4	A	400	.4620	2.22	.22	331	15.36	391.7	17.63	44.98	1609	4.858	6198	4380
232	4	75	400	.6514	2.12	.21	332	23.66	231.7	22.33	50.68	1599	6.638	4148	3220
232	5	83	200	.7937	1.33	.22	333	42.56	492.7	16.63	48.08	1799	7.148	6598	5390
232	5	89	200	.6753	1.24	.16	334	34.86	566.7	24.63	50.68	2019	7.178	7368	4890
232	6	117	C	.5358	1.13	.21	335	25.36	310.7	27.73	51.38	1619	5.128	7538	3980
232	6	98	C	.5366	1.02	.20	336	29.76	253.7	29.93	59.08	1999	6.108	7338	3230
233	1	10	400	.3883	1.42	.23	337	38.24	473.0	24.02	96.16	2079	9.405	8086	4945
233	1	16	400	.5425	1.74	.20	338	40.94	560.0	25.42	63.96	1609	7.265	7346	3605
233	2	A	200	.6555	1.46	.22	339	62.74	466.0	34.92	53.56	1659	4.645	6476	4275
233	2	28	200	.7491	1.35	.17	340	30.94	280.0	23.72	51.56	1269	5.385	7856	3435
233	3	A	C	.4406	1.26	.20	341	34.24	510.0	25.52	60.56	1459	4.475	7416	6155
233	3	B	C	.5230	1.07	.19	342	42.64	553.0	28.12	47.46	2079	4.715	7346	8005
233	4	A	C	.4727	1.23	.27	343	34.24	382.0	21.22	73.36	1879	6.795	8256	4445
233	4	67	C	.7302	1.07	.16	344	34.24	580.0	24.52	62.26	1169	5.445	5906	4075
233	5	A	200	.5834	1.28	.22	345	48.34	506.0	22.62	46.86	2059	6.255	8216	5115
233	5	85	200	.5682	1.14	.21	346	33.94	318.0	23.02	41.46	1849	4.985	5776	5415
233	6	A	400	.7077	2.27	.25	347	37.64	416.0	25.52	54.86	1499	5.185	5266	4745
233	6	99	400	.6157	2.53	.23	348	52.04	745.0	32.72	70.66	1549	4.945	4166	6595
234	1	A	C	.6443	1.35	.25	349	29.91	385.8	38.55	38.62	1939	5.464	7319	2475
234	1	10	C	.6183	1.32	.22	350	31.51	310.8	27.25	29.22	1519	9.764	5779	3475
234	2	A	200	.7643	1.34	.19	351	27.31	368.8	26.45	32.92	1379	2.954	4899	3705
234	2	35	200	.7291	2.01	.35	352	37.81	381.8	40.85	37.92	1909	5.704	9259	4745
234	3	A	400	.7695	2.72	.23	353	42.51	445.8	28.15	31.62	1089	4.324	5639	3745
234	3	48	400	.6056	2.91	.22	354	32.61	401.8	25.15	25.12	1359	3.754	4669	3395
234	4	A	400	.4445	2.65	.21	355	59.61	586.8	40.25	57.02	2179	5.634	5109	7195
234	4	63	400	.5568	2.68	.23	356	16.41	237.8	30.15	47.02	963	3.794	5069	3645
234	5	A	C	.3782	1.16	.26	357	41.11	381.8	38.55	36.32	1669	3.384	7189	5985
234	5	86	C	.8239	1.32	.19	358	37.81	371.8	36.25	42.62	1559	6.174	4569	3205
234	6	92	200	.7306	1.69	.22	359	48.51	365.8	27.65	31.92	1299	4.154	5369	4275
234	6	99	200	.6478	1.40	.17	360	19.21	187.8	31.55	36.92	936	4.394	5139	3335
235	1	A	C	.6711	.88	.16	361	23.66	252.6	22.03	72.48	1529	6.638	6568	3320
235	1	B	C	.5044	.98	.17	362	29.06	744.7	25.93	63.18	1879	5.798	7068	4790
235	2	A	200	.5266	1.26	.14	363	11.16	532.7	24.63	32.98	1459	3.218	4858	4920
235	2	37	200	.9267	1.40	.15	364	25.16	391.7	16.23	64.18	1469	5.598	5358	3220
235	3	58	400	.7845	2.10	.15	365	37.16	690.7	15.63	51.08	1579	6.168	5398	4350
235	3	60	400	.7750	1.88	.17	366	30.16	495.7	12.93	53.08	1539	6.238	4338	3610
235	4	89	C	.5257	.96	.16	367	29.06	317.7	16.33	51.08	1539	6.038	6228	3980
235	4	97	C	.4910	.96	.15	368	32.86	469.7	24.33	54.38	1669	4.558	4838	5120
235	5	A	200	.5399	.99	.13	369	17.76	263.7	14.13	49.68	1429	5.568	6468	2720
235	5	132	200	.6910	1.28	.16	370	25.46	469.7	29.83	57.98	1237	3.468	3248	4420
235	6	173	400	.7983	1.62	.12	371	29.46	375.7	18.83	43.78	1569	5.168	5628	3230

INSTALL	PLOT	TREE	TREAT	Needle Weight — g —	N %	P %	NUM	Zn	Mn	B	Fe	Mg	Cu	K	Ca
								ug/g							
235	6	191	400	.6811	1.89	.17	372	15.16	398.7	20.73	56.38	1369	4.259	5288	4220
236	1	A	400	.7002	1.60	.21	373	20.14	306.7	18.85	60.29	2285	5.747	7697	3870
236	1	B	400	.5396	1.89	.15	374	23.34	626.7	24.05	48.29	2095	5.147	5787	5150
236	2	A	200	.6216	1.21	.19	375	22.84	750.7	28.75	68.09	2195	5.317	7227	5010
236	2	B	200	.5721	1.48	.23	376	33.14	472.7	20.85	74.79	1905	6.057	5047	5180
236	3	A	C	.6437	1.33	.26	377	22.34	329.7	18.55	72.39	2185	6.057	6017	3770
236	3	169	C	.5152	1.23	.14	378	22.14	216.7	20.65	72.79	2525	7.597	7867	3700
236	4	A	400	.8491	1.98	.19	379	45.94	599.7	26.25	49.89	2385	6.187	11247	5110
236	4	83	400	.7529	1.66	.14	380	26.24	472.7	22.05	97.59	1945	7.397	6827	5210
236	5	A	C	.5631	1.25	.19	381	30.14	258.7	29.75	72.79	2275	5.917	6087	3310
236	5	105	C	.5856	1.26	.18	382	25.64	432.7	17.65	57.69	2275	5.117	6417	3770
236	6	A	200	.6024	1.39	.17	383	21.14	472.7	19.75	99.59	2065	7.127	5647	4840
236	6	B	200	.7502	1.29	.15	384	29.24	526.7	19.75	92.89	2065	7.157	4847	4170
237	1	3	400	.6935	1.62	.19	385	42.34	453.0	18.52	35.76	1129	5.145	6976	3305
237	1	23	400	.4247	1.12	.19	386	19.34	359.0	22.22	40.16	1599	5.815	8356	3085
237	2	24	200	.4922	1.43	.21	387	34.24	224.0	22.22	43.16	1289	5.185	4996	3215
237	2	34	200	.7606	1.15	.22	388	43.34	376.0	20.32	39.46	1729	5.115	7786	4115
237	3	A	C	.4246	1.04	.15	389	26.44	345.0	25.32	35.76	1409	4.145	6376	3405
237	3	46	C	.3449	1.16	.18	390	36.24	251.0	24.62	45.46	1719	4.145	4366	3705
237	4	70	C	.4148	1.18	.18	391	26.44	392.0	26.82	41.46	1629	5.445	6546	5045
237	4	75	C	.3396	1.22	.19	392	29.84	210.0	26.72	46.16	1249	4.475	4766	4215
237	5	A	400	.6468	1.43	.19	393	46.34	419.0	18.62	43.16	1259	4.545	7616	4175
237	5	101	400	.4319	1.07	.18	394	23.84	236.0	17.52	42.16	1049	5.445	4636	4575
237	6	117	200	.5196	1.21	.23	395	26.14	386.0	22.12	40.16	1529	6.225	8426	3265
237	6	126	200	.4875	1.17	.15	396	26.04	419.0	19.62	29.06	1239	5.285	4956	3675
238	1	A	C	.7957	1.06	.22	397	18.74	264.7	32.17	139.28	1079	6.760	5732	2480
238	1	10	C	.5309	.98	.24	398	34.14	262.7	19.67	100.30	1079	7.290	6832	3670
238	2	39	200	1.1335	1.37	.23	399	35.54	260.7	29.07	108.28	941	9.980	6872	3150
238	2	48	200	.8050	1.67	.21	400	41.84	250.7	21.37	60.68	1449	7.860	7302	3770
238	3	A	400	.8077	2.15	.15	401	40.84	299.7	23.77	160.28	1389	9.660	4352	3600
238	3	57	400	.6810	2.02	.23	402	44.24	371.7	24.57	117.28	1459	10.890	8442	3770
238	4	73	400	.9507	2.12	.26	403	34.54	261.7	28.17	109.28	1319	7.190	7132	4340
238	4	74	400	.8122	1.55	.22	404	27.44	210.7	17.97	101.28	1249	8.430	8242	3110
238	5	A	200	.6995	1.18	.21	405	27.34	269.7	22.87	83.48	1299	6.190	5022	3070
238	5	94	200	1.0339	1.56	.22	406	42.24	182.7	30.87	59.68	1659	6.120	6702	4340
238	6	A	C	.8892	1.20	.23	407	37.84	250.7	24.37	51.28	1619	8.740	6202	3940
238	6	111	C	.6862	1.08	.17	408	23.04	328.7	28.77	78.18	1539	6.790	7202	4210
239	1	3	200	.5664	.96	.25	409	27.71	542.8	25.95	94.92	2209	5.874	3929	4515
239	1	11	200	.8025	1.24	.18	410	18.11	626.8	28.25	72.82	1529	6.134	3899	4545
239	2	20	C	.6088	1.67	.29	411	20.51	371.8	18.05	80.92	2439	4.664	6149	3945
239	2	30	C	.3794	1.23	.16	412	25.91	375.8	27.65	104.02	2179	5.264	5739	5785
239	3	47	400	.3598	1.67	.23	413	37.81	697.8	21.85	58.72	1959	4.834	6449	7465
239	3	54	400	.8741	1.44	.28	414	20.41	205.8	24.55	70.52	2209	4.664	4029	4545
239	4	58	400	.9921	1.33	.22	415	26.71	139.8	22.05	82.52	2319	7.244	5779	3705
239	4	67	400	.4701	1.45	.30	416	20.21	258.8	23.65	69.82	879	4.124	4269	4915
239	5	85	200	.4025	.91	.20	417	33.71	307.8	25.85	78.22	2289	7.074	6719	4745
239	5	96	200	.3703	.91	.18	418	15.71	234.8	24.55	68.52	2149	5.464	4369	6355
239	6	104	C	.4375	1.67	.21	419	28.51	157.8	21.15	98.02	2239	5.194	5239	5255
239	6	105	C	.4716	1.77	.22	420	25.61	331.8	30.85	72.12	2269	5.404	5679	4245
240	1	3	400	.8173	1.46	.115	421	16.19	252.5	7.45	48.58	2214	3.125	5111	2620
240	1	34	400	.4971	1.68	.156	422	17.69	296.5	12.25	39.18	2324	3.593	5451	2570
240	2	53	C	.6573	.95	.208	423	25.39	292.5	17.65	59.68	2444	2.685	5511	4240
240	2	60	C	.4311	.99	.168	424	29.69	312.5	23.15	49.28	2184	6.133	8301	7060
240	3	82	200	.6286	1.34	.156	425	13.69	279.5	16.15	46.58	1884	3.653	4941	2440
240	3	95	200	.9560	1.20	.167	426	18.49	298.5	22.03	59.23	1774	3.523	6921	2970

INSTALL	PLOT	TREE	TREAT	Needle Weight -- g --	N %	P %	NUM	Zn	Mn	B	Fe	Mg	Cu	K	Ca
								ug/g							
240	4	130	C	.5924	1.17	.219	427	20.59	330.5	22.83	38.88	2404	4.163	6491	4440
240	4	136	C	.3819	1.19	.156	428	15.89	445.5	17.83	45.18	2164	6.343	5921	4940
240	5	153	200	.7044	1.24	.208	429	37.59	499.5	30.53	41.18	2464	5.203	6151	4610
240	5	159	200	.7246	1.27	.156	430	19.19	315.5	22.43	39.18	2044	4.223	4371	1980
240	6	177	400	.4079	2.04	.208	431	22.99	683.5	22.63	47.88	2274	4.223	6391	6520
240	6	189	400	.7142	1.41	.156	432	20.39	338.5	17.53	38.88	2084	4.053	5551	3770
241	1	A	200	.7983	1.17	.24	433	24.09	442.5	25.95	75.70	1350	8.725	5870	3964
241	1	24	200	.8874	1.57	.18	434	36.39	353.5	31.45	46.60	2140	8.825	13470	3594
241	2	A	400	.7679	1.42	.29	435	31.29	303.5	37.85	107.50	1430	9.865	11470	4164
241	2	B	400	.6452	1.88	.27	436	24.09	438.5	26.45	54.30	2190	7.985	9360	4304
241	3	A	C	.8418	.89	.22	437	27.49	361.5	18.55	57.60	1290	5.535	4800	5504
241	3	80	C	.6282	.89	.23	438	18.19	318.5	29.35	48.60	1620	6.305	7680	3734
241	4	A	C	.6281	.89	.21	439	27.89	375.5	37.55	77.10	1650	10.170	7350	4974
241	4	107	C	.6161	.91	.26	440	26.39	462.5	22.25	69.40	1720	5.605	8420	3534
241	5	134	200	.4950	1.36	.24	441	16.09	633.5	43.25	72.70	1480	9.035	6510	6214
241	5	142	200	.5739	.77	.23	442	22.29	526.5	30.45	50.20	1790	5.735	9830	7424
241	6	A	400	.6314	1.24	.24	443	20.49	371.5	25.05	75.10	1790	7.515	11370	2854
241	6	B	400	.8510	1.91	.28	444	30.79	472.5	39.55	48.90	2370	8.655	8760	4134
242	1	A	400	.5917	2.36	.24	445	19.68	179.6	20.89	38.39	1459	6.775	6680	3322
242	1	B	400	.6153	1.11	.14	446	21.88	566.6	21.89	64.89	1589	14.970	6880	3772
242	2	A	C	.5930	1.05	.14	447	20.38	492.6	30.89	59.49	1429	8.015	6140	3472
242	2	B	C	.4827	.86	.18	448	26.98	405.6	25.49	51.49	1329	6.605	5500	3402
242	3	A	200	.5486	1.11	.17	449	14.38	314.6	19.59	33.09	777	6.105	5270	2532
242	3	B	200	.5269	1.22	.16	450	25.08	389.6	23.79	38.69	923	6.445	6780	3672
242	4	A	400	.6770	1.48	.15	451	14.38	320.6	24.39	55.19	2059	7.145	6380	4842
242	4	B	400	.4371	1.57	.14	452	36.18	666.6	19.39	38.09	1539	5.805	4460	5552
242	5	A	200	.5901	1.19	.11	453	13.98	276.6	16.59	33.69	8279	4.375	3660	3602
242	5	211	200	.4153	1.29	.15	454	37.98	663.6	24.09	57.49	1509	7.175	5100	6822
242	6	238	C	.4496	.90	.18	455	14.68	299.6	16.89	37.39	827	5.735	5810	2312
242	6	252	C	.3633	.93	.17	456	23.08	589.6	22.89	46.49	1179	4.565	4770	4172
243	1	2	C	.6337	1.16	.20	457	43.39	606.5	29.65	103.50	1560	4.095	5300	4874
243	1	9	C	.7155	1.19	.19	458	36.99	445.5	35.15	56.30	1340	2.115	4870	4534
243	2	35	200	.7943	1.61	.19	459	27.09	351.5	27.05	55.90	1660	3.655	4900	2784
243	2	40	200	.6595	1.49	.14	460	36.99	257.5	24.65	52.60	1440	2.915	4130	3194
243	3	45	400	.6372	1.64	.19	461	33.99	323.5	20.55	68.40	1360	3.525	5970	3764
243	3	50	400	.7301	2.05	.20	462	22.89	306.5	28.55	69.40	1020	2.345	5240	3734
243	4	77	400	.6412	1.55	.14	463	27.19	432.5	22.55	55.30	1740	2.935	5070	4334
243	4	86	400	.9359	1.59	.23	464	42.09	425.5	19.05	70.40	1770	2.145	6850	4904
243	5	107	200	.7670	1.47	.14	465	36.69	344.5	20.15	72.00	2240	3.825	8760	4234
243	5	119	200	.7078	1.52	.19	466	30.59	432.5	14.85	47.60	2370	4.095	7680	5174
243	6	125	C	.6208	1.13	.21	467	41.09	334.5	29.65	53.30	1850	2.935	5200	6044
243	6	137	C	.5409	1.11	.22	468	17.99	224.5	21.75	67.70	2370	2.715	9030	2994
244	1	A	200	.3981	.94	.13	469	12.16	132.7	17.43	52.78	1719	2.418	4218	5360
244	1	B	200	.6489	1.16	.13	470	18.66	111.7	17.13	49.08	1539	2.449	3678	4450
244	2	A	400	.4796	1.15	.13	471	11.96	110.7	20.13	83.58	1649	27.000	9008	6700
244	2	B	400	.7039	1.22	.09	472	16.16	113.7	6.25	39.68	1679	1.468	5018	4690
244	3	A	C	.2621	.85	.17	473	27.86	344.7	15.73	31.28	1569	3.338	6128	9450
244	3	42	C	.8241	1.08	.21	474	103.96	233.7	19.83	118.40	1779	3.118	5358	5120
244	4	A	400	.6687	1.27	.12	475	27.16	211.7	20.83	48.28	1309	3.248	6368	4690
244	4	51	400	.8297	1.13	.13	476	31.16	119.7	24.93	41.38	1749	2.008	4548	5220
244	5	A	200	.4523	1.20	.13	477	12.76	190.7	18.83	74.58	1459	3.038	6496	5590
244	5	B	200	.6507	1.00	.15	478	22.96	180.7	20.03	75.18	1939	1.948	5728	4690
244	6	123	C	.6278	1.12	.09	479	18.06	59.3	24.43	93.28	1309	1.108	4018	4790
244	6	124	C	.7568	1.18	.13	480	18.76	87.6	19.03	49.33	1099	0.908	4618	3780
245	1	A	400	.8243	1.41	.21	481	23.65	154.5	29.92	124.00	2715	6.406	10527	4041

INSTALL	PLOT	TREE	TREAT	Needle Weight — g —	N %	P %	NUM	Zn	Mn	B	Fe	Mg	Cu	K	Ca
								ug/g							
245	1	B	400	.6093	1.39	.18	482	11.05	212.5	31.32	78.30	1925	2.946	6537	8031
245	2	A	200	.6266	1.06	.20	483	10.65	193.5	32.92	89.00	2175	3.316	7407	5611
245	2	29	200	.6850	1.38	.16	484	32.95	159.5	26.62	101.00	1935	4.356	6397	3801
245	3	A	C	.7809	1.03	.19	485	23.55	139.5	18.92	102.00	2325	3.186	5357	3601
245	3	B	C	.7673	1.19	.20	486	26.45	129.5	24.22	115.00	2285	4.726	7947	4571
245	4	A	200	.8343	1.25	.10	487	26.05	82.7	21.02	70.20	1765	3.086	6337	4781
245	4	65	200	.4100	1.23	.08	488	23.15	124.5	32.32	73.90	1705	3.596	5397	5041
245	5	A	C	.5056	.97	.10	489	11.55	201.5	32.92	155.00	2105	4.866	10427	5921
245	5	B	C	.9400	.99	.14	490	16.15	107.5	24.82	68.50	2065	2.886	5327	3371
245	6	A	400	.9571	1.27	.22	491	17.45	99.5	26.82	74.60	2205	3.416	7677	3901
245	6	B	400	.6855	1.84	.22	492	29.15	172.5	27.12	88.00	2115	4.326	6127	4911

Foliar mineral nutrient concentrations for the 1982 installations.

DOUGLAS-FIR
FERTILIZATION STUDY
FOLIAR NUTRIENT CONCENTRATIONS

INSTALL	PLOT	TREE	NUM	N	P	Zn	Mn	B	Fe	Mg	Cu	K	Ca
				%	%	ug/g							
246	1	9	74	1.25	0.15	26.8	268	28.9	61.3	1118	2.08	5849	4179
246	1	35	75	1.46	0.13	18.6	219	13.9	78.9	1418	2.24	4459	2899
246	2	20	76	1.05	0.15	33.8	225	21.2	72.8	1118	3.66	6819	4349
246	2	56	77	1.37	0.12	27.8	190	22.3	56.6	1368	2.41	5969	4519
246	3	89	79	1.24	0.10	40.0	263	20.6	60.1	1380	2.57	7849	5759
246	3	101	80	1.24	0.12	38.7	270	12.5	60.1	1198	2.12	6879	4489
246	4	121	81	1.56	0.13	47.1	263	12.0	62.6	1648	2.86	5869	4119
246	4	123	82	1.33	0.12	32.3	144	13.0	37.0	1298	2.92	8559	4389
246	5	172	84	1.48	0.13	35.7	89	22.0	42.8	1038	2.92	5999	5819
246	5	181	85	1.24	0.13	28.2	184	20.2	61.0	1328	2.82	8639	4589
246	6	198	86	1.59	0.13	34.0	91	28.7	76.1	1238	3.85	10759	3279
246	6	200	87	1.37	0.14	34.4	159	53.5	90.0	1198	4.72	12359	3219
247	1	9	89	1.51	0.17	18.4	413	30.1	53.6	1038	3.08	5989	4089
247	1	16	90	1.76	0.21	28.6	258	33.2	49.9	943	2.57	4299	2819
247	2	22	185	1.11	0.22	24.2	342	48.5	87.2	1774	3.50	7207	4229
247	2	23	186	1.12	0.29	38.4	487	52.3	92.9	1809	3.01	7869	5093
247	3	44	92	2.28	0.19	28.2	296	34.4	64.1	1568	3.56	5809	4059
247	3	69	187	1.74	0.18	37.9	208	34.7	60.4	1380	2.70	4279	2252
247	4	78	188	1.24	0.18	24.1	290	45.8	58.3	977	2.52	5853	2885
247	4	82	189	1.17	0.17	36.9	508	34.7	72.8	1083	4.55	8628	4565
247	5	99	94	0.09	0.59	41.9	493	24.5	78.9	1558	2.89	6229	3989
247	5	106	95	1.62	0.22	40.0	363	27.6	67.2	1008	3.08	6579	3769
247	6	113	96	1.22	0.19	18.7	314	50.2	78.2	1088	4.69	11359	3729
247	6	121	97	1.33	0.12	10.1	327	48.0	60.1	1038	2.76	10259	3009
248	1	4	1	1.76	0.16	35.9	308	34.7	90.0	1528	2.24	5129	2819
248	1	7	2	2.03	0.15	32.0	339	29.4	100.3	1318	1.95	7029	2799
248	2	29	3	0.20	0.64	36.6	391	32.2	131.3	1278	2.85	6969	3449
248	2	33	4	1.60	0.12	29.6	413	19.0	140.9	1688	3.94	6769	4389
248	3	58	99	1.30	0.18	56.4	607	19.2	159.2	1798	3.63	6919	3639
248	3	60	6	2.47	0.09	30.5	429	35.0	100.6	1168	1.56	4989	2699
248	4	71	7	2.67	0.09	48.6	484	35.7	137.1	1698	2.58	6869	3349
248	4	72	100	1.98	0.19	79.5	487	53.5	194.7	2298	4.53	5099	3039
248	5	85	8	1.43	0.14	21.6	317	31.6	115.0	1128	1.11	5709	2359
248	5	90	9	1.61	0.10	38.7	437	30.7	91.0	1508	1.23	6899	2989
248	6	102	10	2.43	0.14	24.0	292	22.7	80.7	1138	1.05	4909	1689
248	6	107	11	2.01	0.13	36.3	437	38.1	100.6	1778	3.90	7219	3669
249	1	4	102	1.36	0.12	36.6	493	33.2	103.5	1148	3.72	6069	2399
249	1	6	16	1.25	0.12	32.0	889	19.1	95.8	1688	4.33	8509	4829
249	2	23	103	1.68	0.05	41.9	317	28.9	82.4	1678	2.15	5299	3829
249	2	26	17	1.41	0.07	36.3	410	18.7	62.9	1438	2.32	5729	2339
249	3	37	18	1.75	0.04	35.1	614	28.6	77.1	1488	2.30	4039	2629

INSTALL	PLOT	TREE	NUM	N	P	Zn	Mn	B	Fe	Mg	Cu	K	Ca
249	3	41	19	2.46	0.05	49.6	567	23.0	86.2	1600	4.52	7040	2700
249	4	49	21	2.15	0.06	27.9	475	20.0	103.5	981	3.03	7629	1700
249	4	54	22	1.95	0.08	36.9	716	20.0	72.4	2010	3.72	7100	3600
249	5	72	23	1.33	0.17	40.3	470	22.3	73.9	1960	2.72	6739	2299
249	5	93	24	1.92	0.12	34.0	614	16.7	111.2	1700	3.61	11359	3769
249	6	101	26	2.00	0.26	40.9	543	26.4	79.2	2170	3.90	6469	5079
249	6	107	27	2.08	0.30	42.5	394	16.1	63.2	1440	3.77	6079	4139
250	1	4	29	1.20	0.18	10.5	286	12.7	50.6	734	1.79	5549	2779
250	1	16	20	1.33	0.23	15.9	277	14.5	71.1	843	3.00	7319	3409
250	2	215	31	1.71	0.19	10.4	204	10.9	29.2	900	2.90	5839	3539
250	2	225	32	1.33	0.16	10.1	127	11.8	20.5	753	1.53	5579	2109
250	3	73	33	1.91	0.23	12.1	147	9.9	20.9	606	1.14	6259	1699
250	3	78	34	1.43	0.20	7.8	221	4.2	43.1	747	2.49	6419	2699
250	4	120	36	1.61	0.24	10.1	190	43.6	31.7	866	2.07	4909	2299
250	4	134	37	1.40	0.18	15.0	260	23.0	53.6	936	1.66	6359	3109
250	5	150	39	1.17	0.20	32.3	376	36.0	103.5	1120	3.61	6449	4019
250	5	173	38	1.16	0.29	18.4	333	34.1	56.1	1200	2.27	7129	2449
250	6	179	41	1.17	0.24	20.0	437	20.3	75.8	1140	1.88	5309	3109
250	6	180	42	1.18	0.19	17.6	336	37.2	67.5	869	3.03	7269	3109
251	1	3	43	1.11	0.13	21.7	407	43.6	52.0	1180	3.43	7139	4279
251	1	25	46	1.24	0.16	34.4	398	42.1	66.8	1160	3.67	7669	4009
251	2	56	44	1.07	0.20	32.6	410	43.4	45.3	1020	4.62	7419	4859
251	2	61	47	1.10	0.15	23.3	314	40.0	60.4	1250	3.80	5969	2549
251	3	64	48	1.70	0.21	27.9	524	26.4	49.0	1360	2.69	5939	2649
251	3	65	107	1.75	0.17	33.8	242	13.7	20.0	625	1.76	3909	2009
251	4	92	50	1.39	0.26	27.2	462	30.4	54.2	920	3.32	6019	4149
251	4	130	51	1.30	0.20	30.1	300	19.5	59.4	737	2.27	5749	3219
251	5	140	52	1.14	0.20	32.6	444	36.9	51.4	1010	2.72	6259	2359
251	5	157	53	1.06	0.22	30.0	293	26.7	40.4	1090	2.62	6069	2979
251	6	170	55	1.45	0.26	33.5	552	31.6	105.4	1120	2.24	7739	4279
251	6	209	100	1.33	0.13	22.7	317	0.8	23.0	634	1.25	4229	2599
252	1	21	56	1.15	0.16	31.6	370	10.9	50.8	1540	1.79	5749	4699
252	1	28	57	1.27	0.20	31.6	441	42.8	70.3	1400	3.46	5359	5859
252	2	62	59	1.71	0.13	40.0	635	35.3	57.9	2100	4.36	5009	5439
252	2	75	60	1.44	0.28	33.5	459	36.5	59.1	1450	2.04	7999	5409
252	3	91	61	1.63	0.22	10.0	355	20.7	43.7	990	4.03	8109	4249
252	3	110	62	1.83	0.21	29.0	204	36.5	31.1	1350	3.00	8669	4379
252	4	120	64	1.00	0.19	34.4	512	49.5	60.7	2040	4.36	8379	4729
252	4	149	65	1.25	0.23	43.4	434	33.5	47.1	1550	3.90	6679	5369
252	5	162	66	1.57	0.17	33.5	404	36.5	41.6	1470	3.00	8009	4279
252	5	177	67	1.36	0.19	28.5	543	29.1	52.7	2020	3.40	12059	5249
252	6	202	69	1.44	0.19	35.9	520	36.5	41.0	1000	3.96	7109	3769
252	6	231	70	1.67	0.22	32.3	506	25.0	60.7	1390	5.13	10459	4009
253	1	1	109	1.05	0.29	20.0	202	23.3	43.1	1010	1.54	5419	1639
253	1	10	110	1.30	0.27	36.9	233	19.1	54.5	1450	2.24	5329	3119
253	2	35	111	1.00	0.12	30.0	336	19.1	62.6	1520	3.11	5919	3959
253	2	40	112	1.60	0.25	33.0	266	36.0	53.3	1110	3.59	4879	2239
253	3	63	114	2.53	0.25	22.0	169	10.0	53.9	1100	4.04	4909	3319
253	3	73	115	1.74	0.23	34.1	317	30.4	91.0	1340	4.43	5909	3859
253	4	100	116	1.40	0.14	24.2	327	29.4	61.3	1560	4.30	5179	5919
253	4	105	117	1.27	0.16	23.5	390	29.0	99.6	1400	3.90	7049	4009
253	5	124	119	1.50	0.16	44.6	373	14.0	61.0	1700	4.94	8319	5659
253	5	120	120	1.85	0.17	15.2	333	39.3	60.1	1000	4.24	7609	4149
253	6	145	121	0.84	0.14	24.4	224	53.0	100.3	1510	4.72	9409	2559
253	6	156	122	1.17	0.22	24.0	214	25.5	83.3	891	3.85	5999	3609

INSTALL	PLOT	TREE	NUM	N	P	Zn	Mn	B	Fe	Mg	Cu	K	Ca
254	1	18	124	1.34	0.17	26.5	370	17.9	55.5	1000	2.79	6809	3109
254	1	26	125	1.42	0.25	14.2	401	31.0	101.6	1020	5.01	8699	2919
254	2	82	126	2.45	0.24	12.6	264	21.5	97.7	602	4.69	6519	1409
254	2	85	127	2.40	0.32	18.0	323	17.1	82.4	956	2.98	8429	3079
254	3	108	129	1.40	0.25	20.4	202	14.7	43.1	609	2.60	4809	2069
254	3	112	130	1.23	0.30	17.0	413	18.9	101.6	821	2.73	8989	2699
254	4	165	131	1.17	0.27	14.3	276	33.2	82.4	718	2.53	10159	2559
254	4	182	132	1.23	0.29	16.7	251	36.3	81.4	802	2.73	9439	2829
254	5	212	134	1.55	0.25	16.9	274	22.0	92.0	802	3.40	8359	3319
254	5	224	135	1.54	0.22	12.6	242	16.5	113.1	1000	3.02	8769	2649
254	6	244	137	2.69	0.23	13.4	189	21.5	121.7	1000	3.72	5709	1749
254	6	275	136	2.19	0.33	10.3	185	20.0	114.0	994	3.59	5409	1749
255	1	42	142	1.23	0.16	10.7	206	22.0	96.8	900	4.72	9709	3109
255	1	53	143	1.20	0.17	24.3	145	10.7	124.6	1220	2.95	7109	2509
255	2	95	144	1.42	0.21	16.3	98	23.6	101.6	1000	4.24	8539	4009
255	2	147	145	1.42	0.15	16.9	88	17.3	39.1	802	2.66	5989	2569
255	3	213	146	1.78	0.20	24.8	197	27.0	55.5	1058	2.66	6109	3069
255	3	225	147	2.36	0.21	34.1	170	16.6	142.8	1400	5.14	5469	4019
255	4	237	193	1.35	0.27	23.5	271	43.4	151.5	1544	3.94	8935	5621
255	4	279	194	1.10	0.19	23.8	272	24.5	103.5	1246	3.20	5802	3855
255	5	325	195	1.30	0.20	83.2	249	30.7	86.2	1227	3.38	6842	4354
255	5	352	196	1.27	0.20	45.3	205	29.4	81.4	1100	3.32	7024	3701
255	6	406	197	1.30	0.14	22.6	271	27.7	115.0	1284	4.62	7658	4479
255	6	413	198	1.30	0.19	27.9	300	33.0	196.6	1236	4.37	7012	3365
256	1	12	200	1.16	0.21	17.0	150	28.5	82.4	1006	3.94	5949	3240
256	1	53	201	1.30	0.26	41.9	300	30.7	91.0	1140	4.06	9156	4044
256	2	105	202	1.30	0.23	44.6	199	39.0	53.6	930	3.63	8100	4412
256	2	108	203	1.29	0.34	21.9	197	31.9	67.8	942	3.63	10615	3423
256	3	119	205	1.77	0.23	9.6	245	32.8	42.5	902	3.20	7533	3300
256	3	143	206	1.68	0.19	32.3	327	24.6	81.4	1275	2.54	5911	3029
256	4	202	223	1.27	0.40	20.3	218	43.6	116.9	1430	4.73	7207	4229
256	4	211	207	1.07	0.29	16.5	129	44.6	167.8	1160	3.99	6391	3644
256	5	252	209	1.46	0.22	31.6	269	28.5	44.6	1467	3.20	5757	3461
256	5	290	210	2.01	0.22	20.8	249	32.5	39.7	1275	2.85	4337	2511
256	6	320	224	1.34	0.18	18.5	210	30.7	70.6	958	3.41	5949	3615
256	6	342	211	1.18	0.20	17.6	170	23.4	50.0	840	2.42	6900	2770
257	1	1	213	1.21	0.27	29.6	199	15.1	193.7	1054	4.65	11767	3058
257	1	7	214	1.10	0.16	20.2	140	23.5	98.7	773	3.66	12151	1733
257	2	22	215	0.97	0.18	29.8	303	23.7	103.5	1687	3.10	7917	4412
257	2	34	216	0.90	0.18	29.7	327	19.0	92.9	1406	3.35	7456	4207
257	3	43	218	1.45	0.18	42.2	314	21.5	88.1	1198	3.23	9847	4047
257	3	50	219	1.57	0.31	52.4	152	25.7	129.4	1073	4.55	11191	2232
257	4	61	220	1.31	0.27	19.9	257	14.3	92.0	915	2.21	8954	2588
257	4	62	221	0.90	0.16	30.0	269	23.5	80.2	822	3.13	11287	3490
257	5	63	149	1.34	0.13	22.3	112	15.2	77.4	612	3.25	4250	1992
257	5	83	150	1.29	0.23	20.2	218	15.7	50.0	977	3.07	7428	2645
257	6	84	151	0.99	0.33	23.3	146	21.9	86.2	1121	3.56	6842	1589
257	6	90	152	1.09	0.35	42.2	163	19.5	81.4	1400	3.66	11671	4076
258	1	10	154	1.73	0.22	26.9	134	14.7	103.5	996	3.35	7456	2021
258	1	16	155	1.97	0.31	36.3	113	15.7	86.2	874	3.38	8801	1829
258	2	22	156	0.96	0.23	23.0	170	14.5	96.8	1006	4.09	6160	2367
258	2	29	157	1.09	0.24	34.4	154	19.5	79.5	1361	3.69	5740	2856
258	3	37	159	1.15	0.11	25.0	164	24.3	70.2	1217	3.35	5706	2000
258	3	42	160	1.17	0.10	15.1	112	24.1	90.0	649	5.00	8071	1167
258	4	60	161	1.54	0.29	29.7	197	18.3	92.0	1275	4.19	6900	2856

INSTALL	PLOT	TREE	NUM	N	P	Zn	Mn	B	Fe	Mg	Cu	K	Ca
258	4	63	162	1.33	0.16	31.0	211	16.1	56.3	1687	3.91	9751	3029
258	5	68	164	2.06	0.30	8.5	150	19.0	65.3	1083	4.30	7332	2655
258	5	85	225	2.07	0.29	16.6	133	22.9	70.8	1200	3.60	3117	2770
258	6	90	226	2.04	0.29	29.6	177	22.2	110.2	1054	5.85	6410	1608
258	6	94	165	1.96	0.23	13.9	312	23.9	92.9	1200	3.32	8321	2703
259	1	4	167	0.98	0.18	25.0	413	21.5	56.1	1937	3.28	7255	4872
259	1	16	168	1.66	0.23	40.6	239	21.9	53.9	1764	4.58	12023	4354
259	2	38	169	1.30	0.19	17.9	269	23.1	49.0	1361	2.03	6967	4911
259	2	47	170	1.62	0.14	39.7	574	27.8	53.6	1687	3.69	5970	4047
259	3	77	172	2.03	0.28	28.5	484	22.9	81.4	1409	3.53	10615	4354
259	3	79	173	1.76	0.24	29.4	422	21.9	45.9	1236	3.87	11671	4632
259	4	110	174	1.39	0.28	33.3	500	19.9	41.8	1620	4.89	10903	5372
259	4	121	175	0.98	0.26	26.4	413	23.2	48.7	1601	3.56	9079	4661
259	5	135	177	1.55	0.23	23.9	303	21.2	74.6	1476	3.60	9655	3183
259	5	170	178	1.57	0.24	33.5	245	17.3	73.9	1716	4.37	9847	4604
259	6	185	180	1.51	0.20	35.1	472	16.4	56.3	1670	2.46	5402	3740
259	6	197	179	1.70	0.22	18.6	257	23.2	65.7	1300	2.64	4289	2885
260	1	11	227	1.45	0.23	67.1	595	28.0	73.0	1649	5.51	11479	3855
260	1	14	228	1.01	0.21	36.3	465	22.5	62.9	1524	4.12	8013	4076
260	2	42	230	1.10	0.25	12.8	437	21.2	60.1	1064	3.20	6746	3461
260	2	46	229	1.07	0.25	20.8	614	22.2	81.4	1073	3.53	8100	2175
260	3	70	231	1.37	0.22	20.4	586	24.8	62.6	1409	3.81	6996	5372
260	3	76	232	1.43	0.22	40.3	630	15.3	51.4	1073	3.56	7170	2751
260	4	86	234	1.29	0.21	45.5	722	26.3	51.2	1419	4.09	7456	3740
260	4	93	235	1.15	0.21	23.2	410	31.3	32.9	1409	2.52	6064	3212
260	5	101	237	1.45	0.25	52.1	333	26.8	54.5	1611	5.85	9847	5218
260	5	108	236	1.37	0.30	38.7	401	21.9	69.0	1304	4.43	8263	4287
260	6	128	239	1.48	0.25	27.4	487	13.9	26.8	766	2.52	8167	3116
260	6	137	238	1.74	0.35	34.4	552	18.2	67.8	1083	5.14	8455	3212
261	1	15	300	1.54	0.27	33.3	407	24.7	77.1	1035	3.28	6314	3269
261	1	21	240	1.54	0.20	36.9	447	28.5	69.6	1275	3.87	8724	3183
261	2	34	242	1.37	0.30	40.8	716	44.6	53.6	1995	3.20	6439	3701
261	2	40	241	1.03	0.25	20.3	450	23.4	40.0	732	3.01	9204	2732
261	3	71	244	2.18	0.25	54.9	398	29.4	62.9	2273	2.92	7284	4200
261	3	77	243	1.76	0.17	47.4	506	15.3	65.9	1131	3.60	8570	4229
261	4	92	245	1.09	0.26	34.8	653	37.8	47.4	1054	2.89	9847	2319
261	4	103	246	1.30	0.32	40.6	361	23.6	86.2	1352	4.95	11671	3212
261	5	125	248	1.67	0.19	42.8	490	20.8	44.1	1083	4.40	7585	3797
261	5	131	247	1.59	0.27	47.1	475	25.5	70.6	1313	3.44	6381	3519
261	6	147	301	1.29	0.29	45.5	555	23.1	51.2	1572	2.79	7639	3490
261	6	149	302	1.23	0.21	30.0	506	18.5	66.8	1304	3.94	8724	3336
262	1	4	250	1.55	0.18	35.1	642	21.8	67.5	1198	3.38	8503	3240
262	1	24	252	1.54	0.16	32.6	719	24.8	45.3	1169	3.20	6257	4047
262	2	60	254	1.60	0.13	34.1	351	13.4	90.0	1332	6.46	10615	2751
262	2	68	253	1.54	0.23	25.4	301	26.7	122.7	1227	3.91	6496	1896
262	3	90	255	1.28	0.17	27.2	685	17.4	44.9	1313	4.09	10711	4076
262	3	105	256	1.33	0.22	38.1	706	19.2	36.7	1832	2.89	6608	4719
262	4	121	262	1.28	0.16	43.4	536	17.3	61.3	1764	3.44	4615	6293
262	4	130	261	1.50	0.28	44.3	342	14.4	50.8	1764	3.84	7245	4412
262	5	153	263	1.68	0.27	21.4	642	22.8	68.7	954	2.61	5853	2530
262	5	183	264	1.61	0.17	38.4	724	13.4	104.4	1198	2.33	4221	4632
262	6	216	265	1.34	0.30	25.8	270	19.1	79.2	1179	3.50	6717	2847
262	6	218	266	1.21	0.23	33.8	510	17.9	61.3	1304	3.75	7552	3269
263	1	5	267	1.41	0.28	44.6	669	28.9	60.1	1515	3.07	8119	3644
263	1	15	268	1.26	0.29	29.2	669	36.3	59.1	1304	3.32	8321	4133

INSTALL	PLOT	TREE	NUM	N	P	Zn	Mn	B	Fe	Mg	Cu	K	Ca	
	263	2	34	269	1.80	0.29	18.7	1152	49.5	100.6	1591	4.95	10807	5122
	263	2	39	271	1.41	0.24	43.4	533	30.0	110.2	1879	4.55	12919	4479
	263	3	47	272	2.49	0.41	20.5	691	26.0	110.2	1275	3.35	9943	3576
	263	3	50	273	2.08	0.34	32.3	582	20.9	78.2	930	2.11	5431	1964
	263	4	73	274	1.20	0.27	55.1	645	29.1	59.8	1553	4.12	7853	3240
	263	4	82	276	1.50	0.27	44.6	663	23.8	42.1	1505	3.66	7783	4834
	263	5	96	277	1.28	0.34	42.5	348	20.3	55.8	1585	2.49	4922	2338
	263	5	104	278	1.23	0.32	27.8	558	28.9	58.3	1255	4.15	7824	4354
	263	6	119	279	1.81	0.28	48.6	484	20.8	61.9	1246	2.64	7824	2549
	263	6	120	281	2.41	0.22	42.5	706	21.1	66.8	1294	3.81	8849	3519
	264	1	10	282	1.14	0.17	30.1	204	20.5	70.9	1265	2.36	5268	3116
	264	1	14	283	1.02	0.16	20.2	204	22.9	73.3	865	2.70	4529	3672
	264	2	49	284	1.09	0.18	19.2	306	24.4	61.3	1332	2.80	6468	3388
	264	2	83	289	1.17	0.23	32.0	267	25.9	49.9	1620	2.54	5172	2991
	264	3	119	290	1.57	0.12	23.8	327	25.6	58.3	939	4.19	4080	3144
	264	3	152	291	1.34	0.16	32.3	263	17.5	57.9	1140	2.33	4404	3781
	264	4	173	292	1.21	0.11	35.7	291	19.7	51.7	1476	3.53	5594	5420
	264	4	187	293	1.17	0.15	21.1	261	22.2	86.2	1179	3.10	7178	3615
	264	5	196	294	0.61	0.19	23.4	270	26.4	83.3	1227	3.81	5700	3423
	264	5	213	296	0.99	0.13	22.9	290	31.9	115.0	1607	3.20	10039	3116
	264	6	237	297	1.51	0.11	21.0	224	28.3	56.3	1064	3.13	4759	2703
	264	6	240	298	1.72	0.20	22.1	206	30.0	58.8	770	3.91	6209	1992
	265	1	7	303	1.98	0.21	27.6	348	41.4	99.6	1419	4.34	6717	3576
	265	1	17	305	1.95	0.27	41.2	416	31.3	60.7	1438	3.63	6928	3826
	265	2	47	306	1.41	0.16	17.0	221	35.3	47.1	945	3.07	8503	1964
	265	2	52	307	1.43	0.30	18.7	260	28.1	63.2	890	3.81	7226	2405
	265	3	81	308	1.27	0.18	21.3	312	20.0	49.6	1342	3.69	6621	4008
	265	3	88	310	1.27	0.18	16.9	235	20.9	42.1	1092	2.46	6132	2261
	265	4	107	311	1.20	0.18	15.7	500	29.1	66.5	1208	3.75	7581	4047
	265	4	117	312	1.00	0.23	29.6	170	24.6	52.3	1102	2.11	7245	2146
	265	5	130	313	1.74	0.24	32.6	235	25.9	63.4	1054	3.32	6535	2770
	265	5	143	315	1.22	0.24	17.7	244	27.2	56.6	1111	2.03	5239	3144
	265	6	180	316	1.68	0.12	28.6	275	19.4	74.3	1160	2.89	6381	2405
	265	6	189	317	1.59	0.10	41.2	376	36.0	47.1	1447	3.35	6381	4047
	266	1	8	318	2.44	0.14	20.5	358	14.9	57.0	1044	2.08	5527	3672
	266	1	23	320	2.47	0.20	24.4	288	31.0	60.1	942	3.66	5124	3548
	266	2	25	321	0.85	0.14	18.9	265	32.0	64.4	910	3.56	4586	3388
	266	2	46	322	1.15	0.18	34.4	351	30.7	67.0	1352	2.74	5825	3394
	266	3	70	323	1.39	0.15	32.0	496	47.3	115.0	1332	3.41	9233	6879
	266	3	76	324	1.40	0.15	29.0	394	36.0	90.0	987	3.66	7984	4047
	266	4	95	326	1.07	0.36	54.5	645	43.4	130.4	1601	2.57	7677	6408
	266	4	98	325	1.21	0.31	44.6	472	36.5	159.2	1323	3.17	7716	4719
	266	5	114	327	1.54	0.18	41.9	253	21.9	61.6	1304	5.29	6055	3576
	266	5	121	329	1.85	0.15	37.6	426	26.6	97.7	1332	3.91	7399	5679
	266	6	131	330	1.70	0.24	30.8	288	27.6	82.4	1092	3.48	7610	4200
	266	6	142	331	1.50	0.17	44.3	323	33.2	70.3	1054	5.17	7332	3519
	267	1	9	332	2.17	0.18	40.3	295	22.0	62.6	1160	2.70	3511	4008
	267	1	25	337	2.19	0.19	33.8	373	37.5	90.0	751	4.65	5632	4047
	267	2	27	338	0.99	0.28	36.6	358	24.3	45.6	1294	1.93	4893	3394
	267	2	31	339	0.93	0.27	22.6	250	31.3	86.2	1121	3.84	6266	3269
	267	3	56	340	1.43	0.23	36.3	270	30.0	76.1	1083	3.01	6381	3644
	267	3	60	341	1.77	0.20	33.5	300	23.0	92.0	1086	3.25	5479	4383
	267	4	68	342	1.63	0.18	33.8	271	32.2	82.4	1188	3.87	4279	4604
	267	4	73	344	1.70	0.15	24.6	250	23.2	86.2	1083	3.63	4960	3797
	267	5	90	345	0.80	0.16	33.8	351	46.1	95.8	1179	3.04	7860	3144

INSTALL	PLOT	TREE	NUM	N	P	Zn	Mn	B	Fe	Mg	Cu	K	Ca
267	5	91	346	1.04	0.34	29.6	336	37.8	96.8	1169	2.79	6439	3893
267	6	112	347	1.10	0.19	38.4	363	21.7	83.3	1198	2.77	5632	4258
267	6	125	349	1.39	0.19	29.1	289	24.1	75.8	1585	3.25	6410	4325
268	1	4	350	1.21	0.24	43.0	301	19.4	57.3	1371	2.67	6160	3855
268	1	14	351	1.13	0.21	40.6	327	23.2	75.2	1217	2.21	5706	3423
268	2	50	352	1.22	0.28	43.7	194	29.1	72.8	1275	2.85	8810	2984
268	2	51	354	0.93	0.30	33.5	183	22.8	48.4	948	2.39	4682	3058
268	3	85	355	1.61	0.20	42.2	302	13.8	59.1	1188	2.42	6237	3797
268	3	99	377	2.18	0.22	28.2	267	28.9	39.1	945	3.78	4960	2540
268	4	109	356	1.89	0.22	35.9	307	26.6	51.4	1111	4.09	6007	3394
268	4	117	358	1.96	0.22	38.7	422	31.0	66.8	1380	4.77	6439	4872
268	5	131	359	1.51	0.21	0.0	163	28.1	44.6	1035	3.44	4989	2664
268	5	165	360	1.16	0.19	18.1	283	28.1	63.7	1352	2.54	9137	3029
268	6	210	361	1.21	0.30	25.5	312	35.6	47.4	1419	2.85	8823	4364
268	6	214	363	1.85	0.23	28.2	434	20.2	52.7	1764	3.48	8138	4383
269	1	23	364	1.23	0.16	20.2	304	18.9	48.0	936	3.10	6189	3887
269	1	27	365	0.84	0.16	19.1	203	18.8	31.1	1006	1.96	5296	2434
269	2	45	366	1.47	0.22	31.3	284	17.6	50.5	1111	3.35	4432	2664
269	2	59	371	1.49	0.19	24.0	288	25.3	49.0	1313	5.20	5748	3116
269	3	76	372	1.74	0.15	19.0	162	18.1	32.6	1073	2.67	5344	3087
269	3	86	373	1.55	0.19	17.6	207	13.7	44.1	812	2.79	5200	2876
269	4	106	374	1.22	0.18	21.6	229	20.2	35.4	893	2.79	5047	3029
269	4	117	375	1.21	0.14	23.5	288	24.3	50.5	773	3.84	6410	3951
269	5	153	379	1.53	0.15	25.8	269	23.2	28.9	1025	2.79	4279	3540
269	5	154	380	1.63	0.15	31.0	244	18.5	36.0	1246	2.67	5479	4588
269	6	172	382	1.11	0.19	32.6	301	22.2	41.0	1323	2.74	4960	4536
269	6	176	383	1.85	0.19	23.6	270	26.7	40.6	1188	3.10	5200	3826
270	1	11	384	1.78	0.18	30.1	245	11.5	60.4	760	2.39	4384	2866
270	1	13	385	1.46	0.23	45.3	434	12.0	51.4	1054	2.18	6218	3058
270	2	23	387	1.17	0.19	19.5	484	31.0	52.3	1160	2.82	5316	2424
270	2	41	388	1.33	0.23	28.1	447	17.1	49.2	889	4.24	7610	2320
270	3	61	389	1.20	0.18	20.6	453	22.7	65.7	849	3.41	6218	3183
270	3	68	390	1.17	0.22	29.4	490	18.6	56.6	1121	2.77	7120	4604
270	4	85	392	1.09	0.27	40.0	833	25.2	75.4	1515	3.60	6717	4383
270	4	90	393	1.00	0.21	17.0	429	19.7	50.2	849	2.90	5949	2376
270	5	100	394	1.27	0.21	42.8	645	29.7	55.1	1064	4.68	6640	3970
270	5	110	395	1.18	0.21	28.1	645	18.1	49.8	1255	3.04	-41	4104
270	6	126	397	1.56	0.21	35.7	744	15.4	51.2	1793	2.89	5575	5957
270	6	145	398	1.49	0.13	34.1	632	17.1	76.7	1246	2.27	5700	4229
271	1	14	399	2.31	0.22	43.0	580	14.5	64.4	1342	3.66	6826	3740
271	1	23	400	1.68	0.16	49.9	416	14.6	42.8	1601	3.72	5632	4133
271	2	37	405	1.39	0.19	39.7	506	22.3	53.3	1275	2.57	5143	3855
271	2	61	406	1.73	0.16	39.1	300	20.5	54.2	883	2.92	4768	2616
271	3	80	407	0.99	0.22	36.6	292	22.2	30.4	1160	3.10	5047	4229
271	3	110	408	1.03	0.23	36.9	376	28.2	37.8	704	2.54	5421	3893
271	4	134	409	2.95	0.25	35.4	330	12.3	42.8	958	1.87	4432	3701
271	4	142	410	1.77	0.18	30.5	251	18.3	40.7	735	3.07	5316	3144
271	5	162	412	1.37	0.20	37.2	314	16.3	33.5	1304	3.20	5700	4104
271	5	185	413	1.37	0.18	35.4	272	23.4	30.8	954	2.64	6189	3212
271	6	245	414	0.94	0.15	20.0	333	17.1	52.3	776	2.08	5296	3644
271	6	247	415	0.88	0.15	23.6	290	20.4	41.0	643	3.23	5825	4604
272	1	34	417	0.73	0.14	19.3	200	17.1	28.6	702	1.96	5220	5189
272	1	39	418	0.90	0.20	21.8	296	19.6	45.6	738	2.67	4615	2808
272	2	70	419	1.26	0.13	27.8	394	19.2	32.0	1140	2.57	4250	4258
272	2	79	420	1.33	0.19	35.4	419	26.8	40.3	996	3.10	4586	4047

INSTALL	PLOT	TREE	NUM	N	P	Zn	Mn	B	Fe	Mg	Cu	K	Ca
	272	3	143	425	2.20	0.14	22.6	342	17.0	33.9	1361	2.30	4029	4500
	272	3	147	426	2.21	0.20	30.1	314	17.5	40.0	1003	2.52	4050	3900
	272	4	205	427	2.04	0.15	32.6	202	20.8	65.0	1179	3.28	4432	3029
	272	4	207	428	2.27	0.30	30.8	351	10.8	41.0	1160	2.14	4557	3922
	272	5	252	429	1.21	0.16	24.3	263	11.7	46.8	1342	3.32	4183	4997
	272	5	266	430	1.39	0.16	25.8	209	23.0	34.2	859	2.42	4029	2530
	272	6	335	432	1.13	0.27	30.8	345	18.2	46.5	1150	2.74	4557	4229
	272	6	340	433	0.75	0.18	27.2	317	14.7	40.6	1275	4.24	4093	4184
	273	1	4	434	1.43	0.21	28.6	302	20.3	69.3	1300	3.72	4529	3760
	273	1	16	435	1.26	0.21	17.7	185	20.8	44.9	1044	2.77	4093	3336
	273	2	47	437	1.09	0.19	18.3	200	19.5	91.0	1179	3.50	5978	3212
	273	2	61	493	1.00	0.20	29.1	340	26.3	71.8	1131	3.13	6460	3240
	273	3	91	439	1.99	0.26	22.9	330	17.4	72.1	1361	3.25	5240	3029
	273	3	132	438	1.62	0.19	21.5	314	16.2	56.1	1217	3.04	5949	2914
	273	4	146	440	1.42	0.17	19.1	209	18.8	50.6	1300	2.49	4711	3615
	273	4	175	441	1.16	0.16	21.8	249	25.2	63.2	1784	2.61	5853	4000
	273	5	207	442	1.20	0.21	21.2	287	27.8	71.8	1140	2.42	5604	2626
	273	5	210	443	0.91	0.27	20.7	253	28.5	81.4	1764	2.57	5172	4287
	273	6	224	445	2.60	0.27	29.7	225	21.9	51.2	1352	3.99	6141	3144
	273	6	237	446	1.89	0.39	37.2	351	24.6	65.3	1784	2.85	6209	4911
	274	1	3	447	1.04	0.26	20.8	290	30.0	79.8	996	2.74	4490	4229
	274	1	5	448	1.44	0.18	26.2	302	23.3	77.9	987	3.70	4557	3951
	274	2	15	450	0.97	0.14	23.6	363	31.9	75.2	1438	2.49	4922	4250
	274	2	25	451	0.97	0.23	31.6	533	31.3	82.4	1870	3.75	5720	5304
	274	3	29	452	1.75	0.23	27.8	336	30.4	103.5	1505	5.23	4529	2616
	274	3	38	494	2.24	0.24	30.5	320	26.5	100.6	773	2.85	4029	2991
	274	4	48	495	1.27	0.25	27.4	271	32.5	85.2	1467	2.79	7120	3826
	274	4	57	496	1.02	0.23	23.1	192	25.3	72.1	773	2.67	7610	2223
	274	5	63	498	2.56	0.23	50.5	339	48.9	185.4	1886	4.24	4557	3576
	274	5	64	499	1.54	0.16	40.0	330	25.8	62.6	1179	3.53	4864	2888
	274	6	86	500	0.77	0.21	26.3	241	24.6	87.2	1255	1.99	6593	2684
	274	6	95	501	0.99	0.29	22.0	228	30.7	165.9	1736	4.09	5623	2837
	275	1	21	503	1.65	0.21	34.1	407	21.2	81.4	1255	2.95	5085	3212
	275	1	25	504	1.47	0.26	35.1	419	20.5	99.6	1035	1.96	4922	3365
	275	2	46	505	1.27	0.21	39.4	348	19.1	72.8	1086	3.50	4836	4200
	275	2	55	506	1.47	0.19	33.5	530	23.8	84.3	1160	3.25	5575	5247
	275	3	69	508	0.96	0.41	21.9	327	24.8	95.8	1505	2.57	5200	3423
	275	3	74	509	0.87	0.27	53.2	530	33.5	100.3	1505	3.78	7053	4690
	275	4	101	510	1.06	0.16	32.3	413	20.3	116.9	933	3.01	5575	3893
	275	4	127	511	1.00	0.24	54.5	579	35.0	89.1	1073	3.99	5681	4258
	275	5	151	516	2.54	0.27	33.8	398	16.1	54.8	996	1.87	4096	3701
	275	5	156	517	1.92	0.24	40.3	432	20.4	77.9	1384	3.13	4768	3269
	275	6	189	518	0.67	0.22	34.4	330	30.0	103.5	1140	3.32	5949	3461
	275	6	192	519	0.89	0.23	31.3	407	27.0	85.2	1035	2.54	5325	2895
	276	1	1	520	1.44	0.20	33.5	257	29.1	77.1	1678	4.24	6132	2693
	276	1	10	521	2.12	0.19	20.6	284	14.1	64.7	1179	3.23	4653	3394
	276	2	33	523	1.36	0.15	23.2	230	14.0	53.9	1332	2.77	4557	3461
	276	2	41	524	1.65	0.20	41.2	300	19.4	71.8	1495	3.94	5010	3922
	276	3	63	525	1.33	0.21	35.1	256	22.2	60.1	1111	4.27	5959	2626
	276	3	76	526	1.07	0.19	16.9	260	21.8	62.6	1054	2.77	5479	1714
	276	4	91	529	1.29	0.22	20.5	190	21.4	60.7	1200	2.36	6871	3144
	276	4	96	520	1.26	0.29	33.5	245	20.0	92.9	1275	4.09	6593	2684
	276	5	102	530	1.47	0.25	32.3	260	17.1	76.7	1217	3.07	4490	2453
	276	5	100	454	1.42	0.29	32.6	249	24.7	107.3	1428	7.42	5010	3029
	276	6	123	455	1.86	0.14	24.3	154	20.1	89.1	1092	3.40	4999	2165

INSTALL	PLOT	TREE	NUM	N	P	Zn	Mn	B	Fe	Mg	Cu	K	Ca
276	6	139	456	1.73	0.22	21.3	216	24.8	75.2	1342	4.24	4557	3212
277	1	6	457	1.31	0.22	36.6	292	29.7	193.7	1611	4.15	4999	3922
277	1	18	459	1.65	0.19	49.3	308	32.8	160.1	1697	5.20	4922	4565
277	2	31	460	2.62	0.32	55.7	266	23.9	167.8	1476	4.93	5479	2530
277	2	40	461	1.48	0.20	35.1	247	27.8	73.0	1025	4.27	5143	4280
277	3	59	462	0.96	0.25	38.4	256	23.9	77.9	1179	3.60	5479	3240
277	3	69	464	1.23	0.25	33.3	330	25.4	87.2	1447	4.15	5632	5276
277	4	89	465	0.92	0.29	32.0	336	19.5	73.8	1131	2.77	4893	3423
277	4	98	466	1.12	0.16	31.3	358	18.0	95.8	1371	2.85	4682	3740
277	5	113	467	1.83	0.22	36.9	304	19.5	68.7	1160	3.17	6928	3029
277	5	115	469	2.52	0.27	57.5	264	22.0	96.0	1419	2.74	6410	2972
277	6	137	532	1.18	0.22	35.4	266	17.8	104.4	868	3.84	6132	2348
277	6	140	470	1.47	0.22	32.6	305	19.2	82.4	1131	2.92	5268	3116
278	1	8	471	1.72	0.21	30.1	333	21.9	34.5	1467	2.54	4893	3087
278	1	13	473	1.90	0.23	46.8	416	16.7	49.6	1371	3.25	5930	3922
278	2	20	474	1.08	0.18	26.9	333	18.0	45.3	1323	2.49	5114	3336
278	2	27	475	1.01	0.27	39.1	370	26.1	66.0	1620	2.67	5810	3768
278	3	36	476	1.15	0.24	30.8	289	22.3	74.3	1611	3.04	5853	3116
278	3	49	478	1.33	0.25	38.1	391	16.3	44.9	1246	3.35	6535	4000
278	4	55	479	0.94	0.18	16.0	222	21.5	41.6	1054	2.46	6132	2328
278	4	68	480	0.85	0.17	15.3	171	20.3	42.5	1111	2.11	5325	2984
278	5	77	481	1.18	0.15	23.4	320	22.3	58.6	1044	2.27	4615	2367
278	5	84	483	1.25	0.17	17.0	260	15.8	47.1	824	2.92	5450	3116
278	6	92	484	1.54	0.22	33.5	274	23.5	58.6	1073	2.85	5671	3183
278	6	107	485	2.13	0.20	30.5	391	22.5	41.8	1217	4.06	5296	4940
279	1	2	486	0.98	0.13	44.6	355	27.4	49.0	1486	2.33	5296	4479
279	1	17	488	1.85	0.28	44.0	380	26.2	46.5	1371	3.10	7303	4229
279	2	2	489	1.14	0.14	26.9	330	26.2	44.3	880	2.95	6064	2828
279	2	22	571	1.33	0.20	36.3	366	18.6	86.2	1044	4.58	6593	4287
279	3	35	572	1.65	0.18	24.5	303	14.4	49.2	926	3.44	6314	3980
279	3	48	573	1.48	0.16	33.5	306	20.3	47.7	1198	3.44	6717	4133
279	4	66	576	2.01	0.15	42.8	490	22.2	55.8	1764	2.82	6621	4815
279	4	68	574	0.95	0.22	33.5	330	17.6	58.3	1480	3.87	6980	2789
279	5	97	577	1.20	0.20	25.2	429	16.0	61.9	1313	3.78	6064	5468
279	5	103	578	1.16	0.20	39.7	437	26.9	57.3	1342	4.70	5988	5861
279	6	107	579	1.53	0.15	35.1	339	16.0	44.9	1198	5.80	6564	4104
279	6	119	581	1.60	0.19	24.2	291	13.2	58.8	1304	3.04	6996	4076
280	1	7	582	1.02	0.21	24.2	159	17.1	58.3	968	3.60	6314	4047
280	1	11	583	1.08	0.18	22.1	203	24.3	58.8	1544	3.78	5671	5429
280	2	23	584	1.04	0.26	37.2	254	12.3	38.8	1140	4.15	6132	2885
280	2	29	586	1.54	0.05	28.2	210	16.7	35.7	1288	3.69	6612	3212
280	3	40	587	2.21	0.29	43.7	198	13.2	42.5	1073	3.94	7053	2933
280	3	44	588	2.31	0.33	62.8	339	17.3	72.8	1323	4.52	6813	3797
280	4	63	589	1.47	0.13	50.2	528	23.6	55.8	1582	4.98	4893	4280
280	4	68	591	1.38	0.16	39.4	478	23.6	44.3	1035	4.15	5949	3212
280	5	87	596	2.04	0.24	40.3	391	12.4	48.7	1419	2.52	7207	3394
280	5	111	592	2.07	0.24	50.0	348	32.8	74.3	1505	3.32	5172	4479
280	6	119	597	1.08	0.26	40.3	503	15.6	61.6	1736	4.52	6410	4383
280	6	140	598	1.00	0.16	25.6	493	21.8	47.4	898	3.20	5421	4412
281	1	33	601	1.09	0.25	25.0	348	13.0	57.9	1352	3.32	5005	3144
281	1	46	599	1.00	0.15	15.1	312	17.3	60.7	930	3.32	5853	4133
281	2	59	602	1.30	0.22	19.5	140	23.2	87.2	1150	2.85	5450	3797
281	2	66	603	1.35	0.21	18.7	185	22.9	77.4	1275	3.10	4490	3240
281	3	96	604	1.53	0.18	20.0	114	30.0	83.3	862	3.25	5802	2242
281	3	105	606	1.62	0.18	15.3	189	37.5	75.4	911	2.46	4279	2684

INSTALL	PLOT	TREE	NUM	N	P	Zn	Mn	B	Fe	Mg	Cu	K	Ca
	281	4	133	607	1.35	0.16	17.0	125	19.9	60.4	900	2.92	3876	1666
	281	4	155	608	1.33	0.19	19.3	160	19.1	63.4	800	3.23	5450	3336
	281	5	176	609	1.35	0.16	21.3	210	21.6	89.1	1217	3.07	4922	3922
	281	5	221	533	1.46	0.16	16.0	155	18.2	48.7	852	3.66	3386	2530
	281	6	280	534	0.90	0.27	14.4	186	21.4	74.9	951	2.92	5325	2789
	281	6	285	535	0.98	0.12	11.4	218	20.6	92.0	1064	1.96	5546	2405
	282	1	11	537	2.19	0.22	47.4	342	24.7	62.2	1736	2.82	5684	3308
	282	1	19	538	2.11	0.31	35.1	413	34.0	58.8	1563	3.48	5239	3548
	282	2	29	539	1.19	0.30	23.1	345	27.3	56.1	1342	2.74	5575	3461
	282	2	35	540	1.24	0.22	30.1	323	27.5	65.9	1227	2.95	6362	3519
	282	3	74	542	0.93	0.28	34.4	300	26.9	89.1	1217	2.30	5114	3519
	282	3	87	543	0.92	0.30	29.0	434	19.0	75.8	1304	2.36	5421	4383
	282	4	90	544	1.56	0.22	30.5	320	18.6	65.7	1438	2.49	5354	2511
	282	4	105	545	1.59	0.29	50.2	394	21.5	103.5	1361	3.53	6775	3826
	282	5	134	546	0.98	0.25	33.5	437	31.0	70.8	1630	2.77	4807	4536
	282	5	139	547	0.93	0.20	31.3	275	34.0	53.3	1275	2.11	5143	3797
	282	6	175	548	2.16	0.21	20.6	355	24.1	68.1	1284	2.36	6266	3797
	282	6	180	549	2.22	0.26	35.1	465	29.4	67.2	1140	2.74	4922	3826
	283	1	16	551	1.02	0.16	25.1	330	21.7	50.2	1182	3.69	4768	3087
	283	1	24	552	1.06	0.21	29.9	286	21.6	32.3	1160	2.89	5280	2895
	283	2	40	553	2.16	0.21	34.0	398	24.2	48.4	1131	2.82	4836	3548
	283	2	51	554	1.89	0.25	46.0	426	33.8	63.4	1553	3.75	5239	4172
	283	3	63	556	1.50	0.15	26.2	314	28.3	76.7	1361	3.56	5280	4325
	283	3	81	557	1.66	0.22	30.1	260	18.5	39.4	1582	3.60	5720	3855
	283	4	93	558	1.17	0.25	31.0	300	20.8	51.4	1217	2.61	6036	3855
	283	4	94	559	1.10	0.22	33.3	429	17.1	47.7	1428	2.89	6314	4872
	283	5	125	564	3.00	0.25	36.9	282	27.8	36.3	760	3.20	5949	3615
	283	5	134	565	2.54	0.20	26.2	336	21.3	50.5	1255	2.54	4250	3183
	283	6	162	566	1.40	0.16	26.3	379	18.6	42.1	996	2.92	5632	3029
	283	6	163	567	1.43	0.16	32.3	394	24.3	61.3	1342	3.30	5970	4604
	285	1	7	568	1.38	0.25	36.3	226	14.8	36.7	977	3.56	6564	2943
	285	1	13	569	1.05	0.21	23.3	265	16.3	47.7	977	2.79	6087	2213
	285	2	26	611	1.60	0.17	36.3	196	23.5	46.5	1160	3.20	4768	3308
	285	2	29	612	1.37	0.19	25.0	165	19.3	43.1	893	2.82	4653	1349
	285	3	39	613	1.72	0.24	33.5	213	16.5	39.7	1524	3.60	4682	4354
	285	3	51	614	1.91	0.26	33.0	271	19.7	40.6	1544	3.07	6900	3826
	285	4	53	617	1.45	0.15	35.9	270	26.8	52.0	1892	3.99	4615	4786
	285	4	57	618	1.69	0.21	32.6	266	17.1	38.5	1438	2.54	4529	3701
	285	5	71	619	1.10	0.14	16.5	183	13.9	36.3	948	3.07	5085	1964
	285	5	72	621	1.30	0.10	25.9	222	14.3	31.7	1006	2.30	4375	4325
	285	6	84	622	1.46	0.15	31.0	317	10.3	27.4	1476	2.27	4300	4440
	285	6	87	623	1.46	0.10	27.4	270	16.3	43.7	1294	2.74	4461	3615
	286	1	5	624	1.38	0.14	42.5	720	34.0	115.0	1265	3.17	5172	4844
	286	1	19	626	1.30	0.12	30.7	390	24.5	85.2	1169	2.98	4740	3701
	286	2	26	627	1.22	0.33	39.4	524	19.9	91.0	1467	2.79	4682	4632
	286	2	36	628	1.24	0.28	28.5	462	20.5	75.8	1190	2.70	4864	2712
	286	3	52	629	1.90	0.23	29.8	577	14.5	65.7	1284	4.55	4836	4719
	286	3	67	631	1.71	0.27	40.6	500	14.9	90.7	1140	4.19	5239	3269
	286	4	70	632	1.10	0.23	50.2	669	39.3	136.1	1447	3.30	4653	4565
	286	4	83	633	1.04	0.16	38.7	546	22.6	92.0	1873	2.64	4653	3087
	286	5	92	634	1.87	0.22	58.8	500	33.5	91.0	1227	5.44	5354	4383
	286	5	94	636	1.20	0.20	37.2	401	21.8	87.2	751	3.20	5393	2367
	286	6	118	637	2.86	0.34	74.2	818	27.1	92.0	2891	2.64	4432	5496
	286	6	133	638	1.54	0.15	34.1	586	11.0	74.6	1284	2.36	4836	3855
	287	1	15	639	1.04	0.30	41.5	457	30.4	79.8	1198	3.20	7853	4172

INSTALL	PLOT	TREE	NUM	N	P	Zn	Mn	B	Fe	Mg	Cu	K	Ca
287	1	41	644	1.83	0.21	33.5	432	31.0	51.2	1179	2.92	5671	3394
287	2	47	645	2.60	0.33	52.9	589	23.1	51.2	1352	3.20	4850	4229
287	2	65	646	2.44	0.24	43.7	419	34.7	49.2	1200	2.42	4615	3300
287	3	113	647	1.54	0.21	50.2	457	33.2	51.7	1553	3.25	5393	4604
287	3	122	648	1.63	0.25	56.4	582	35.6	41.6	1764	2.77	5604	4258
287	4	166	649	1.14	0.26	29.9	444	34.0	79.8	1169	2.82	4836	2770
287	4	169	651	1.06	0.12	28.1	383	33.5	43.1	1217	2.95	5239	2674
287	5	188	652	1.27	0.16	35.7	539	27.5	76.7	1035	2.67	5671	3026
287	5	194	653	1.44	0.23	39.4	314	20.9	61.9	915	3.53	5354	3887
287	6	250	654	2.56	0.27	37.9	515	30.0	57.3	1035	3.32	4586	3336
287	6	253	656	2.87	0.23	26.2	490	24.3	36.0	702	3.01	4586	4000
288	1	2	657	1.24	0.22	22.7	192	18.7	75.8	1035	3.63	5882	2424
288	1	12	658	1.05	0.26	31.0	307	21.3	75.2	1179	2.74	4740	5957
288	2	40	660	1.32	0.18	28.2	289	19.2	100.3	918	3.07	5393	3980
288	2	50	665	1.50	0.26	27.9	254	20.3	51.2	1092	5.11	6160	2559
288	3	63	666	2.00	0.20	38.7	358	26.8	88.1	1486	3.53	5853	4690
288	3	67	667	1.94	0.22	36.3	221	21.7	60.4	1294	4.15	6564	2732
288	4	100	668	1.13	0.22	23.7	250	24.6	70.8	1073	2.49	5354	3116
288	4	117	669	1.27	0.37	42.2	274	37.0	94.8	1255	6.31	5623	3103
288	5	133	670	2.02	0.24	35.7	294	21.1	61.9	1140	2.64	4922	3050
288	5	143	672	2.68	0.22	47.1	290	31.3	66.2	1553	3.50	4490	3797
288	6	164	673	1.38	0.25	29.7	280	25.7	52.7	1457	3.97	5546	5736
288	6	165	674	1.62	0.22	38.7	351	17.9	84.3	1255	4.27	4529	3336
289	1	7	675	1.26	0.24	59.0	771	31.3	64.7	1670	3.38	5911	7311
289	1	9	677	1.32	0.39	52.1	394	27.0	64.1	1707	3.81	5239	5775
289	2	54	678	1.70	0.38	40.6	273	20.3	62.6	1284	3.25	6496	4072
289	2	59	679	1.41	0.37	64.4	358	21.3	59.1	1755	3.30	5853	6332
289	3	121	680	1.65	0.35	79.5	558	18.2	60.1	1832	5.39	6650	6015
289	3	137	682	1.64	0.22	53.9	506	13.4	64.7	1342	4.86	6967	4440
289	4	150	683	1.75	0.33	70.9	490	23.3	51.7	2187	5.54	7170	7202
289	4	171	684	2.20	0.24	76.1	441	27.2	67.8	1956	5.29	7360	5189
289	5	176	685	1.69	0.22	51.4	281	35.6	66.5	1467	3.63	6064	3922
289	5	198	687	1.37	0.26	41.5	291	24.6	72.8	1534	2.98	6007	4229
289	6	233	688	1.39	0.53	50.8	227	20.9	81.0	1920	5.33	8397	6946
289	6	258	689	1.17	0.45	39.4	258	21.3	81.4	1313	3.63	7917	4757
290	1	3	659	1.69	0.21	27.1	218	15.5	42.1	1457	1.75	4029	2693
290	1	30	691	1.63	0.17	52.1	373	22.1	61.3	1515	3.44	5786	4690
290	2	45	692	0.98	0.15	34.4	330	18.4	57.3	1016	3.48	4922	4536
290	2	66	693	1.06	0.19	33.5	401	20.6	50.5	1489	4.03	5834	4325
290	3	119	694	1.41	0.19	37.6	419	20.0	73.3	1361	4.62	5421	4258
290	3	135	696	1.32	0.14	19.6	291	11.0	47.1	852	2.54	5143	2837
290	4	146	697	1.02	0.14	44.3	632	23.7	50.8	1361	3.32	5325	4354
290	4	163	698	0.93	0.19	33.5	484	21.3	58.2	1073	3.01	4893	4847
290	5	212	699	1.17	0.15	48.6	379	26.1	58.6	1054	4.49	5354	3951
290	5	213	701	1.36	0.21	26.8	521	15.9	45.3	1198	3.70	4602	4325
290	6	237	702	1.63	0.14	30.1	650	12.7	41.6	1102	3.84	5114	4200
290	6	269	703	1.39	0.17	22.5	620	10.4	57.6	1342	3.66	6890	5372

Change in one year old needle weights for the 1982 installations.

	Needle Weight (g/100 needles)			Predicted Response	
Inst. #	Control	200 lbs/ac	400 lbs/ac	200 lbs/ac	400 lbs/ac
246	.8189	.9085	1.0316	++	++
247	.6200	.9141	.8925	++++	++
248	.5766	.7152	.5911	++	--
249	.6551	.7452	.7806	++	++
250	.6454	.7166	.9082	++	+++
251	.4908	.6024	.5955	++	++
252	.4688	.4737	.5518	--	++
253	.6146	.6764	.6716	+	+
254	.6016	.6850	.7522	+	+++
255	.6931	.8242	.6948	+++	--
256	.5680	.8397	.7860	++++	++++
257	.7480	.8112	.8930	++	++
258	.5601	.7840	.5895	+++	--
259	.6326	.7664	.9545	+++	++++
260	.6721	.8574	.7753	++	+
261	.6142	.8639	.8587	+++	+++
262	.5339	.7096	.6069	++	++
263	.6024	.7216	.7304	++	++
264	.5924	.6596	.6732	--	+
265	.6636	.8967	.7540	++++	+
266	.5010	.7384	.7004	++++	++
267	.4592	.6378	.7747	+++	+++
268	.7100	.7882	.8234	--	++
269	.5156	.6022	.6482	+	++
270	.5677	.6888	.6649	+	--
271	.5832	.7730	.7158	++	+++
272	.6616	.6727	.8532	--	+
273	.6972	.7057	.8992	--	+++
274	.5242	.6948	.9044	++++	+++
275	.4784	.6296	.6662	+++	++++
276	.7664	.7366	.7092	--	--
277	.5977	.7487	.7523	+++	++++
278	.6250	.7453	.7602	+++	++
279	.6424	.7185	.6072	+	--
280	.6971	.7463	.7988	++	++

	Needle Weight (g/100 needles)			Predicted Response	
Inst. #	Control	200 lbs/ac	400 lbs/ac	200 lbs/ac	400 lbs/ac
281	.5403	.7302	.6891	++++	+
282	.5723	.9028	.8856	++	+++
283	.5820	.7462	.7162	++	++
284	.6773	.5526	.5508	--	--
285	.5048	.5536	.6464	+	++
286	.6500	.7339	.8041	+	+++
287	.5526	.6391	.7110	+	++
288	.8126	.9054	.8404	+	--
289	.6492	.9590	.8243	+++	+
290	.5530	.6807	.7556	+	+++

Soil nutrient data for the 1981 and 1982 installations.

DOUGLAS-FIR

FERTILIZATION STUDY

SOIL ANALYSIS

INST	PLOT	N	P	ORG-C	C/N	MIN-N	COARSE FRAG.	CORR. MIN-N
		---------- %	----------			ug/g	%	ug/g
201	1	0.163	0.061	1.17	7.1	23	20.2	19
201	2	0.136	0.072	1.32	9.7	23	15.0	19
201	3	0.155	0.050	1.44	9.3	20	16.1	17
201	4	0.174	0.085	1.29	7.4	19	14.8	16
201	5	0.154	0.069	1.24	8.1	18	23.5	14
201	6	0.194	0.078	1.62	8.4	36	14.4	31
202	1	0.186	0.026	1.11	6.0	25	21.1	19
202	2	0.151	0.046	1.42	9.4	15	30.3	11
202	3	0.125	0.036	1.14	9.1	22	33.0	15
202	4	0.125	0.028	0.97	7.7	17	31.8	12
202	5	0.109	0.043	1.20	11.0	16	31.5	11
202	6	0.163	0.036	1.20	7.4	27	38.7	17
203	1	0.152	0.085	1.64	10.8	20	16.0	17
203	2	0.165	0.093	1.18	7.2	21	9.3	19
203	3	0.064	0.112	1.47	23.0	21	13.2	18
203	4	0.198	0.080	1.35	6.8	22	10.3	20
203	5	0.121	0.058	0.97	8.0	16	8.3	15
203	6	0.069	0.064	1.14	16.6	15	10.1	14
204	1	0.178	0.087	1.69	9.5	26	11.7	23
204	2	0.236	0.047	1.64	7.0	31	7.2	29
204	3	0.241	0.052	1.56	6.5	34	8.7	31
204	4	0.234	0.103	1.40	6.0	29	6.7	27
204	5	0.274	0.103	1.67	6.1	27	6.8	25
204	6	0.317	0.082	1.84	5.8	33	8.4	31
205	1	0.226	0.102	1.84	8.2	32	8.3	29
205	2	0.304	0.057	1.73	5.7	38	7.4	35
205	3	0.344	0.037	1.59	4.6	31	7.2	29
205	4	0.343	0.072	1.69	4.9	35	8.7	32
205	5	0.363	0.108	2.63	7.3	33	6.0	31
205	6	0.307	0.107	1.76	5.7	34	0.0	34
206	1	0.251	0.068	1.18	4.7	20	20.1	16
206	2	0.245	0.045	1.15	4.7	21	16.3	17
206	3	0.263	0.049	1.01	3.9	21	17.3	17
206	4	0.275	0.062	1.16	4.2	23	8.2	21
206	5	0.251	0.075	1.26	5.0	25	12.6	22
206	6	0.288	0.074	1.28	4.4	55	15.6	46
207	1	0.336	0.064	1.63	4.8	35	7.8	32
207	2	0.335	0.083	1.67	5.0	44	28.1	32
207	3	0.291	0.071	2.70	9.3	37	10.7	33
207	4	0.318	0.092	2.36	7.4	51	29.2	36
207	5	0.386	0.069	2.63	6.8	49	15.8	41
207	6	0.235	0.057	1.40	6.0	25	10.9	22

INST	PLOT	N	P	ORG-C	C/N	MIN-N	C.F.	COR. MIN
208	1	0.168	0.038	2.05	12.2	77	0.0	66
208	2	0.138	0.043	2.29	16.6	72	13.2	63
208	3	0.166	0.050	2.32	14.0	75	15.2	64
208	4	0.244	0.036	1.82	7.5	59	19.5	48
208	5	0.127	0.036	1.49	11.7	35	18.6	29
208	6	0.096	0.028	1.27	13.2	29	8.9	27
209	1	0.182	0.172	1.56	8.6	27	10.8	24
209	2	0.214	0.164	1.33	6.2	30	20.7	24
209	3	0.124	0.155	1.53	12.3	27	23.0	21
209	4	0.137	0.130	1.28	9.3	28	18.0	23
209	5	0.228	0.231	1.34	5.9	36	21.7	28
209	6	0.178	0.322	1.37	7.7	32	13.9	28
210	1	0.173	0.183	2.54	14.7	26	12.6	23
210	2	0.489	0.184	2.90	5.9	40	37.8	25
210	3	0.498	0.197	3.21	6.4	38	24.7	29
210	4	0.447	0.258	2.55	5.7	29	19.4	23
210	5	0.430	0.225	2.60	6.1	35	24.7	27
210	6	0.337	0.217	2.10	6.2	36	15.6	30
211	1	0.257	0.093	1.48	5.8	31	17.2	25
211	2	0.233	0.106	1.51	6.5	33	12.7	29
211	3	0.272	0.090	1.70	6.2	34	13.9	29
211	4	0.214	0.099	1.39	6.5	24	9.8	21
211	5	0.289	0.077	1.60	5.5	30	11.8	26
211	6	0.302	0.097	1.62	5.4	32	9.6	29
212	1	0.317	0.057	2.63	8.3	51	26.0	38
212	2	0.315	0.053	2.50	7.9	52	33.0	35
212	3	0.250	0.054	3.10	12.4	62	29.4	44
212	4	0.299	0.054	2.36	7.9	51	33.8	34
212	5	0.318	0.059	2.21	7.0	56	25.7	41
212	6	0.351	0.054	1.97	5.6	61	27.3	44
213	1	0.102	0.149	1.46	14.3	29	30.4	20
213	2	0.187	0.133	1.48	7.9	19	7.5	17
213	3	0.128	0.164	1.39	10.9	20	9.8	18
213	4	0.119	0.153	1.51	12.7	26	7.4	24
213	5	0.115	0.143	1.48	12.9	21	10.9	19
213	6	0.177	0.168	1.42	8.0	18	7.3	17
214	1	0.189	0.151	1.57	8.3	47	25.5	35
214	2	0.199	0.152	1.95	9.8	51	23.6	39
214	3	0.230	0.208	1.55	6.7	28	18.3	23
214	4	0.204	0.192	1.45	7.1	48	18.7	39
214	5	0.190	0.143	1.86	9.8	54	19.6	43
214	6	0.232	0.194	1.55	6.7	48	21.8	37
215	1	0.256	0.095	1.58	6.2	55	36.3	35
215	2	0.283	0.095	2.28	8.1	64	50.4	32
215	3	0.206	0.094	1.19	5.8	45	39.4	27
215	4	0.217	0.082	1.37	6.3	56	34.9	36
215	5	0.227	0.079	1.17	5.1	42	32.3	28
215	6	0.231	0.096	1.49	6.5	54	24.0	41
216	1	0.299	0.103	2.53	8.4	48	22.4	38
216	2	0.343	0.098	2.54	7.4	49	26.4	36
216	3	0.181	0.049	1.35	7.5	34	20.5	27
216	4	0.181	0.059	1.00	5.6	34	17.3	28
216	5	0.224	0.090	1.49	6.7	40	22.2	32
216	6	0.314	0.090	1.68	5.3	38	27.2	28

INST	PLOT	N	P	ORG-C	C/N	MIN-N	C.F.	COR. MIN
217	1	0.237	0.158	1.71	7.2	43	18.9	35
217	2	0.252	0.154	1.69	6.7	42	18.4	34
217	3	0.228	0.108	1.46	6.4	47	14.1	41
217	4	0.221	0.109	1.46	6.6	43	13.7	37
217	5	0.172	0.139	1.18	6.9	35	15.5	30
217	6	0.169	0.155	1.40	8.3	40	10.4	36
218	1	0.213	0.106	1.55	7.3	51	26.8	37
218	2	0.194	0.083	1.27	6.5	47	12.0	42
218	3	0.140	0.046	1.03	7.4	31	13.1	27
218	4	0.133	0.047	0.98	7.4	30	12.2	26
218	5	0.155	0.072	1.35	8.7	32	22.0	25
218	6	0.141	0.049	1.18	8.4	27	13.5	23
219	1	0.388	0.118	2.53	6.5	41	11.8	36
219	2	0.459	0.101	2.87	6.2	65	12.6	57
219	3	0.355	0.097	2.10	5.9	48	8.9	44
219	4	0.450	0.073	3.14	7.0	73	24.1	56
219	5	0.378	0.131	3.10	8.2	67	0.0	67
219	6	0.108	0.115	2.95	27.4	52	13.4	45
220	1	0.143	0.051	1.09	7.6	27	15.5	23
220	2	0.132	0.079	0.97	7.3	31	20.0	25
220	3	0.143	0.040	1.13	7.9	16	15.9	14
220	4	0.141	0.061	1.11	7.9	26	30.7	18
220	5	0.236	0.056	0.83	3.5	21	20.7	16
220	6	0.163	0.066	1.42	8.7	30	34.1	20
221	1	0.318	0.122	1.97	6.2	53	18.2	43
221	2	0.420	0.144	2.36	5.6	60	13.8	52
221	3	0.405	0.206	4.29	10.6	59	19.2	48
221	4	0.341	0.100	1.66	4.9	57	11.3	51
221	5	0.332	0.120	1.66	5.0	60	15.1	51
221	6	0.360	0.125	2.44	6.8	46	14.6	39
222	1	0.294	0.088	1.05	3.6	27	0.0	27
222	2	0.228	0.120	1.35	5.9	48	21.6	38
222	3	0.215	0.124	1.34	6.2	27	13.1	24
222	4	0.177	0.116	1.02	5.7	23	14.2	20
222	5	0.313	0.120	1.58	5.1	45	25.9	34
222	6	0.390	0.099	2.75	7.0	88	24.0	67
223	1	0.291	0.105	2.09	7.2	40	7.6	37
223	2	0.146	0.109	1.43	9.8	22	9.2	20
223	3	0.192	0.099	1.46	7.6	37	11.6	33
223	4	0.152	0.079	1.37	9.0	31	19.1	25
223	5	0.163	0.065	1.39	8.6	27	13.3	24
223	6	0.313	0.116	2.45	7.8	55	26.9	41
224	1	0.172	0.110	1.89	11.0	32	14.6	27
224	2	0.238	0.121	3.01	12.7	36	13.9	31
224	3	0.250	0.090	2.55	10.2	34	17.4	28
224	4	0.326	0.085	2.85	8.7	40	12.6	35
224	5	0.245	0.067	2.05	8.3	30	11.1	27
224	6	0.273	0.093	2.60	9.6	39	15.0	33
225	1	0.135	0.067	1.31	9.7	19	12.7	17
225	2	0.201	0.070	1.45	7.2	21	14.3	18
225	3	0.172	0.068	1.50	8.7	21	12.0	18
225	4	0.184	0.079	1.34	7.3	15	13.6	13
225	5	0.174	0.072	1.26	7.2	20	11.8	18
225	6	0.166	0.067	1.68	10.1	23	14.0	19
226	1	0.146	0.033	1.06	7.3	16	6.9	15

INST	PLOT	N	P	ORG-C	C/N	MIN-N	C.F.	COR. MIN
226	2	0.164	0.034	1.07	6.5	22	6.3	20
226	3	0.139	0.036	1.04	7.5	18	6.2	17
226	4	0.120	0.038	1.04	8.7	15	4.3	14
226	5	0.139	0.034	1.08	7.8	14	5.0	13
226	6	0.146	0.031	1.16	7.9	18	4.7	17
227	1	0.132	0.019	1.42	10.8	27	15.2	23
227	2	0.195	0.021	1.64	8.4	22	14.6	19
227	3	0.178	0.016	1.46	8.2	28	16.2	24
227	4	0.114	0.030	1.41	12.4	24	17.1	20
227	5	0.100	0.024	1.18	11.8	27	16.5	22
227	6	0.145	0.014	1.36	9.3	20	13.9	17
228	1	0.114	0.018	1.35	11.8	45	24.4	34
228	2	0.123	0.034	1.48	12.1	36	8.9	33
228	3	0.127	0.038	1.29	10.1	32	8.8	29
228	4	0.149	0.020	1.23	8.3	20	9.6	18
228	5	0.102	0.020	0.92	9.0	19	7.8	18
228	6	0.117	0.022	1.20	10.3	21	8.2	20
229	1	0.161	0.037	1.54	9.5	55	17.4	45
229	2	0.201	0.047	1.57	7.8	46	18.5	38
229	3	0.172	0.040	1.41	8.2	39	24.7	29
229	4	0.149	0.051	1.51	10.2	52	19.6	42
229	5	0.198	0.065	1.76	8.9	48	27.8	35
229	6	0.140	0.050	1.40	10.0	32	18.5	26
230	1	0.076	0.034	0.97	12.8	13	18.6	10
230	2	0.055	0.040	0.56	10.1	10	7.9	10
230	3	0.089	0.049	1.13	12.8	21	7.9	19
230	4	0.075	0.051	1.04	14.0	28	16.4	23
230	5	0.137	0.092	1.41	10.3	34	14.2	30
230	6	0.115	0.067	1.11	9.7	32	33.5	21
231	1	0.627	0.132	5.66	9.0	88	36.7	56
231	2	0.368	0.055	3.30	9.0	88	44.5	49
231	3	0.373	0.054	3.79	10.2	107	41.3	63
231	4	0.483	0.086	5.27	10.9	93	33.6	62
231	5	0.255	0.020	3.63	14.2	86	32.1	58
231	6	0.218	0.104	2.52	11.6	40	36.9	25
232	1	0.338	0.045	3.51	10.4	85	18.0	70
232	2	0.305	0.046	2.72	8.9	78	35.5	51
232	3	0.238	0.029	2.23	9.4	61	32.1	41
232	4	0.215	0.065	2.88	13.4	63	34.5	41
232	5	0.238	0.038	2.43	10.2	62	43.9	35
232	6	0.323	0.098	2.42	7.5	67	25.4	50
233	1	0.260	0.021	2.83	10.9	68	39.1	41
233	2	0.199	0.018	2.96	14.9	56	31.7	38
233	3	0.315	0.022	2.83	9.0	74	30.6	51
233	4	0.307	0.029	2.73	8.9	65	35.1	42
233	5	0.285	0.021	2.36	8.3	53	31.5	36
233	6	0.222	0.020	2.28	10.3	47	31.0	33
234	1	0.247	0.024	1.88	7.6	68	34.5	45
234	2	0.201	0.019	1.48	7.4	63	40.0	38
234	3	0.218	0.019	1.82	8.4	65	41.9	38
234	4	0.261	0.023	2.16	8.3	49	55.2	22
234	5	0.506	0.049	2.96	5.9	76	62.5	29
234	6	0.436	0.028	1.87	4.3	87	49.2	44
235	1	0.450	0.080	2.42	5.4	86	46.2	46
235	2	0.313	0.058	1.53	4.9	40	41.0	24

INST	PLOT	N	P	ORG-C	C/N	MIN-N	C.F.	COR. MIN
235	3	0.331	0.031	1.83	5.5	42	58.9	17
235	4	0.332	0.104	1.76	5.3	43	39.7	26
235	5	0.358	0.103	1.80	5.0	39	35.7	25
235	6	0.446	0.159	2.63	5.9	64	62.3	24
236	1	0.442	0.065	1.22	2.8	63	17.4	52
236	2	0.413	0.051	3.37	8.2	75	29.2	53
236	3	0.555	0.071	5.11	9.2	92	32.9	62
236	4	0.525	0.084	5.85	11.1	67	40.4	40
236	5	0.434	0.071	4.99	11.5	75	24.3	57
236	6	0.510	0.064	5.38	10.6	76	39.1	46
237	1	0.382	0.049	2.79	7.3	72	53.2	34
237	2	0.392	0.060	3.82	9.7	86	47.3	45
237	3	0.337	0.061	3.20	9.5	61	36.5	39
237	4	0.367	0.052	1.86	5.1	44	51.3	21
237	5	0.374	0.057	2.65	7.1	62	59.4	25
237	6	0.306	0.059	3.08	10.1	72	52.2	35
238	1	0.249	0.189	1.81	7.3	51	52.5	24
238	2	0.262	0.153	1.43	5.5	49	42.6	28
238	3	0.218	0.301	1.66	7.6	48	42.4	28
238	4	0.186	0.047	1.67	9.0	67	55.0	30
238	5	0.234	0.033	2.26	9.7	100	51.6	48
238	6	0.436	0.050	2.52	5.8	91	28.1	66
239	1	0.422	0.076	2.48	5.9	58	28.1	41
239	2	0.530	0.080	2.61	4.9	53	7.8	49
239	3	0.147	0.078	2.89	19.6	65	39.1	40
239	4	0.233	0.112	4.35	18.7	99	33.1	66
239	5	0.268	0.084	5.85	21.8	81	41.9	47
239	6	0.216	0.084	4.49	20.8	72	37.2	45
240	1	0.114	0.079	2.57	22.5	38	8.9	34
240	2	0.094	0.043	2.36	25.0	39	13.1	34
240	3	0.105	0.062	2.28	21.7	43	13.3	37
240	4	0.128	0.064	2.48	19.3	63	0.0	63
240	5	0.127	0.043	2.71	21.4	55	18.2	45
240	6	0.100	0.046	2.15	21.4	41	5.4	39
241	1	0.033	0.115	1.04	31.9	36	8.4	33
241	2	0.035	0.111	1.19	33.8	26	5.6	24
241	3	0.034	0.119	0.97	29.0	27	9.5	24
241	4	0.073	0.107	1.21	16.6	18	4.7	17
241	5	0.041	0.113	1.08	26.4	19	0.0	19
241	6	0.029	0.112	0.81	28.2	20	6.3	18
242	1	0.091	0.097	1.46	16.1	64	31.5	44
242	2	0.066	0.085	1.52	23.2	46	29.5	33
242	3	0.065	0.102	1.41	21.6	48	29.0	34
242	4	0.058	0.067	1.46	25.2	47	29.6	33
242	5	0.061	0.086	1.31	21.3	51	26.3	37
242	6	0.098	0.087	1.50	15.4	57	25.7	43
243	1	0.116	0.097	2.79	24.1	75	25.3	56
243	2	0.130	0.248	2.57	19.8	93	23.8	71
243	3	0.108	0.176	2.89	26.8	84	38.2	52
243	4	0.147	0.107	3.28	22.3	61	23.6	47
243	5	0.114	0.112	2.89	25.3	97	21.3	77
243	6	0.137	0.139	3.22	23.4	80	27.3	58
244	1	0.191	0.071	2.77	14.5	71	19.8	57
244	2	0.434	0.060	3.37	7.8	68	29.9	48
244	3	0.360	0.061	2.69	7.5	81	21.0	64

INST	PLOT	N	P	ORG-C	C/N	MIN-N	C.F.	COR. MIN	
	244	4	0.450	0.045	3.16	7.0	67	25.4	50
	244	5	0.450	0.045	2.54	5.6	78	20.5	62
	244	6	0.418	0.041	3.22	7.7	67	21.4	52
	245	1	0.396	0.072	2.36	6.0	51	27.5	37
	245	2	0.309	0.075	1.76	5.7	74	28.7	53
	245	3	0.509	0.060	3.03	6.0	99	32.7	67
	245	4	0.560	0.033	5.62	10.0	69	25.6	51
	245	5	0.366	0.026	2.41	6.6	62	27.4	45
	245	6	0.371	0.061	2.32	6.3	57	32.7	38
	246	1	0.272	0.063	2.46	9.0	70	25.6	52
	246	2	0.285	0.070	2.72	9.5	52	27.4	38
	246	3	0.253	0.056	2.17	8.6	71	45.1	39
	246	4	0.296	0.168	2.52	8.5	50	27.7	36
	246	5	0.291	0.068	4.49	15.4	59	31.0	41
	246	6	0.385	0.273	2.98	7.7	54	29.3	38
	247	1	0.085	0.141	1.58	18.6	39	21.9	31
	247	2	0.188	0.146	1.95	10.4	50	21.5	39
	247	3	0.179	0.129	1.70	9.5	53	22.4	41
	247	4	0.171	0.135	1.91	11.1	52	23.4	40
	247	5	0.149	0.218	2.03	13.6	67	26.1	50
	247	6	0.251	0.191	2.15	8.5	64	29.1	46
	248	1	0.114	0.071	1.11	9.8	41	9.9	37
	248	2	0.116	0.104	1.46	12.7	39	12.4	34
	248	3	0.112	0.065	1.07	9.6	34	8.1	31
	248	4	0.152	0.064	0.54	3.5	29	12.5	25
	248	5	0.119	0.077	1.03	8.7	13	8.4	12
	248	6	0.125	0.064	1.32	10.5	30	15.5	25
	249	1	0.062	0.107	1.89	30.6	28	16.3	24
	249	2	0.064	0.133	1.37	21.2	43	7.3	40
	249	3	0.061	0.072	1.37	22.2	51	9.0	46
	249	4	0.057	0.117	1.40	24.8	43	20.5	34
	249	5	0.048	0.065	1.20	25.1	45	13.6	38
	249	6	0.055	0.117	1.33	24.1	42	7.1	39
	250	1	0.098	0.063	2.06	21.0	50	12.4	44
	250	2	0.051	0.032	2.72	52.8	82	15.8	69
	250	3	0.057	0.038	1.87	32.7	39	13.0	34
	250	4	0.091	0.076	2.30	25.4	36	14.3	31
	250	5	0.120	0.049	2.26	18.9	48	10.3	43
	250	6	0.108	0.038	1.85	17.2	44	16.2	37
	251	1	0.093	0.041	2.30	24.8	96	32.1	65
	251	2	0.098	0.053	2.30	23.5	105	37.0	66
	251	3	0.098	0.051	2.40	24.6	90	45.6	49
	251	4	0.114	0.037	2.70	23.6	62	39.2	38
	251	5	0.157	0.041	3.49	22.3	54	44.9	30
	251	6	0.185	0.041	3.35	18.1	101	42.4	58
	252	1	0.096	0.057	1.79	18.7	59	50.7	29
	252	2	0.099	0.057	1.85	18.8	42	41.1	25
	252	3	0.092	0.051	1.79	19.6	36	49.5	18
	252	4	0.090	0.048	1.74	19.4	46	43.4	26
	252	5	0.119	0.055	2.01	16.8	75	42.4	43
	252	6	0.063	0.048	1.28	20.2	31	26.4	23
	253	1	0.125	0.069	2.38	19.0	101	18.4	83
	253	2	0.117	0.046	2.52	21.5	66	14.6	56
	253	3	0.095	0.051	1.81	19.2	36	13.7	31
	253	4	0.108	0.050	2.20	20.4	47	15.2	40

INST	PLOT	N	P	ORG-C	C/N	MIN-N	C.F.	COR. MIN	
253	5	0.119	0.054	2.59	21.8	58	23.6	44
253	6	0.298	0.107	2.63	8.8	64	12.8	56
254	1	0.275	0.107	2.36	8.6	50	9.6	45
254	2	0.224	0.078	2.05	9.1	76	16.4	64
254	3	0.200	0.066	1.71	8.5	47	9.8	42
254	4	0.219	0.099	2.28	10.4	45	9.2	41
254	5	0.187	0.087	2.17	11.6	55	12.2	48
254	6	0.156	0.140	2.07	13.2	38	21.4	30
255	1	0.186	0.015	1.46	7.9	56	9.9	50
255	2	0.213	0.046	2.15	10.1	59	9.5	53
255	3	0.202	0.083	2.54	12.5	68	8.7	62
255	4	0.157	0.104	1.66	10.5	47	6.4	44
255	5	0.207	0.114	1.47	7.1	42	7.8	39
255	6	0.101	0.069	1.66	16.4	48	6.5	45
256	1	0.180	0.110	2.65	14.8	66	17.0	55
256	2	0.251	0.132	2.80	11.1	76	20.0	61
256	3	0.211	0.067	2.01	9.5	65	11.2	58
256	4	0.190	0.107	2.24	11.8	44	13.8	38
256	5	0.216	0.274	2.62	12.1	79	31.1	54
256	6	0.309	0.301	2.77	9.0	62	19.5	50
257	1	0.469	0.154	3.48	7.4	87	17.5	71
257	2	0.328	0.182	3.06	9.3	72	15.1	61
257	3	0.324	0.148	2.63	8.1	87	12.6	76
257	4	0.322	0.078	2.75	8.5	80	13.3	69
257	5	0.158	0.059	3.02	19.1	65	32.2	44
257	6	0.231	0.063	3.41	14.8	94	10.4	84
258	1	0.403	0.074	2.20	5.5	93	26.4	69
258	2	0.391	0.113	1.93	4.9	88	27.8	63
258	3	0.389	0.110	2.20	5.7	82	14.7	70
258	4	0.286	0.068	3.06	10.7	85	31.5	58
258	5	0.346	0.092	1.50	4.3	101	11.0	90
258	6	0.353	0.066	1.48	4.2	84	7.8	78
259	1	0.327	0.039	1.64	5.0	69	14.9	58
259	2	0.109	0.031	1.20	11.0	39	11.6	34
259	3	0.151	0.036	1.19	7.9	29	12.2	26
259	4	0.247	0.040	1.56	6.3	32	14.9	27
259	5	0.157	0.046	1.66	10.5	44	15.4	37
259	6	0.033	0.044	0.96	28.9	35	16.3	30
260	1	0.119	0.071	1.32	11.0	27	19.9	22
260	2	0.098	0.062	0.90	9.1	26	15.6	22
260	3	0.110	0.107	1.03	9.4	28	15.9	24
260	4	0.116	0.070	0.96	8.2	30	18.4	25
260	5	0.115	0.046	0.73	6.4	25	16.4	21
260	6	0.127	0.110	1.13	8.9	28	22.3	22
261	1	0.115	0.040	1.54	13.4	92	6.7	86
261	2	0.143	0.033	1.15	8.0	35	16.1	30
261	3	0.128	0.067	1.76	13.7	26	8.4	24
261	4	0.094	0.020	1.33	14.1	26	6.6	24
261	5	0.010	0.054	1.44	144.8	24	7.5	22
261	6	0.133	0.036	1.38	10.4	30	9.9	27
262	1	0.231	0.127	1.58	6.8	13	17.2	11
262	2	0.118	0.078	1.17	9.9	6	20.2	5
262	3	0.158	0.065	1.62	10.2	16	19.2	13
262	4	0.156	0.080	1.41	9.0	37	16.8	31
262	5	0.185	0.068	1.76	9.5	32	13.9	27

INST	PLOT	N	P	ORG-C	C/N	MIN-N	C.F.	COR. MIN
262	6	0.149	0.086	1.17	7.9	25	13.4	21
263	1	0.211	0.091	1.43	6.8	18	18.9	15
263	2	0.077	0.023	0.80	10.4	30	9.2	27
263	3	0.149	0.029	1.06	7.1	21	9.4	19
263	4	0.123	0.045	0.83	6.7	64	7.2	59
263	5	0.210	0.071	1.05	5.0	67	6.1	63
263	6	0.123	0.032	0.92	7.4	45	3.7	43
264	1	0.174	0.067	0.96	5.5	62	12.4	54
264	2	0.230	0.057	0.85	3.7	40	14.8	34
264	3	0.376	0.103	1.02	2.7	37	12.9	33
264	4	0.315	0.076	1.26	4.0	39	14.1	33
264	5	0.212	0.075	1.17	5.5	31	15.8	26
264	6	0.218	0.060	0.98	4.5	35	13.3	31
265	1	0.564	0.097	1.00	1.8	41	17.0	34
265	2	0.286	0.027	1.14	4.0	34	12.0	30
265	3	0.293	0.027	1.19	4.1	34	13.6	29
265	4	0.200	0.024	1.09	5.4	30	17.7	25
265	5	0.330	0.046	1.26	3.8	37	15.0	32
265	6	0.397	0.024	1.09	2.7	49	21.0	39
266	1	0.288	0.167	2.65	9.2	48	41.3	28
266	2	0.196	0.096	1.66	8.4	47	27.3	34
266	3	0.245	0.161	1.72	7.0	61	25.3	45
266	4	0.240	0.142	1.72	7.2	52	28.3	37
266	5	0.381	0.152	2.42	6.3	48	42.6	28
266	6	0.500	0.172	2.83	5.7	44	48.4	23
267	1	0.431	0.200	2.47	5.7	41	34.3	27
267	2	0.223	0.153	1.96	8.8	58	37.0	36
267	3	0.383	0.114	2.85	7.4	63	40.5	38
267	4	0.278	0.110	1.63	5.9	30	11.9	27
267	5	0.360	0.124	1.82	5.0	40	22.9	31
267	6	0.242	0.079	1.18	4.9	39	20.0	31
268	1	0.383	0.184	2.00	5.2	43	31.0	30
268	2	0.356	0.179	2.19	6.2	44	31.0	31
268	3	0.340	0.217	1.78	5.3	40	30.1	28
268	4	0.320	0.220	2.65	8.3	50	30.3	35
268	5	0.384	0.275	2.51	6.5	49	30.6	34
268	6	0.243	0.241	1.63	6.7	35	28.4	25
269	1	0.041	0.014	1.38	33.9	40	56.9	17
269	2	0.177	0.012	1.90	10.8	45	53.9	21
269	3	0.235	0.031	2.66	11.3	66	61.5	25
269	4	0.139	0.019	1.64	11.8	45	51.5	22
269	5	0.100	0.006	1.63	16.3	34	44.7	19
269	6	0.112	0.008	1.49	13.3	45	54.0	21
270	1	0.459	0.014	1.82	4.0	59	53.1	28
270	2	0.082	0.043	1.92	23.5	55	55.9	24
270	3	0.022	0.015	1.65	74.9	24	44.6	13
270	4	0.063	0.022	1.45	23.1	31	50.5	15
270	5	0.250	0.011	1.67	6.7	40	53.1	19
270	6	0.161	0.004	1.69	10.4	56	50.9	29
271	1	0.098	0.046	1.73	17.6	40	47.2	21
271	2	0.081	0.047	2.10	25.7	39	38.8	24
271	3	0.068	0.035	1.24	18.2	30	44.5	17
271	4	0.210	0.028	1.41	6.7	41	49.0	21
271	5	0.163	0.020	1.53	9.4	39	48.5	20
271	6	0.072	0.018	1.36	18.9	35	49.7	18

INST	PLOT	N	P	ORG-C	C/N	MIN-N	C.F.	COR. MIN
272	1	0.100	0.303	1.63	16.2	35	35.6	22
272	2	0.084	0.291	1.30	15.4	25	35.3	16
272	3	0.092	0.175	1.60	17.4	23	53.4	11
272	4	0.111	0.254	1.75	15.7	28	45.1	16
272	5	0.130	0.176	1.84	14.2	31	55.9	14
272	6	0.133	0.194	2.25	16.9	30	53.9	14
273	1	0.233	0.100	2.56	11.0	33	22.0	25
273	2	0.269	0.073	2.44	9.1	38	19.3	31
273	3	0.266	0.110	2.04	7.7	44	16.3	37
273	4	0.279	0.058	2.08	7.4	32	17.5	27
273	5	0.224	0.104	1.76	7.9	24	19.1	19
273	6	0.370	0.140	2.50	6.7	33	19.1	27
274	1	0.303	0.169	2.17	7.2	45	39.3	27
274	2	0.240	0.143	2.06	8.6	34	29.6	24
274	3	0.323	0.131	2.27	7.0	43	21.6	33
274	4	0.345	0.161	1.98	5.7	46	15.5	39
274	5	0.315	0.134	1.92	6.1	63	15.9	53
274	6	0.521	0.138	1.98	3.8	56	14.6	47
275	1	0.182	0.121	1.43	7.9	40	19.4	32
275	2	0.567	0.216	2.34	4.1	56	23.0	43
275	3	0.313	0.043	2.16	6.9	56	22.6	43
275	4	0.346	0.043	1.55	4.5	41	21.6	32
275	5	0.493	0.087	2.17	4.4	46	24.9	35
275	6	0.462	0.078	1.65	3.6	39	17.8	32
276	1	1.424	0.105	4.08	2.9	62	22.2	48
276	2	2.387	0.137	3.30	1.4	50	25.8	37
276	3	3.944	0.151	4.66	1.2	79	25.9	58
276	4	0.246	0.125	3.49	14.2	62	20.9	49
276	5	0.177	0.130	2.45	13.8	50	15.2	42
276	6	0.196	0.101	2.30	11.8	55	14.4	47
277	1	0.197	0.129	2.29	11.6	45	10.6	41
277	2	0.198	0.117	2.64	13.4	47	16.2	40
277	3	0.173	0.134	2.31	13.3	50	16.3	42
277	4	0.165	0.108	2.55	15.5	50	32.8	34
277	5	0.172	0.103	2.27	13.2	39	21.5	31
277	6	0.154	0.152	2.35	15.2	48	17.2	40
278	1	0.107	0.036	0.81	7.6	19	16.7	15
278	2	0.088	0.036	1.57	17.8	26	21.6	21
278	3	0.070	0.020	1.24	17.8	24	23.4	18
278	4	0.083	0.038	1.32	15.9	26	14.4	23
278	5	0.084	0.034	1.21	14.3	21	22.2	16
278	6	0.087	0.040	1.12	12.8	22	17.8	18
279	1	0.071	0.044	1.13	15.9	20	34.6	13
279	2	0.116	0.041	1.24	10.7	40	23.6	30
279	3	0.059	0.027	1.16	19.7	22	24.2	17
279	4	0.027	0.023	1.72	62.8	21	24.8	16
279	5	0.084	0.045	1.15	13.7	23	17.8	19
279	6	0.111	0.057	1.52	13.8	37	18.2	31
280	1	0.084	0.057	1.55	18.5	22	25.6	16
280	2	0.046	0.002	1.15	25.2	23	28.6	16
280	3	0.083	0.007	1.37	16.4	26	36.0	17
280	4	0.077	0.014	1.00	13.1	26	33.2	17
280	5	0.058	0.013	3.80	65.7	20	25.2	15
280	6	0.036	0.016	0.89	24.7	23	28.3	17
281	1	0.148	0.184	1.86	12.6	43	15.1	37

INST	PLOT	N	P	ORG-C	C/N	MIN-N	C.F.	COR. MIN
281	2	0.129	0.228	1.50	11.6	45	20.6	36
281	3	0.115	0.242	2.00	17.3	44	21.1	35
281	4	0.135	0.216	1.88	13.9	40	22.1	31
281	5	0.112	0.118	1.58	14.2	35	18.1	29
281	6	0.126	0.081	1.69	13.4	34	16.4	28
282	1	0.058	0.125	0.97	16.7	13	8.4	12
282	2	0.050	0.124	1.05	20.9	12	12.7	10
282	3	0.061	0.115	0.68	11.2	17	12.3	15
282	4	0.052	0.122	1.45	27.8	14	11.1	13
282	5	0.040	0.140	0.90	22.5	14	16.8	12
282	6	0.040	0.122	1.12	28.0	16	7.2	15
283	1	0.037	0.119	0.83	22.5	11	4.7	10
283	2	0.040	0.112	0.91	22.6	14	7.5	13
283	3	0.030	0.148	0.69	22.8	16	7.0	15
283	4	0.049	0.040	0.77	15.8	12	6.4	12
283	5	0.046	0.047	0.88	18.9	11	7.8	10
283	6	0.049	0.039	1.02	20.6	13	37.8	8
284	1	0.271	0.037	4.21	15.5	77	37.6	48
284	2	0.253	0.036	3.44	13.6	82	37.5	51
284	3	0.259	0.027	3.32	12.8	98	37.5	61
284	4	0.139	0.037	2.37	17.1	58	31.8	40
284	5	0.185	0.036	2.67	14.4	62	35.5	40
284	6	0.211	0.032	3.00	14.2	80	31.3	55
285	1	0.175	0.030	1.87	10.7	82	18.9	67
285	2	0.179	0.034	2.40	13.4	51	16.6	42
285	3	0.192	0.032	2.79	14.6	52	18.2	43
285	4	0.129	0.046	1.79	13.9	50	21.7	39
285	5	0.179	0.046	2.57	14.4	51	25.3	38
285	6	0.149	0.035	2.13	14.3	35	26.3	26
286	1	0.154	0.056	2.08	13.5	49	42.4	28
286	2	0.178	0.064	3.27	18.3	68	51.2	33
286	3	0.143	0.040	2.45	17.1	68	41.8	39
286	4	0.161	0.028	3.04	18.9	68	33.8	45
286	5	0.142	0.067	2.63	18.5	66	41.7	38
286	6	0.174	0.084	2.59	14.9	53	39.7	32
287	1	0.056	0.041	0.73	13.2	25	4.8	24
287	2	0.059	0.051	1.05	17.8	22	8.8	20
287	3	0.061	0.053	0.67	11.0	24	7.2	23
287	4	0.065	0.044	0.61	9.5	12	10.5	11
287	5	0.075	0.044	0.92	12.2	18	9.5	16
287	6	0.071	0.047	1.04	14.8	23	13.5	20
288	1	0.117	0.040	1.99	17.0	69	23.2	53
288	2	0.090	0.022	1.37	15.2	62	6.1	58
288	3	0.118	0.031	1.62	13.7	69	14.2	59
288	4	0.117	0.093	1.64	14.0	44	13.9	37
288	5	0.112	0.043	1.85	16.5	57	20.9	45
288	6	0.129	0.043	1.88	14.6	59	20.9	47
289	1	0.196	0.195	2.50	12.7	55	34.6	36
289	2	0.275	0.140	3.06	11.1	72	38.6	44
289	3	0.219	0.181	2.81	12.8	70	33.9	46
289	4	0.310	0.152	2.48	8.0	115	56.1	51
289	5	0.095	0.147	1.33	13.9	44	27.6	32
289	6	0.108	0.143	2.20	20.5	69	37.3	43
290	1	0.231	0.204	2.52	10.9	97	34.2	64
290	2	0.153	0.146	2.46	16.1	70	38.3	43

INST	PLOT	N	P	ORG-C	C/N	MIN-N	C.F.	COR. MIN
290	3	0.196	0.140	2.82	14.4	75	32.9	50
290	4	0.142	0.144	2.55	18.0	66	27.4	48
290	5	0.142	0.073	2.34	16.5	88	34.8	57
290	6	0.107	0.117	2.32	21.7	60	30.6	42