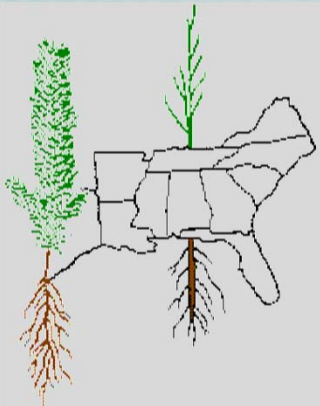
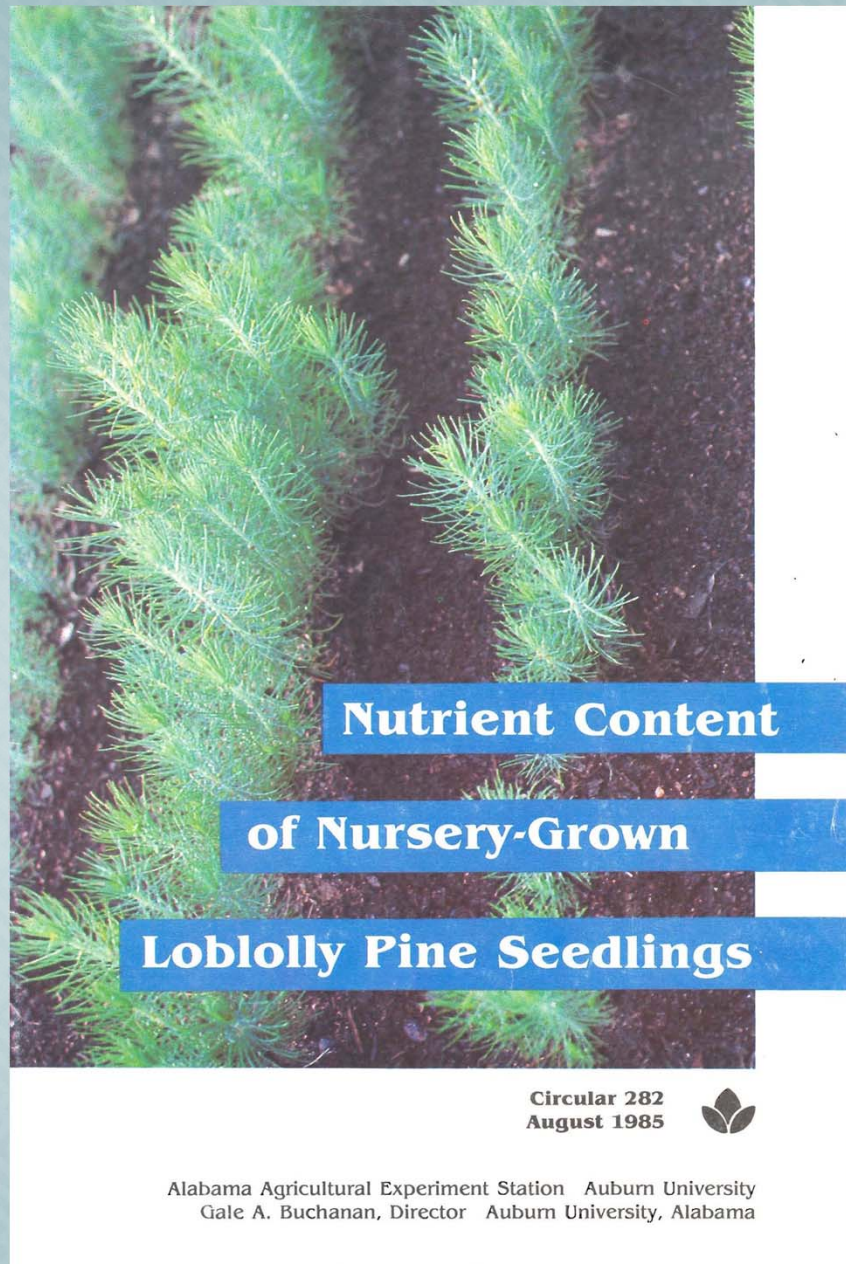


Nutrient Content of Loblolly & Longleaf Pine Seedlings

Tom Starkey & David South
Southern Forest Nursery Mgt. Cooperative
Auburn University





- 2 sampling periods:
 - ✓ 11-1981 to 1-1982
 - ✓ 12-1982
- Loblolly:
 - ✓ Yr 1- many seed sources
 - ✓ Yr 2 – Liv. Parrish
- Foliage, stem & roots
- A&L Labs – Memphis, TN

By James N. Boyer and David B. South

Why do this survey?

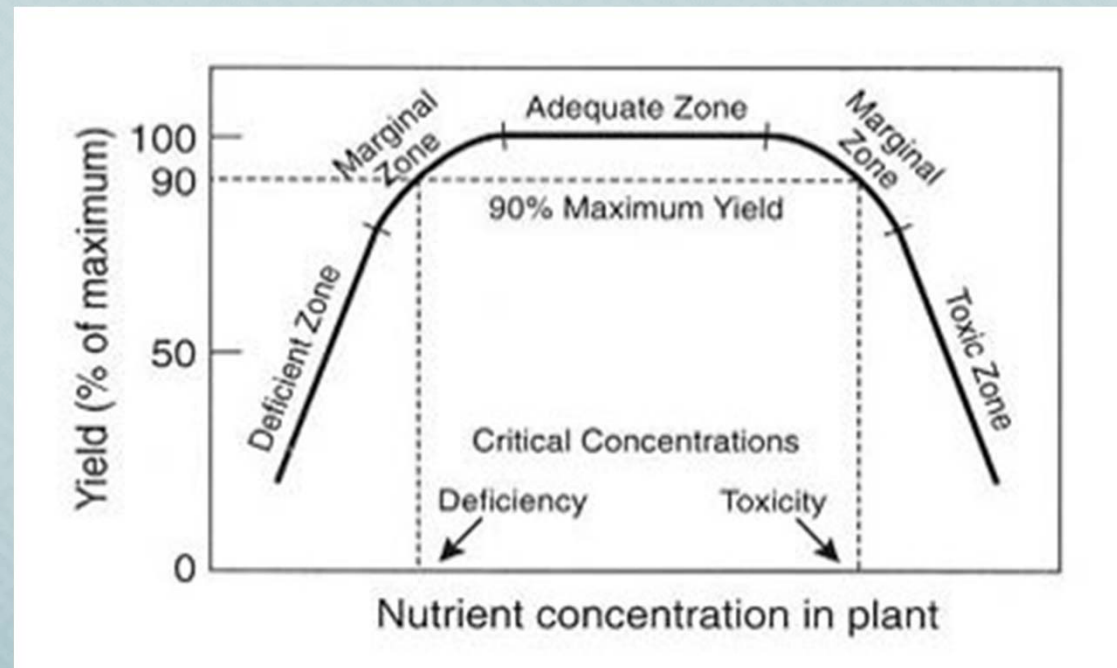


- Primary reason is so that we can better help you diagnose early potential nutrient problems of samples sent into the disease clinic.
- ✓ ■ Need an idea of nutrient variation over a season.
- Seed sources and management techniques have changed significantly over the past 30 years. Does this affect nutrient levels?

Why do this survey?



- This survey is not intended to determine “optimum” or “critical” levels of nutrients.



What we was done

- Sampling Time:
 - July
 - October
 - January
- Nurseries:
 - Bareroot – 20 nurseries
 - 12 nurseries – 1st yr land
 - 5 nurseries – 2nd yr land
 - 3 nurseries – 3rd yr land
 - Container – 7 nurseries
- Species:
 - Bareroot – Loblolly coastal seed source
 - Container – Loblolly & Longleaf coastal seed source

09-230-0009



A&L Analytical Laboratories, Inc.

2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440

Lab No:

230024

PLANT ANALYSIS

Customer Account Number : 06165

Send To : Auburn University

Attn: Dr. David South

3301 Forestry & Wildlife Science Bl

Auburn Univ. AL 36849-541E

Grower :

Tom Starkey

Report Date : 8/20/2009

Page 1 of 1

Field id:

Sample Id : 19 BRLB

Crop :

Growth Stage :

[illegible]

Bareroot Loblolly

Nutrient	Unit	July/Aug	Oct/Nov	Jan/Feb	1982 (Nov/Dec)
N	%	2.56	1.61	1.26	1.41
S	%	0.19	0.13	0.10	0.07
P	%	0.28	0.19	0.15	0.21
K	%	1.42	0.90	0.76	1.12
MG	%	0.15	0.11	0.11	0.11
CA	%	0.37	0.35	0.33	0.27
NA	%	0.03	0.02	0.03	0.02
B	PPM	23	16	13	17
ZN	PPM	77	56	56	56
MN	PPM	378	549	486	455
Fe	PPM	271	163	220	366
Cu	PPM	16	11	14	7
Al	PPM	337	334	419	587

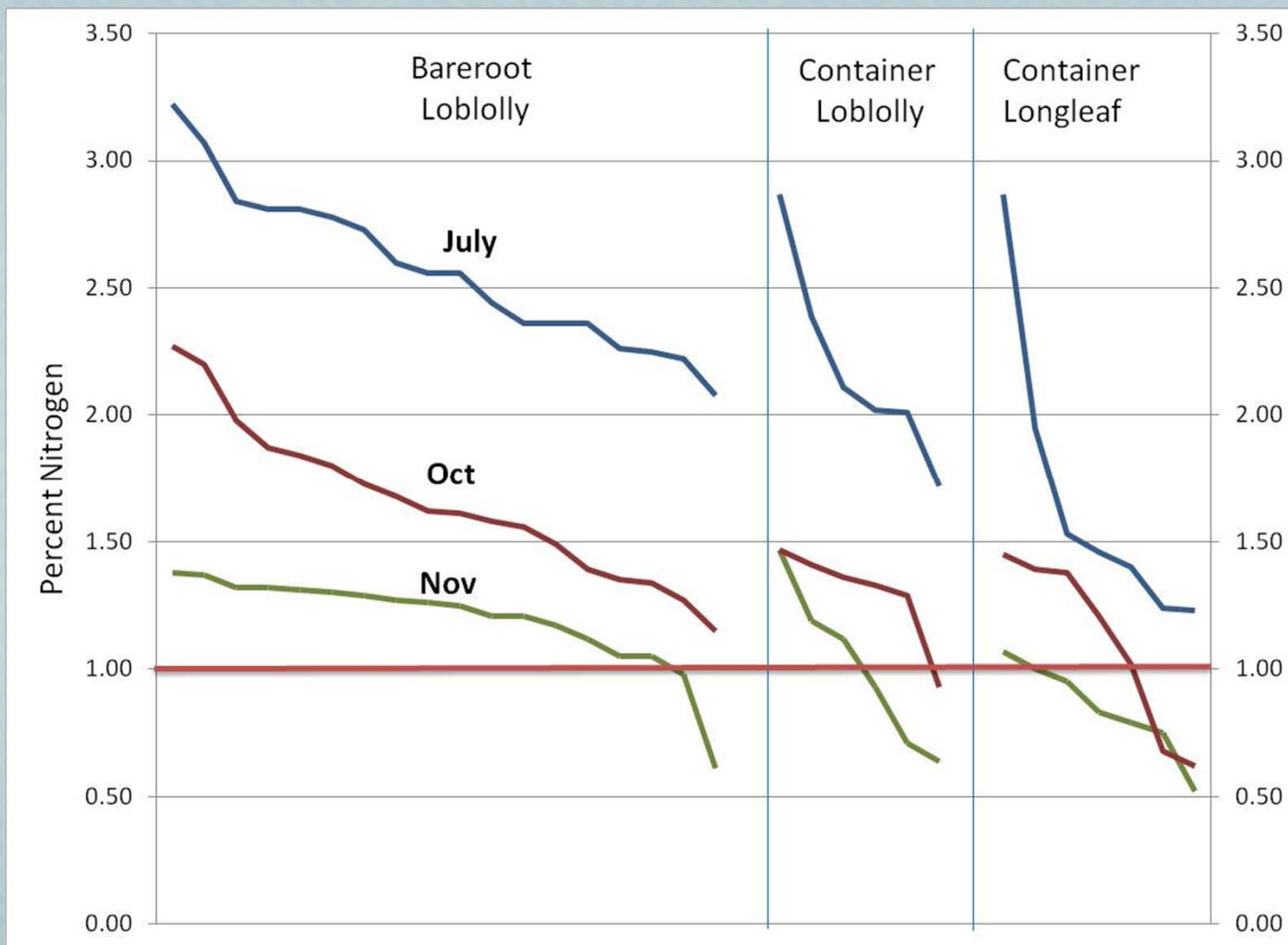
Container Loblolly

Nutrient	Unit	July/Aug	Oct/Nov	Jan/Feb
N	%	2.07	1.35	1.03
S	%	0.19	0.12	0.11
P	%	0.28	0.17	0.13
K	%	1.51	1.05	0.90
MG	%	0.18	0.15	0.15
CA	%	0.34	0.45	0.39
NA	%	0.05	0.04	0.05
B	PPM	17	18	14
ZN	PPM	56	40	39
MN	PPM	164	109	124
Fe	PPM	171	158	239
Cu	PPM	14	13	14
Al	PPM	134	119	215

Container Longleaf

Nutrient	Unit	July/Aug	Oct/Nov	Jan/Feb
N	%	1.46	1.21	0.83
S	%	0.17	0.14	0.10
P	%	0.15	0.13	0.10
K	%	1.06	1.07	0.94
MG	%	0.14	0.13	0.13
CA	%	0.35	0.33	0.33
NA	%	0.09	0.05	0.04
B	PPM	14	16	14
ZN	PPM	40	36	44
MN	PPM	89	115	92
Fe	PPM	141	197	178
Cu	PPM	10	14	13
Al	PPM	120	126	191

Comparison of Stock Type and Nitrogen Loss



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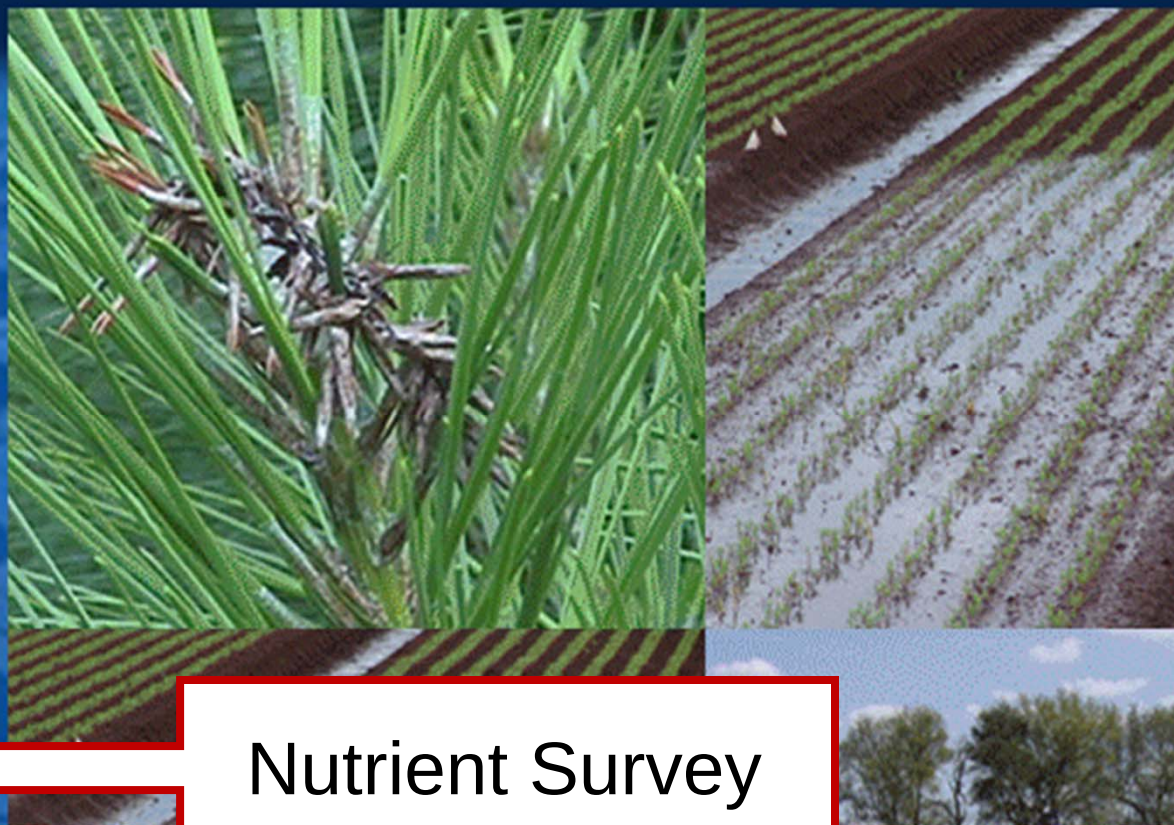


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Nutrient Survey

2010 Contact Meeting

Bareroot Loblolly

July/Aug

Bareroot Loblolly

Oct/Nov

Bareroot Loblolly

Jan/Feb

Nutrie
Unit
Minim
Media
Maxim
Coeff \

Nutrie
Unit
Minim
Media
Maxim
Coeff \

Nutrient	N
Unit	Pct.
Minimum	1.15
Median	1.61
Maximum	2.27
Coeff var.	18.2
Nutrient	B
Unit	PPM
Minimum	7
Median	16
Maximum	42
Coeff var.	48.1

Nutrient	N	S	P	K	MG	CA	NA
Unit	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Minimum	0.61	0.07	0.07	0.31	0.06	0.25	0.01
Median	1.26	0.10	0.15	0.76	0.11	0.33	0.03
Maximum	1.38	0.15	0.21	1.19	0.15	0.59	0.06
Coeff Var.	15.5	18.1	20.2	28.5	25.3	28.2	50.1
Nutrient	B	ZN	MN	Fe	Cu	Al	
Unit	PPM	PPM	PPM	PPM	PPM	PPM	
Minimum	6	31	135	85	6	185	
Median	13	56	486	220	14	419	
Maximum	25	115	1677	1161	52	2097	
Coeff Var.	35.3	32.9	74.1	86.4	68.2	84.8	



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