Surveys:
1) Nutrient Analysis
2) 30 yr Nursery Mgt

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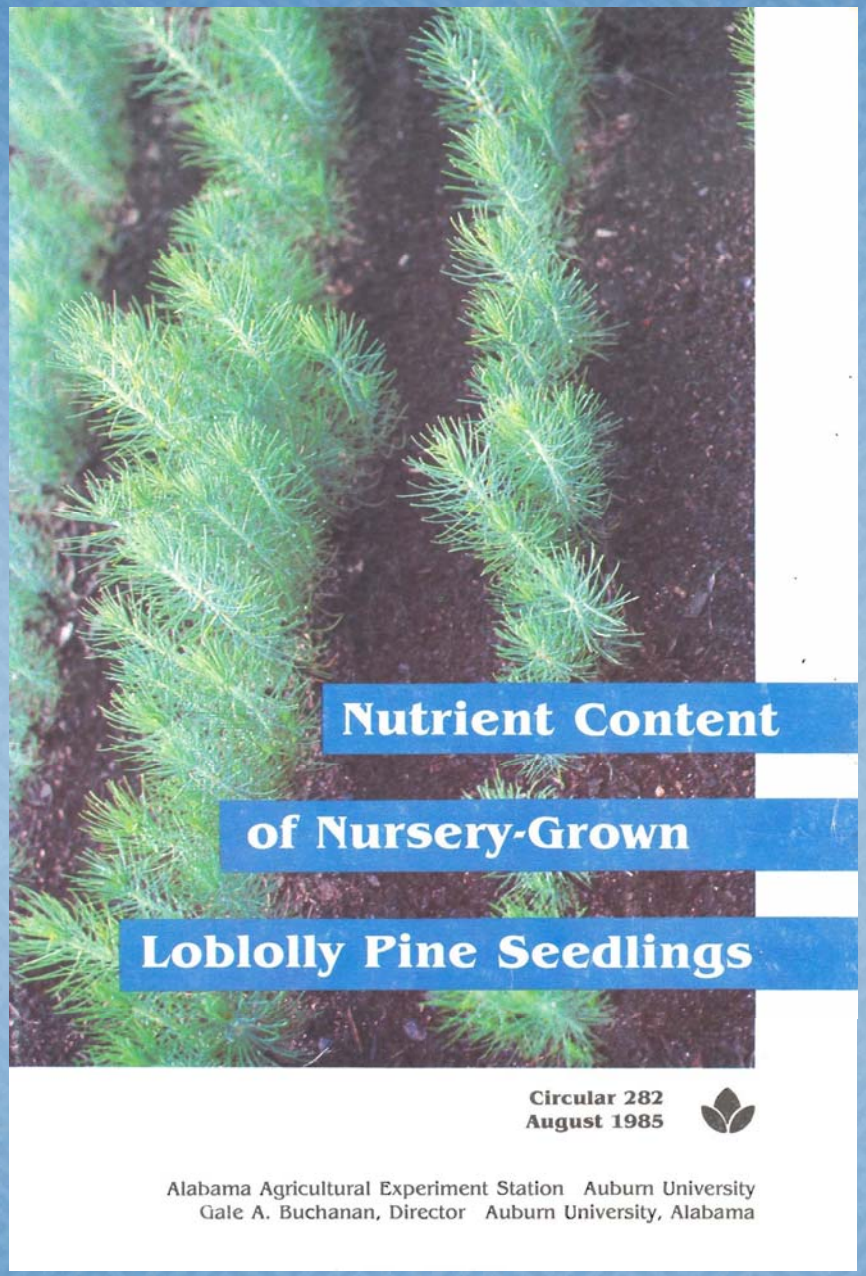


By James N. Boyer and David B. South

- 2 sampling periods:
  - ✓ 11/81 to 1/82
  - ✓ 12/82
- Loblolly:
  - ✓ Yr 1- many seed sources
  - ✓ Yr 2 – Liv. Parrish
- Foliage, stem & roots
- A&L Labs – Memphis, TN

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?

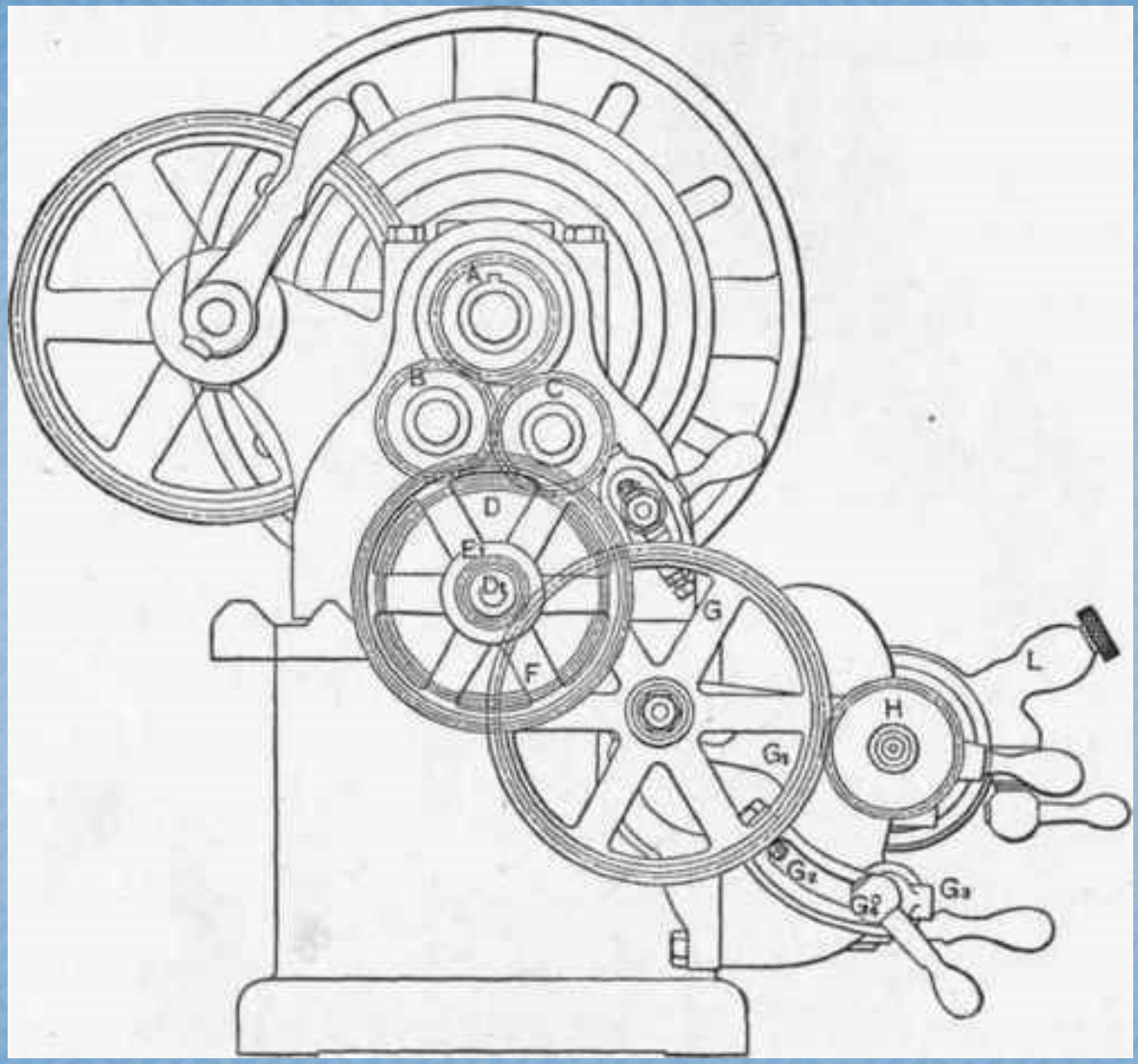
What we plan on doing

- Sampling Time:
  - July
  - September
  - Dec/Jan
- Nurseries:
  - Bareroot – 8 to 10 in SE
  - Container – at least NC, GA, AL, MS
- Species:
  - Bareroot – Loblolly coastal seed source
  - Container – Longleaf coastal seed source

What we plan on doing

- We will send out bags and instructions along with what you will need (prepaid) to send samples directly to A&L Labs in Memphis.
- Results will be sent to AU.
- Depending on date, samples will consist of 8-12 seedlings. Top of seedling cut just below the bottom needles, place in a paper bag and mailed off.
- Time – 10 minutes
- Cost – negligible

Questions???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30 Year Update…..

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Forest Nursery Practices In the South

James N. Boyer and David B. South

Based on 1980 survey

1. Begin new survey in early 2010
2. Also discuss what has caused the changes

Table 2. Number, ownership, and size of participating southern nurseries.

Ownership	Size[1]			
	Small	Medium	Large	Total
Federal	—	—	1	1
State	4	12	7	23
Forest industry	8	15	4	27
Total	12	26	12	51

[1] *Annual production: small = less than 12 million; medium = 12 million to 30 million; large = more than 30 million seedlings produced.*

Table 3. Number of forest tree seedlings produced at southern nurseries in 1980.

Species	Industry	State & Federal	Total
	Thousands		
Loblolly pine (Quest.)	381,518 (27)[1]	382,102 (20)	763,620 (47)
Loblolly pine (Non-Quest.)[2]	79,500 (5)	122,500 (6)	202,000 (11)
Total loblolly pine	461,018 (32)	504,602 (26)	965,620 (58)
Slash pine	106,245 (11)	60,969 (11)	167,214 (22)
White pine	95 (1)	22,545 (5)	22,640 (6)
Shortleaf pine	500 (1)	12,414 (9)	12,914 (10)
Longleaf pine	293 (4)	10,000 (9)	10,293 (13)
Sand pine	7,725 (7)	450 (1)	8,175 (8)
Virginia pine	2,800 (2)	4,058 (7)	6,858 (9)
Scotch pine	— (0)	1,220 (3)	1,220 (3)
Spruce pine	7 (1)	150 (1)	157 (2)
Pond pine	30 (1)	— (0)	30 (1)
Pines not listed by species	— (0)	54,420 (3)	54,420 (3)
	578,713 (32)	670,828 (29)	1,249,541 (61)
Black locust	— (0)	3,059 (6)	3,059 (6)
Sweetgum	1,495 (3)	227 (5)	1,722 (8)
Sycamore	861 (2)	382 (3)	1,243 (5)
Oaks	448 (2)	366 (4)	814 (6)
Green ash	427 (2)	220 (1)	647 (3)
Cottonwood	— (0)	610 (2)	610 (2)
Yellow-poplar	— (0)	601 (4)	601 (4)
Dogwood	— (0)	492 (1)	492 (1)
Black alder	— (0)	410 (1)	410 (1)
Black walnut	— (0)	147 (3)	147 (3)
Hardwoods not listed by species	— (0)	3,568 (7)	3,568 (7)
	3,231 (3)	10,082 (12)	13,313 (15)
Redcedar	— (0)	1,807 (3)	1,807 (3)
Baldcypress	— (0)	290 (2)	290 (2)
Arizona cypress	10 (1)	21 (1)	31 (2)
	10 (1)	2,118 (5)	2,128 (6)
Others (Non-Quest.)[2]	8,857 (4)	10,468 (7)	19,325 (11)
GRAND TOTALS	590,811 (32)	693,496 (31)	1,284,307 (63)

[1] *In parentheses is the number of nurseries producing the species.*
[2] *An estimate was made of total production and loblolly pine production at southern nurseries for which a questionnaire was not returned.*

Table 4. Crop rotation employed at southern forest nurseries in 1980.

Rotation Seedlings : Crop cover	Industry (25)		State & Federal (22)		Total (47)	
	Number	*Percent*	*Number*	*Percent*	*Number*	*Percent*
1 : 1[1]	14	56	6	27	20	43
1 : 2	3	12	1	5	4	9
1 : 3	1	4	0	—	1	2
2 : 1	0	—	8	36	8	17
2 : 2	7	28	3	14	10	21
3 : 1	0	—	2	9	2	4
4 : 1	0	—	2	9	2	4

[1] *Crop ratios indicate years in seedlings to years in cover crops.*

Other Areas Covered in Article

- Soil texture
- Mulches
- Cover Crops
- Soil Amendments
- Irrigation
- Causes of seedling mortality
- Disease & fungicides
- Problem weeds & cost of control
- Fumigation - chemical and cost
- Pesticide – chemical and cost
- Fertilization
- Root and top pruning