

2008

Area-wide Demonstration
of Methyl Bromide Alternatives:
Forest Nurseries in the Southern US

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Cooperators in Research

- Hendrix & Dail, Greenville, NC
- Steve Cantrell, South Carolina Forestry Commission, Trenton, SC
- Gary Nelson, Arborgen, Blenheim, SC
- USDA – ARS Area-Wide Pest Mgt Project for Methyl Bromide Alternatives – South Atl. Region

Trial Information

	Trenton, SC	Blenheim, SC
Fumigation	October 2, 2007	April 3, 2008
Fumigation type	Shank injected Broadcast/flat tarp	Shank injected Broadcast/flat tarp
Area in trial	5 acres	4 acres
Air temperature range	61 – 82°F	44 – 48°F
Wind speed	3 – 11 mph	5 – 11 mph
Soil moisture	5%	7%
Soil series	Wagram sand	Autryville sand
Plastic in place	10 days	7 days

2008 Fumigants

Fumigant	Rate	Components
MBr #1	400 lbs/acre	98% MBr + 2% Chloropicrin
MBr #2	235 lbs/acre	98% MBr + 2% Chloropicrin
Chloropicrin	300 lbs/acre	100% Chloropicrin
MBrC 70/30	400 lbs/acre	70% MBr (98/2) + 30% Solvent A
Chlor 60	400 lbs/acre	60% Chloropicrin + 40% 1,3-D
Pic+	300 lbs/acre	85% Chloropicrin + 15% Solvent A
DMDS + Chlor	74 gal/acre (731 lb/acre)	79% DMDS + 21% Chloropicrin
DMDS + Chlor	70 gal/acre (Blenheim, SC)	79% DMDS + 21% Chloropicrin

South Carolina Forestry Commission Taylor Nursery, Trenton, SC



5 acres

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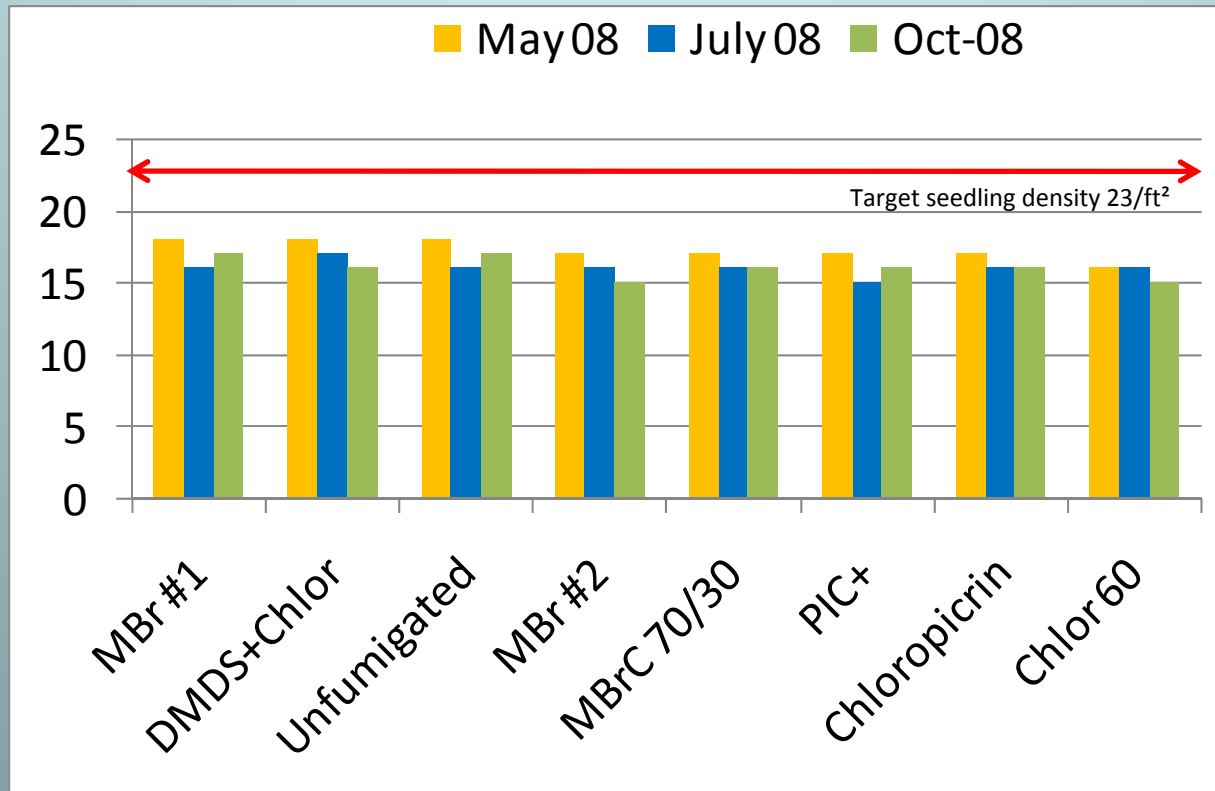
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Trenton, SC

	MBr #2 - 235 lbs/a	
	Chlor 60	
	Chloropicrin	
	PIC+	
	MBC 70/30	Rep 1
	MBr #1 - 400 lbs/a	
	DMDS	
	Untreated	
	Chloropicrin	
	MBr #1 - 400 lbs/a	
	MBr #2 - 235 lbs/a	
	PIC+	Rep 2
	DMDS	
	Untreated	
	Chlor 60	
	MBC 70/30	
	PIC+	
	DMDS	
	Chlor 60	
	MBr #1 - 400 lbs/a	
	MBr #2 - 235 lbs/a	Rep 3
	Untreated	
	Chloropicrin	
	MBC 70/30	
	MBr #1 - 400 lbs/a	
	Untreated	
	MBr #2 - 235 lbs/a	
	PIC+	
	MBC 70/30	Rep 4
	DMDS	
	Chloropicrin	
	Chlor 60	
	MBC 70/30	
	MBr #2 - 235 lbs/a	
	PIC+	
	MBr #1 - 400 lbs/a	Rep 5
	Untreated	
	Chlor 60	
	DMDS	
	Chloropicrin	

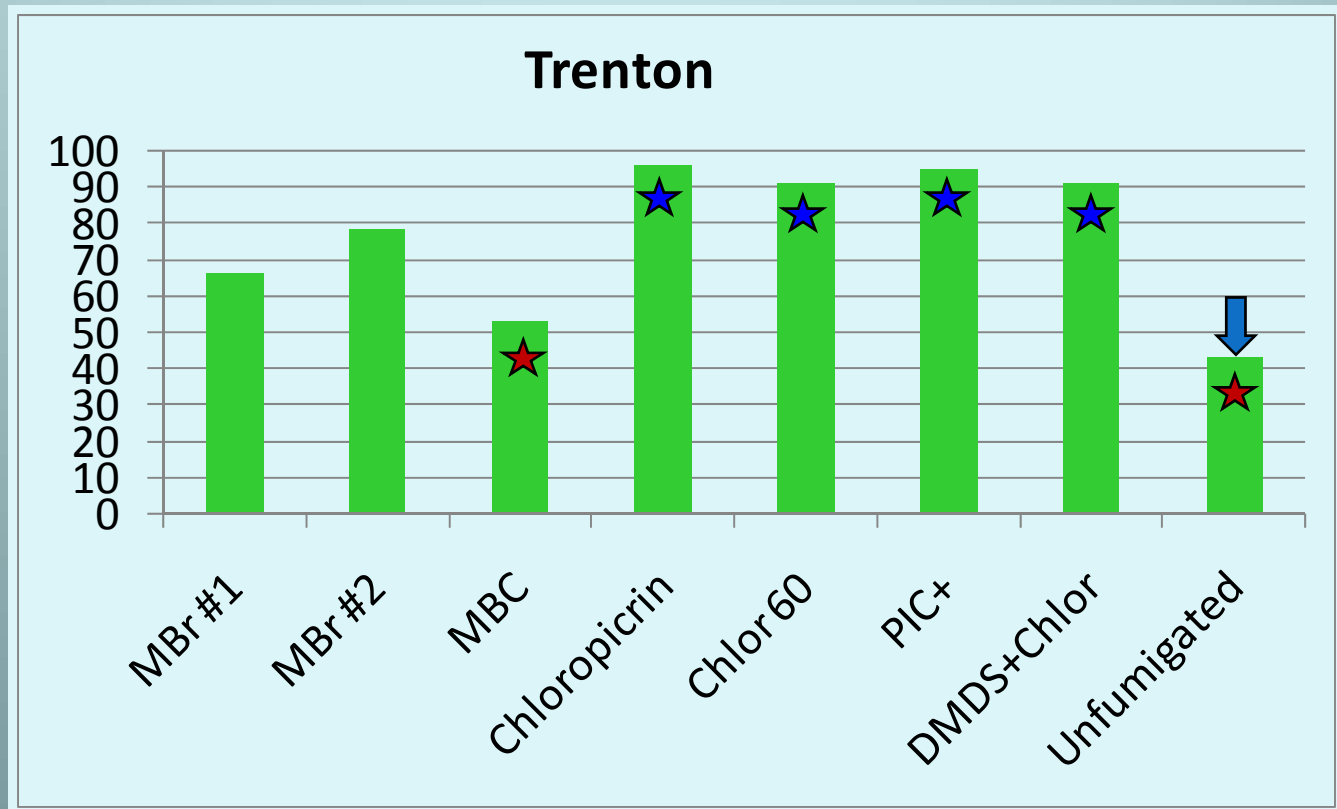
Seedling count

Trenton, SC



Percent Trichoderma

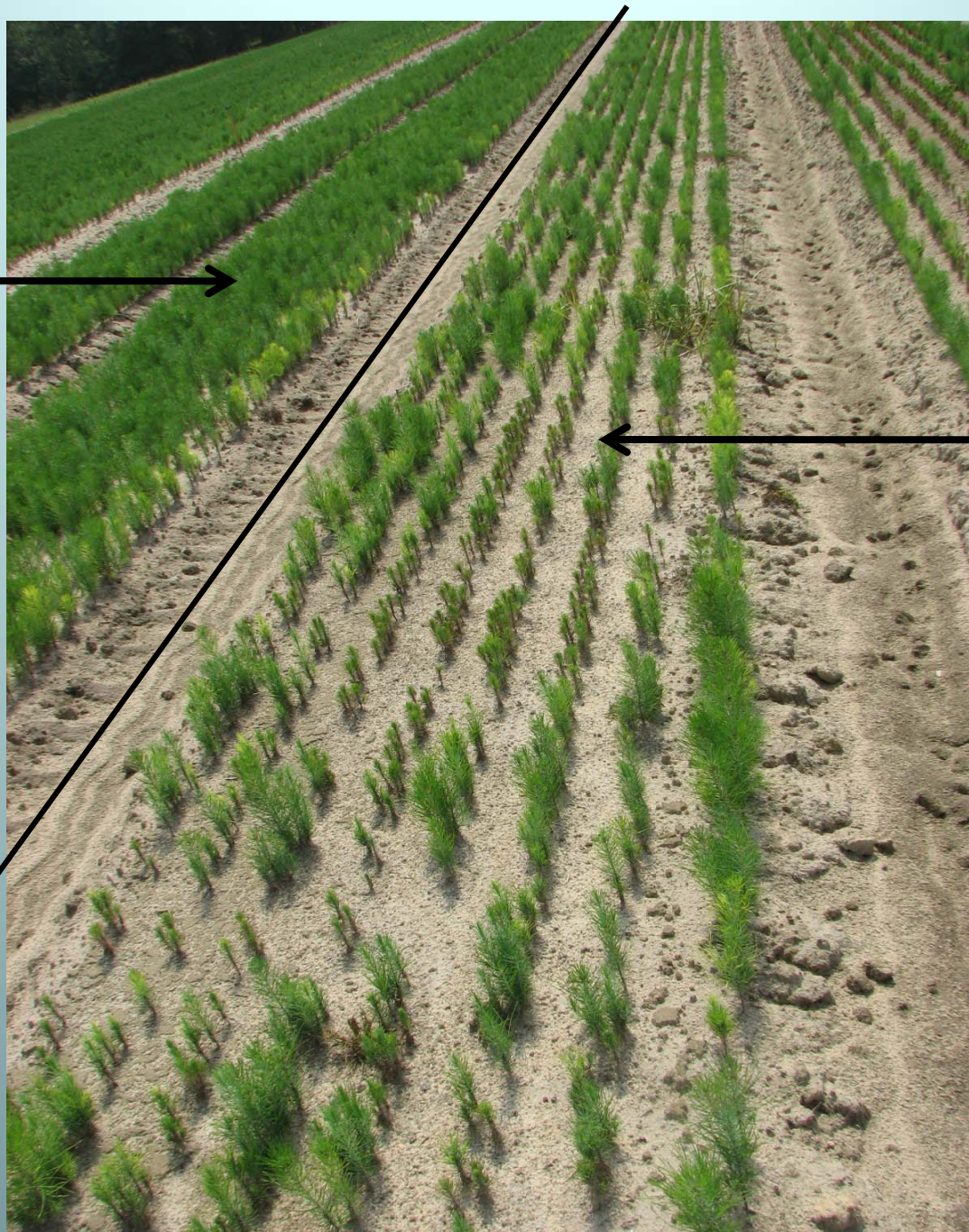
First year post fumigation



Fumigated

Control
Un-fumigated

Trenton, SC



Arborgen Nursery Blenheim, SC



4 acres

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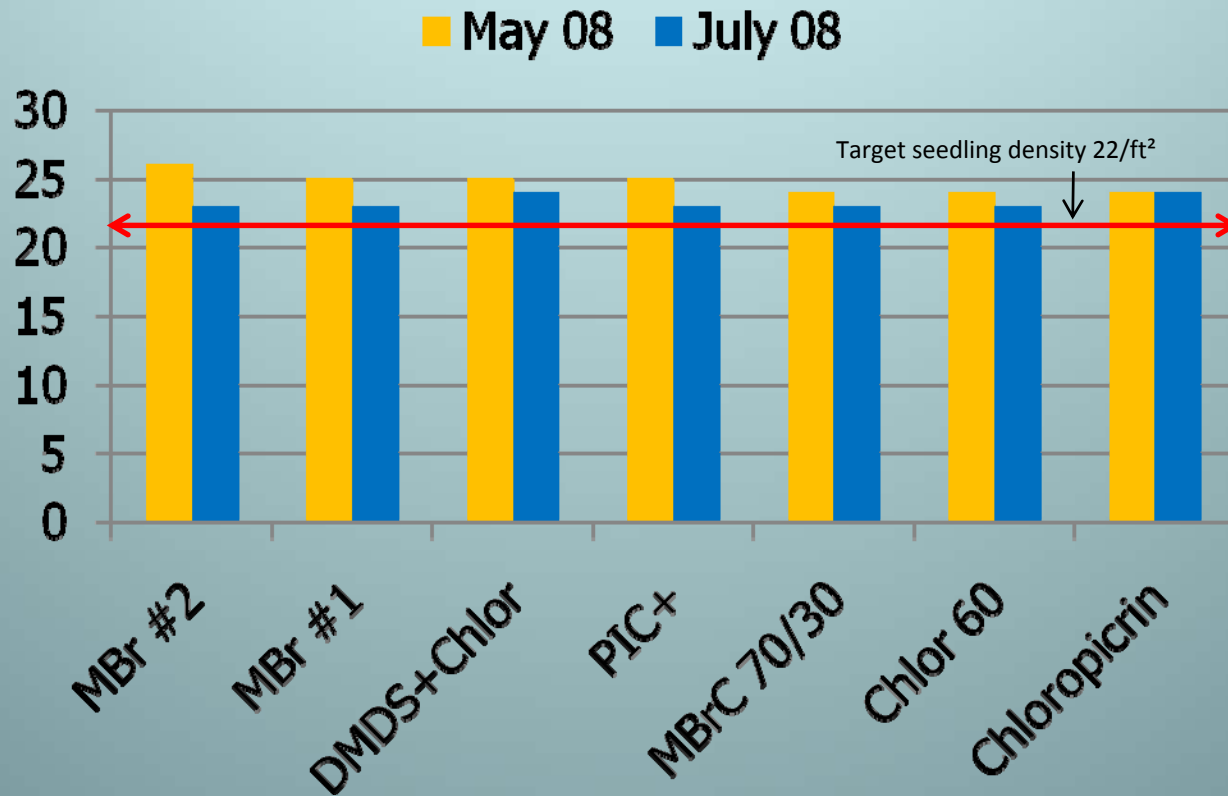
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Blenheim, SC

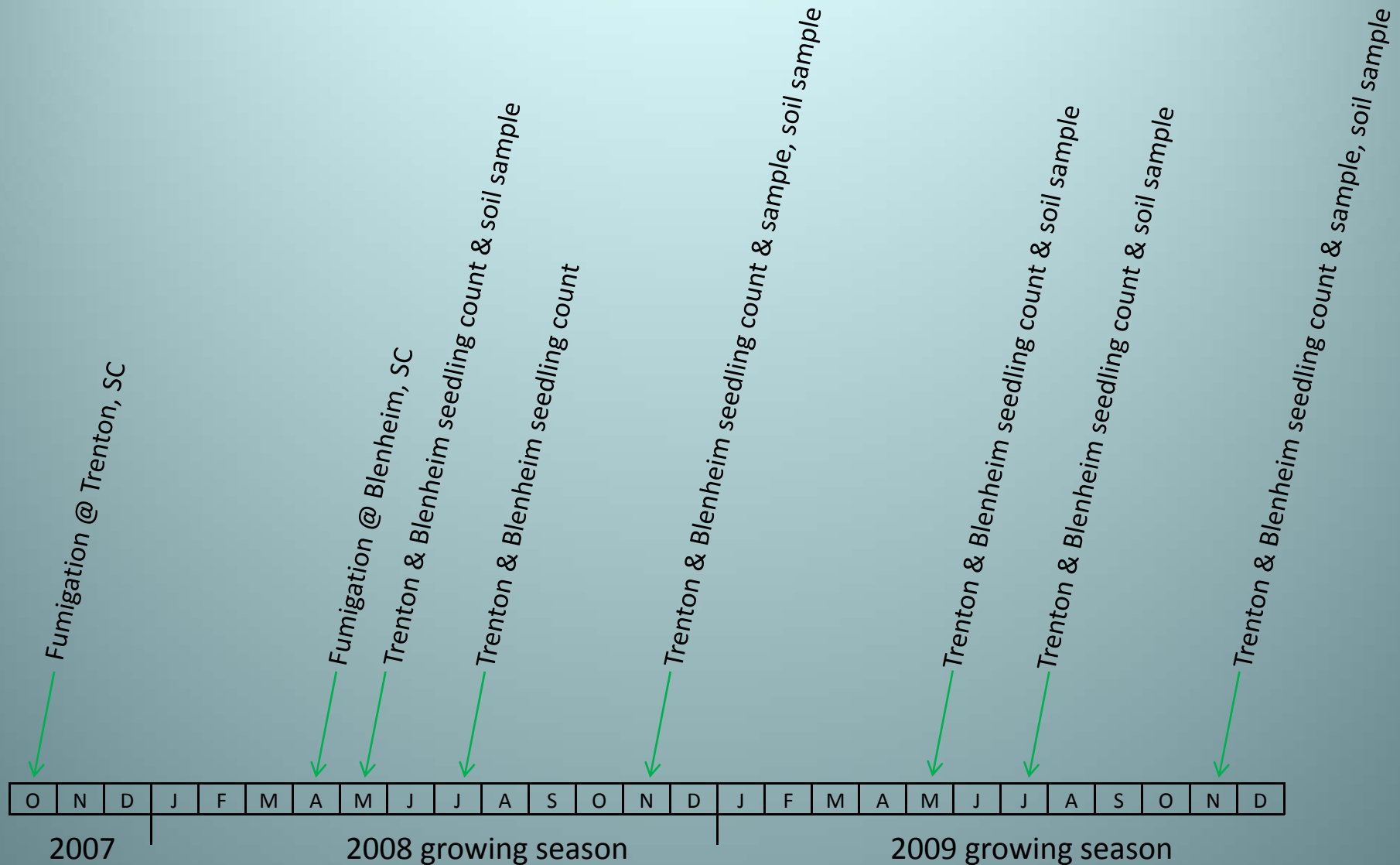
ROW		280		280		ROW	
Rep 2	5	MBr #1-400lb			Chloropicrin	5	Rep 3
	7	Chlor 60			MBr#1-400lb	7	
	3	Chloropicrin			PIC+	3	
	5	PIC+			DMDS	5	
	7	MBC 70/30			MBr#2-235lb	7	
	3	DMDS			Chlor 60	3	
	5	MBr #2-235lb			MBC 70/30	5	
Rep 1	7	PIC+			Chloropicrin	7	Rep 4
	3	DMDS			MBr#1-400lb	3	
	5	Chlor 60			PIC+	5	
	7	MBr #1-400lb			MBC 70/30	7	
	3	MBr #2-235lb			DMDS	3	
	5	Chloropicrin			Chlor 60	5	
	7	MBC 70/30			MBr#2-235lb	7	
		ROAD					

Seedling count

Blenheim, SC



Time Line of Area wide at Trenton & Blenheim, SC



2009 Area-wide work

Second growing season measurements at Blenheim and Trenton SC

Spring fumigation at Camden AL, (Elberta AL had fall fumigation 10/08)

First growing season measurements at Elberta and Camden, AL



Cooperators in Research for 2009

Steve Godbehere, Hendrix & Dail, Tifton, GA

Sam Campbell, Joshua Timberlands, Elberta, AL

Ralph Bower, Weyerhaeuser, Camden, AL

USDA-ARS Area-Wide Pest Mgt Project for Methyl
Bromide Alternatives – South Atl Region

Trial Information

	Elberta, AL	Camden, AL
Fumigation	October 22, 2008	
Fumigation type	Shank injected Broadcast/flat tarp	Shank injected Broadcast/flat tarp
Area in trial	4 acres	
Air temperature range	67 – 75°F	
Wind speed	3 – 12 mph	
Soil moisture		
Soil series	Eustis loamy fine sand Red Bay fine sandy loam	
Plastic in place	9 days	



4 acres

Joshua Timberlands,
Elberta, AL

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Pointer 30°27'11.27" N 87°31'11.21" W elev 59 ft Streaming ||||| 100%

Eye alt 5249 ft

Elberta, AL

north

county road

field road

office

Rep 1

west

Rep 2

field road

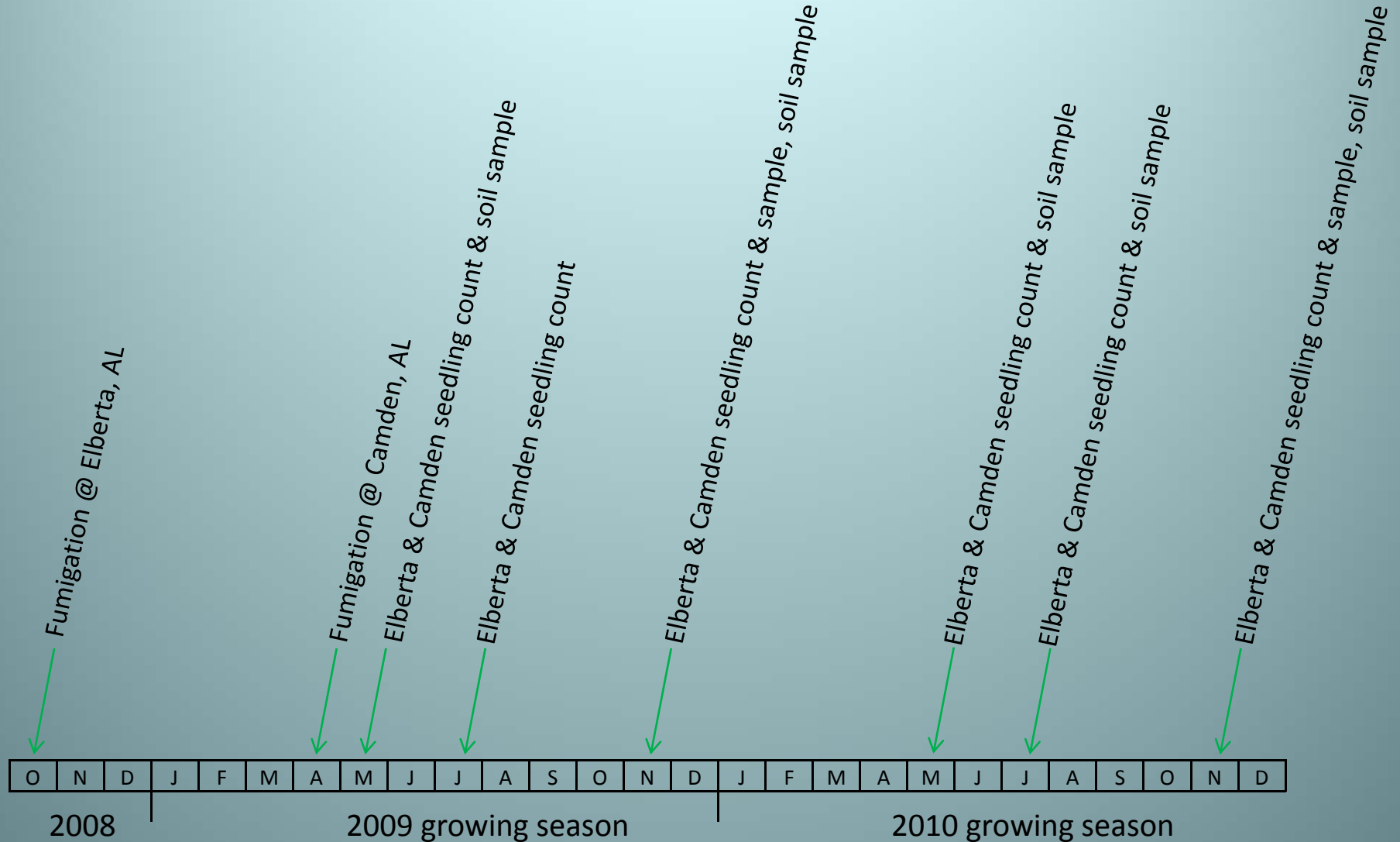
Rep 3

east

Rep 4

south

Time Line of Area wide at Elberta & Camden, AL



Data to collect 2009

Trenton, SC Blenheim, SC Elberta, AL Camden, AL	2009 Pre-sow	2009 Post-sow	2009 Summer	2009 Fall
Nematode	√	√	√	√
Trichoderma	√	√	√	√
Seedling count		√	√	√
Seedling quality				√
Weed quantification		√	√	
Root mass morphology				√

Red = 2nd year data **Blue** = 1st year data

