

# EVALUATION OF SOIL MOIST™ AND ZEBA™ AS NURSERY SOIL AMENDMENTS ON SEEDLING GROWTH AND SURVIVAL

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RESEARCH REPORT 08-06



Appreciation extended to:

Dean McCraw & Glennville Rayonier  
Nursery Staff

Ken Woody Plum Creek Jesup, GA Nursery

# Why have this study?

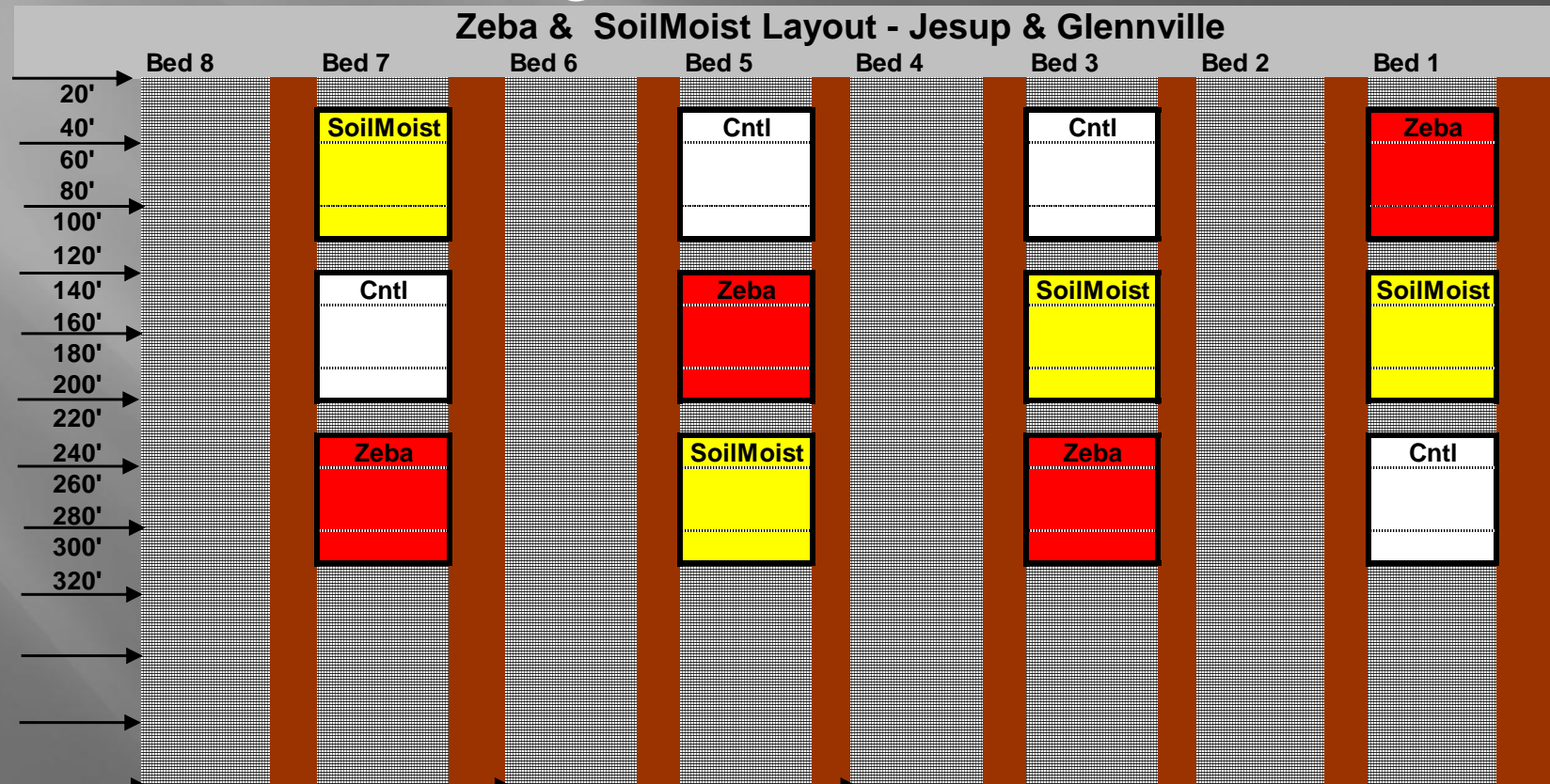
- ▣ Product information for both Soil Moist<sup>TM</sup> and Zeba<sup>TM</sup> states that once the product has absorbed water in the soil, it is available to be released back to the plant in times of drought.
- ▣ There are numerous “success” stories in the literature in which applying these compounds
- ▣ In the soil has resulted in increase survival, plant quality.

# Study Details

- ▣ Study at Glennville & Jesup Nurseries on 1<sup>st</sup> year ground.
- ▣ Soil Moist (JRM Chemical Inc) a synthetic acrylic polyacrylamide.
- ▣ Zeba (Absorbent Technologies, Inc.) a hydrolyzed starch based polymer.
- ▣ Applied with a Gandy<sup>®</sup> cam gauge row applicator attached to a nursery tractor just before final bed formation and sowing.
- ▣ Application rate based upon manufacturer.
  - Soil Moist – 5 lb/1000 sq ft
  - Zeba – 1 lb /1000 sq ft

# Study Details

- Set up as a RCB design with 4 replications. Each trt 40' long.



# Study Details

- ▣ All data was collected from the middle 20' of each treatment.
- ▣ 4 subplots/trt/rep









Soil Moist

Zeba





July 2008





July 2008





July 2008





# Sampling Schedule

No. of Weeks Post-Sowing	Seedling Density	RCD	Height	Root/Shoot Biomass	Soil Bulk Density	Root Morph.
<b>5</b>	Yes	Yes	Yes	Yes	Yes	No
<b>15</b>	Yes	Yes	Yes	Yes	Yes	No
<b>28</b>	Yes	Yes	Yes	Yes	Yes	Yes

Table 2. Seedling quality and soil data at Glennville, GA.

				Dry Weight (gm)			Root Morphology			Seedling Grade (#/sq ft)		
TRT	Seedling Density (Sq ft)	RCD (mm)	HT (cm)	Root	Shoot	Bulk Density (g/cm <sup>3</sup> )	Length (cm)	Surface Area (cm <sup>2</sup> )	# of Tips	1	2	Culls
Control	19.3	5.4	32.4	0.82	5.33	1.66	389.7	136	889.9	13.5	5.2	0.6
Soil Moist	16.6	5.5	31.4	0.94	5.97	1.66	402.1	145.1	936.3	12	4.3	0.3
Zeba	15.9	5.8	31	0.99	6.49	1.67	402.2	136	926.8	12.4	3.3	0.2
lsd <sub>0.05</sub>	4.32	0.44	1.49	0.17	0.95	0.05	46.3	20.9	126.7			

Table 3. Seedling quality and soil data at Jesup, GA.

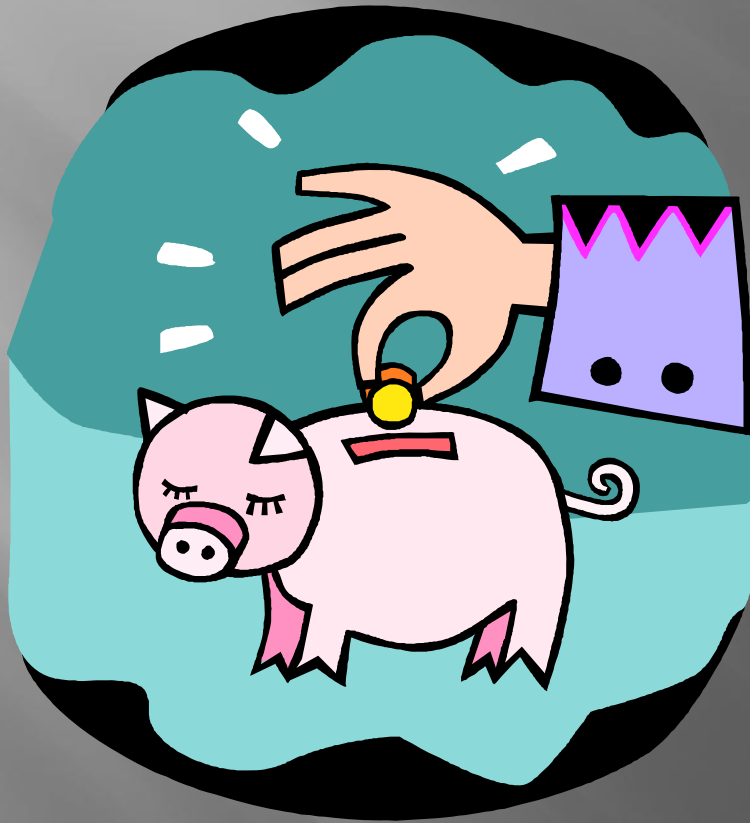
				Dry Weight (gm)			Root Morphology			Seedling Grade (#/sq ft)		
TRT	Seedling Density (Sq ft)	RCD (mm)	HT (cm)	Root	Shoot	Bulk Density (g/cm <sup>3</sup> )	Length (cm)	Surface Area (cm) <sup>2</sup>	# of Tips	1	2	Culls
Control	21.8	4.3	31.5	0.48	3.17	1.39	269.8	68.2	705.1	3.9	17.7	0.2
Soil Moist	20.3	4.4	31.8	0.55	3.3	1.39	250.5	66.9	650.6	5.1	15	0.2
Zeba	20.7	4.2	31.5	0.51	3.13	1.42	274.5	68.6	727.8	3.5	16.6	0.6
lsd <sub>0.05</sub>	2.2	0.2	0.7	0.04	0.24	0.04	26.4	6.8	79.1			



# Product Cost

- ▣ Soil Moist – \$4/lb = @ study rate = \$870/acre
- ▣ Zeba - \$9/lb = @ study rate = \$390/acre

# Summary



Save  
Your  
Money



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