



# Pecan Management

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# What's the Best Way to Fertilize Pecans with Nitrogen?

- Apply 75-125 lbs N
- Inject liquid N
  - 3 applications beginning in April (10 day intervals)
  - 1 application in June
    - 1 application in late August/early September if heavy crop
  - No more than 25 lbs N/acre/injection
- Direct broadcast applications toward herbicide strip
  - Base total acreage applied % orchard coverage, not on total size of orchard
  - Use rate of 75-125 lbs/acre on treated area only
- Eliminate late season applications of N with:
  - Poultry Litter Application in Feb/March or
  - Establishment of good clover stand for 3 yrs

# Fertigation of Young Trees

1st year trees: 'Cunard' on Orangeburg soil

Treatment	Caliper Growth (mm)	Leaf N
Fertigation (6.16 units N/acre)X4	5.4a	2.63a
10-10-10 (1 lb/tree)	6.5a	2.61a
Granular N (0.36 lbs/tree)X4*	7.6a	2.76a
Control (No N applied)	6.7a	2.63a

## Fertilizer N materials;

Fertigation treatments =UAN (28%) (total of 0.84 lbs N per tree)

Granular N treatment=Urea (46%) (total of 0.84 lbs N/tree)

\*Last granular application received 0.72 lbs material/tree to reach total of 0.84 lbs N/tree

All fertigation and granular N treatments received P-K through irrigation system in April via 10.5 gal/acre of 1-6-13

## Fertilizer Application Dates:

10-10-10: May 9

Fertigation & Granular N: May 9; June 28, July 12; August 6

# Fertigation of Young Trees

2nd year trees: 'Cape Fear' on Red Bay soil

Treatment	Caliper Growth (mm)	Leaf N
Fertigation (12.32 units N/acre) X4	17.4ab	2.72ab
Fertigation (6.16 units N/acre) X4	21.1a	2.74a
10-10-10 (1 lb/tree) X3	19.7ab	2.72ab
Granular N (0.36 lbs/tree)X5	14.8b	2.56bc
Control (No N applied)	16.2ab	2.50c

## Fertilizer N materials:

Fertigation treatments =UAN (28%)

total of 1.68 lbs N/tree and 0.84 lbs N per tree for high and low rates

Granular N treatment=Urea (46%) (total of 0.84 lbs N/tree)

All fertigation and granular N treatments received P-K through irrigation system in April via 10.5 gal/acre of 1-6-13

## Fertilizer Application Dates:

10-10-10: April 23, June 28, July 12

Fertigation : April 23, June 28, July 12, August 6

Granular N: April 23, May 23, June 28, July 12, August 6

# Banding Zn, P, and K



- Band Zn @4-5 **lbs/tree**
- Band K at 8 **lbs/tree**
- Band P at 100-120 **lbs/acre**
- Make applications over drip emitters or in wet zone of microsprinklers



- Band Zn on opposite side of tree from P and K

*Banding is a useful tool when uptake is a problem*

# Foliar Sulfur Trial

2011	Percent Kernel	Nut Weight	Count
Sulfur 1 qt/100 g	50.7a	9.7a	47.0b
Urea 4 lbs/100g	50.2a	9.2b	49.2a
Sulfur+Urea	50.2a	9.5ab	47.6b
Untreated	50.6a	9.2b	49.2a

2012	Percent Kernel	Nut Weight	Count
Sulfur 1 qt/100 g	52.7a	11.2a	40.8b
Urea 4 lbs/100g	52.4a	9.9b	46.3a
Sulfur+Urea	53.1a	10.2ab	44.4ab
Untreated	52.9a	10.4ab	43.7ab

2013	Percent Kernel	Nut Weight	Count
Sulfur 1 qt/100 g	51.4a	9.1a	49.8b
Urea 4 lbs/100g	53.3a	8.6ab	53ab
Sulfur+Urea	56.4a	8.6ab	53ab
Untreated	53.9a	8.4b	54.3b



# Effect of Sulfur on Pecan Scab

2013	Scab Incidence	Scab Severity
Sulfur 1 qt/100 g	99a	17.8a
Urea 4 lbs/100g	99a	9.3ab
Sulfur+Urea	100a	15.8ab
Untreated	100a	19.5a

- Sulfur increases nut size but has no effect on scab
- 3 applications during nut sizing (June/July)

# Irrigation Schedule Recommendations (gallons per tree)

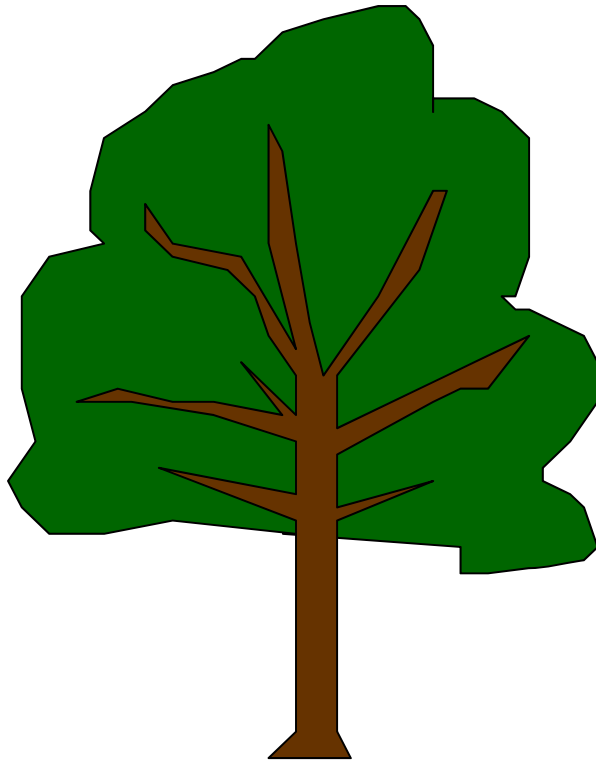
	<b>New</b>		<b>Old</b>	
April	<b>1800</b>	<b>(60 gal/day)</b>	6750	(225 gal/day)
May	<b>2880</b>	<b>(93 gal/day)</b>	7905	(255 gal/day)
June	<b>3600</b>	<b>(120 gal/day)</b>	8550	(285 gal/day)
July	<b>4500</b>	<b>(145 gal/day)</b>	10,230	(330 gal/day)
August	<b>11,160</b>	<b>(360 gal/day)</b>	11,160	(360 gal/day)
September	<b>10,800</b>	<b>(360 gal/day)</b>	10,800	(360 gal/day)
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Total	34740		55,395	
Average Per Day	189		303	

The Reduced Irrigation Schedule provides a **38% Reduction** in irrigation water use with no significant effect on tree water stress, **yield, or quality**



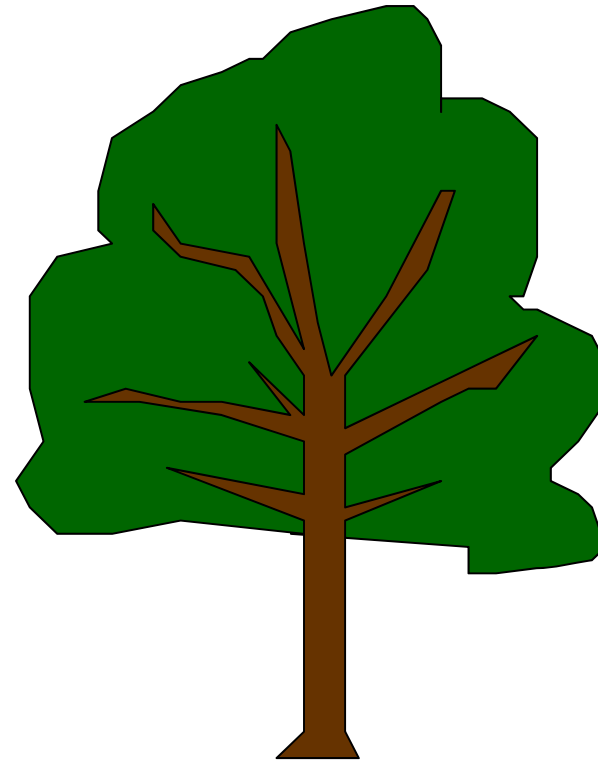
# Effect of Sunlight and Air Movement on Yield---2012

OPEN



Sunlight=1843 lum/ft<sup>2</sup>  
Yield=137.4 lbs/Tree

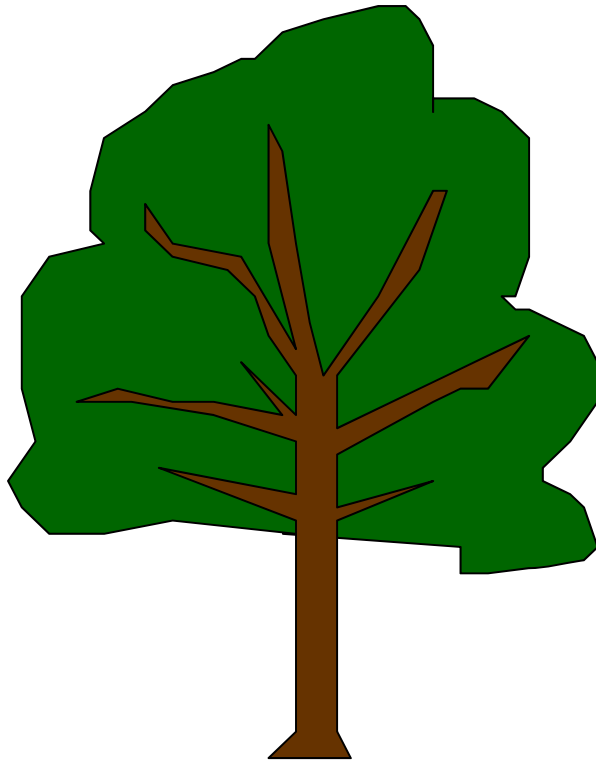
CROWDED



Sunlight=1005 lum/ft<sup>2</sup>  
Yield=93.6 lbs/Tree

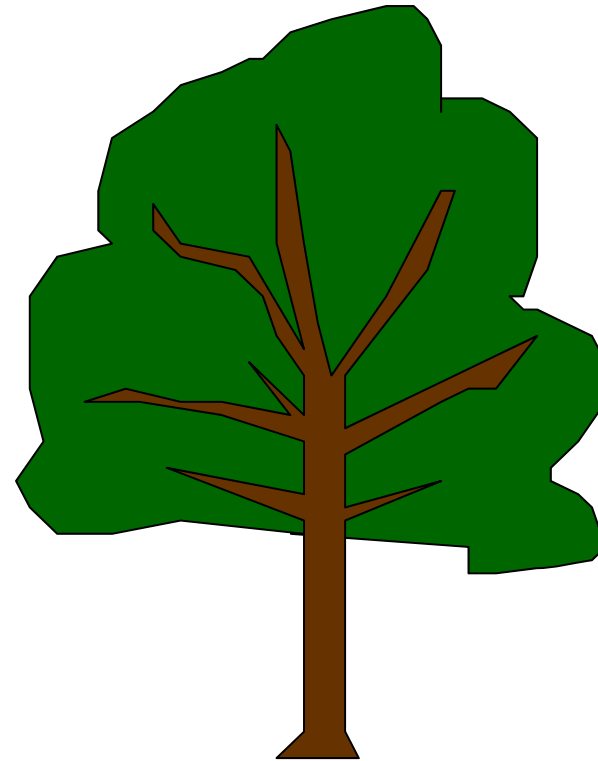
# Effect of Sunlight and Air Movement on Yield---2013

OPEN



Sunlight=1176  
Yield=110.6/tree

CROWDED



Sunlight=996  
Yield=68 lbs/tree

# How Will 2013 Affect 2014?

- Comments from 2003:
  - “We put more time, effort, sprays, chemicals, and money into this crop than we ever have.”
  - “This has been the most difficult year for working pecans I have ever seen.”
- June-September Rainfall---2003:
  - 29.52”
  - 59 Rainy Days
- June-September Rainfall---2013:
  - 30.93”
  - 62 Rainy Days
- Cloudy Conditions
- Aphid and Mite Pressure Heavy Late Season

# How Will 2013 Affect 2014?

- 2003 Pecan Crop: 75 million
- 2004 Pecan Crop: 45 million
- 2013 Pecan Crop: 60 million or less

- But:

Trees attempted a fairly good crop  
Heavy Disease/Insect Pressure  
Cloudy Conditions

Chance for good  
return  
crop

If Yields fair to good with good quality or  
Trees never set crop

Poor return  
crop potential

If Crop lost after August or Poor Quality=Stressed Trees