



Management of Young Pecan Trees

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Keys to Young Tree Growth

- In order to get optimal tree growth of newly established orchards:
 - Nutritional Management
 - How much?
 - What method?
 - What to apply?
 - Irrigation
 - How much water do young trees need?
 - What is the best method of irrigation for young trees?
 - Weed Control
 - What herbicides are safe to use?

Is There An Advantage To Fertigation?



Fertigation of Young Trees

1st year trees: 'Cunard' on Norfolk loamy sand

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)

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: 'Cunard' on Norfolk loamy sand

Treatment	Caliper Growth (mm)	Leaf N
Fertigation (6.16 units N/acre)X4	11a	2.88ab
10-10-10 (1 lb/tree)X2	12.9a	3.14a
Granular N (0.36 lbs/tree)X4*	12.1a	3.07a
Control (No N applied)	10.1a	2.70b

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)

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 25 & June 29

Fertigation & Granular N: April 25; May 28, June 29, July 29

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

Fertigation of Young Trees

3rd year trees: 'Cape Fear' on Red Bay soil

Treatment	Caliper Growth (mm)	Leaf N
Fertigation (12.32 units N/acre) X4	18.8a	2.90ab
Fertigation (6.16 units N/acre) X4	18.6a	3.17a
10-10-10 (1 lb/tree) X3	19.8a	2.86ab
Granular N (0.36 lbs/tree)X5	17.5a	2.84b
Control (No N applied)	15.5a	2.91ab

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 21, May 27, June 18

Fertigation & Granular N : April 25, May 28, June 29, July 29

Fertilization Recommendations for Young Trees

• Focus on P,K, Zn---not N!

Rate of 10-10-10/per tree

Year	April	June
1	0	0.5-1 lb
2	1-2 lbs	1-2 lbs
3	2-3 lbs	2-3 lbs
4	3-4 lbs	3-4 lbs

- Apply Zinc Sulfate at 1-3lb per tree for the 1st 3-4 yrs
- 2-3 sprays foliar Zn if deficiency symptoms show
- Mouse Ear Trees:
 - Apply Ni at rate of 1.5 qts/100 gallons

If You Fertigate

Amount of N/acre

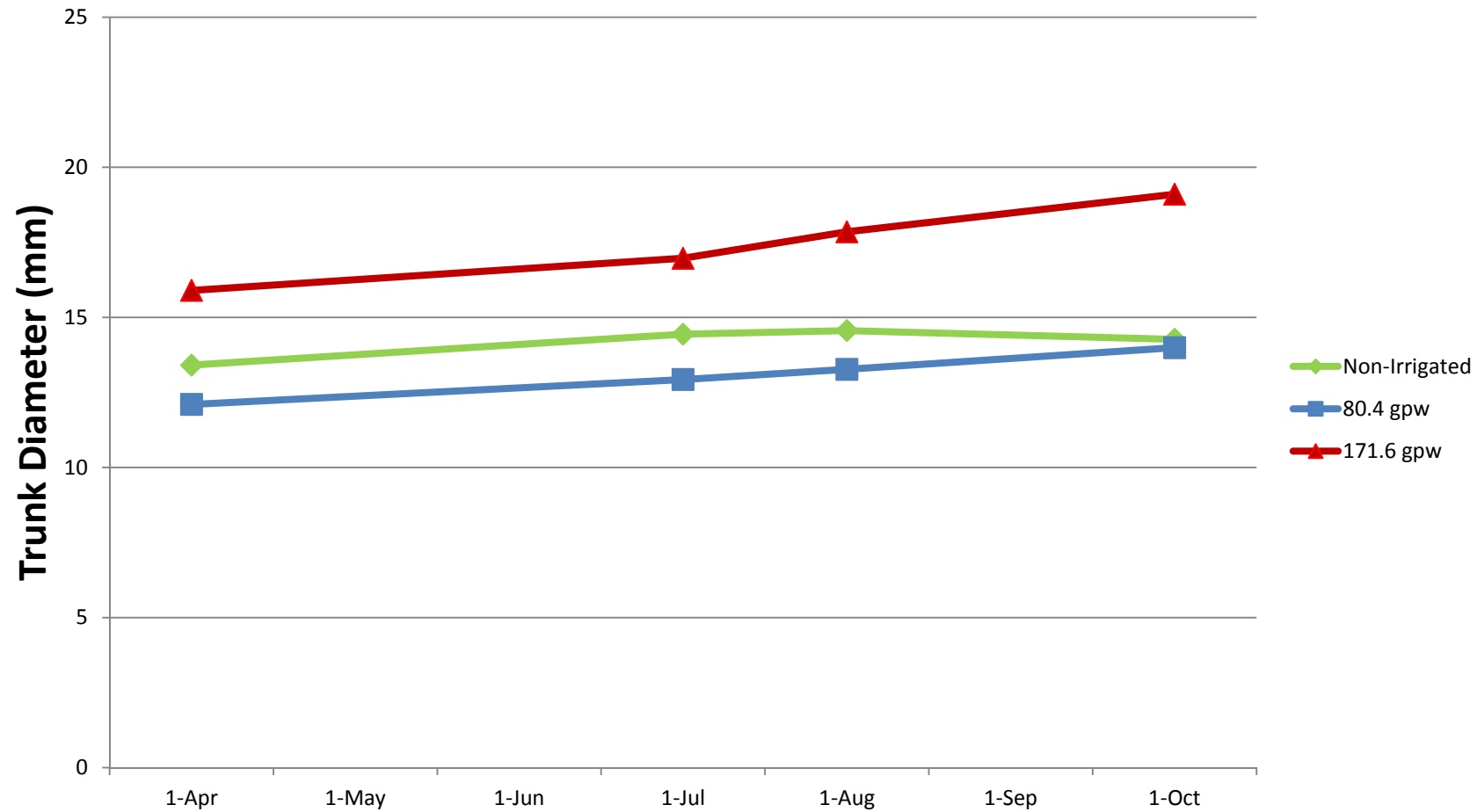
Year	April	May	June
1	0	0	5 lbs N
2-4	5 lbs	5 lbs	5 lbs

- Apply granular P,K, Zn over the tree row in March or April of years 1 and 2
 - 40 lbs P
 - 40 lbs K
 - 25 lbs Zn Sulfate

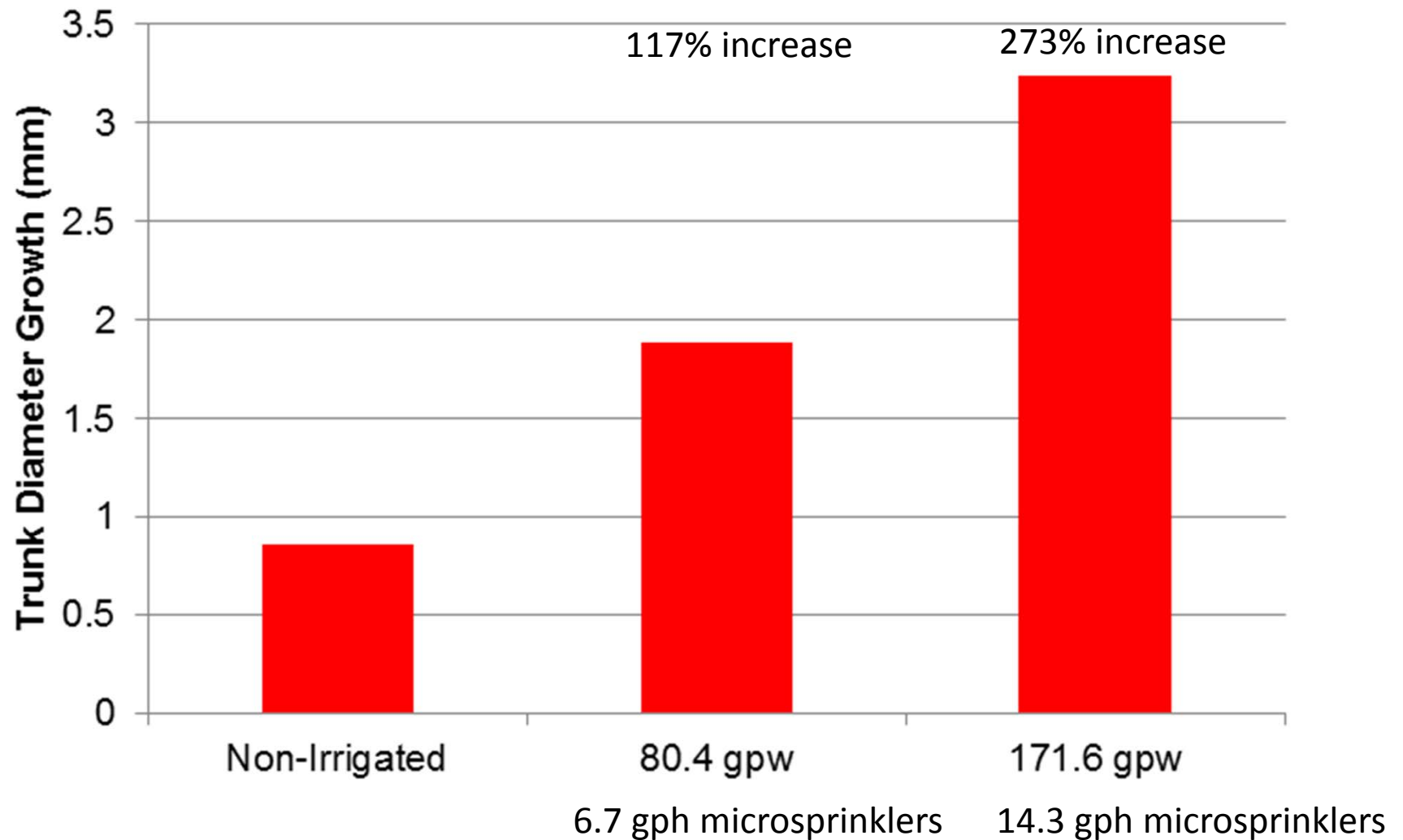
How Much Water Do Young Trees Need?



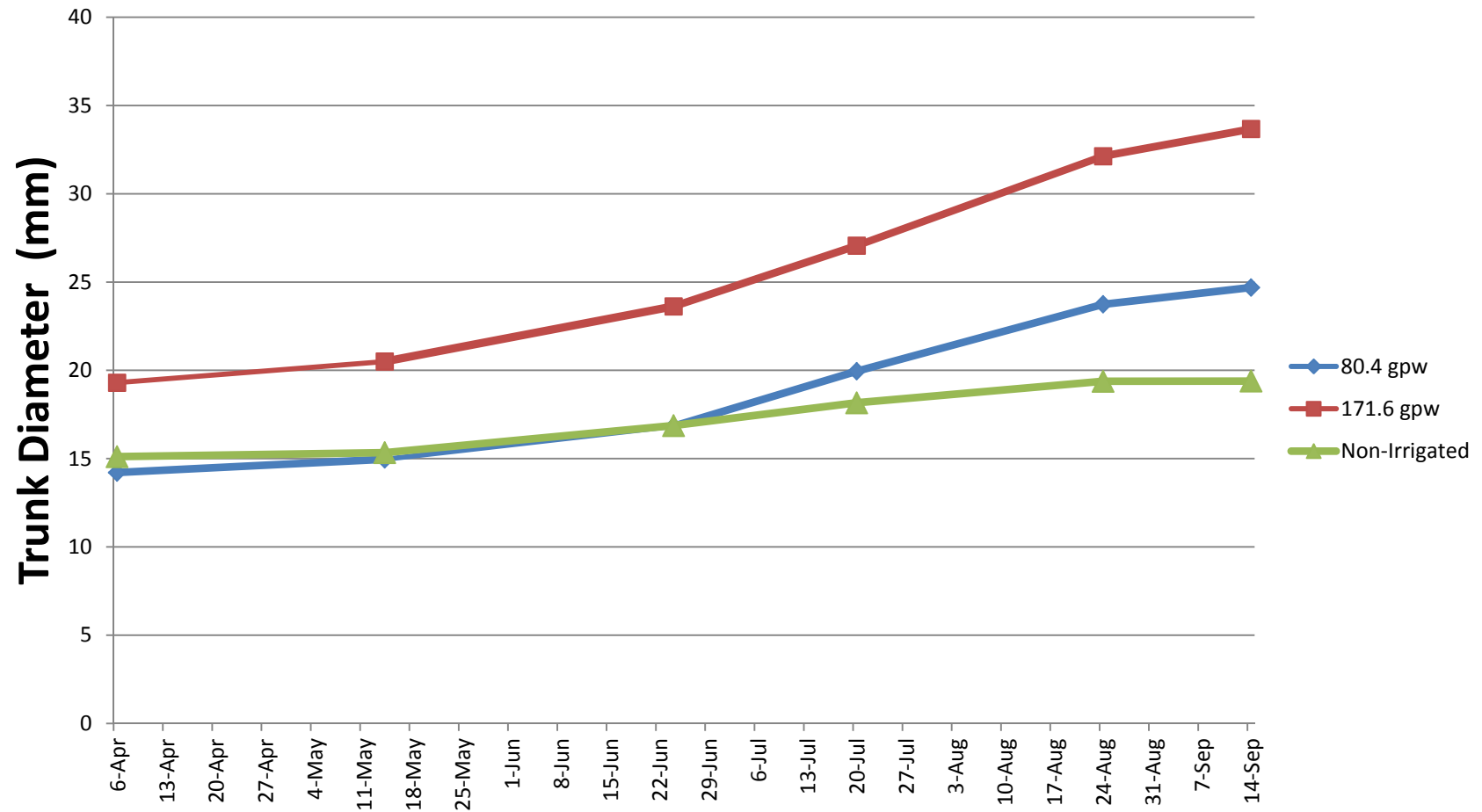
Young Tree Irrigation---Year 1



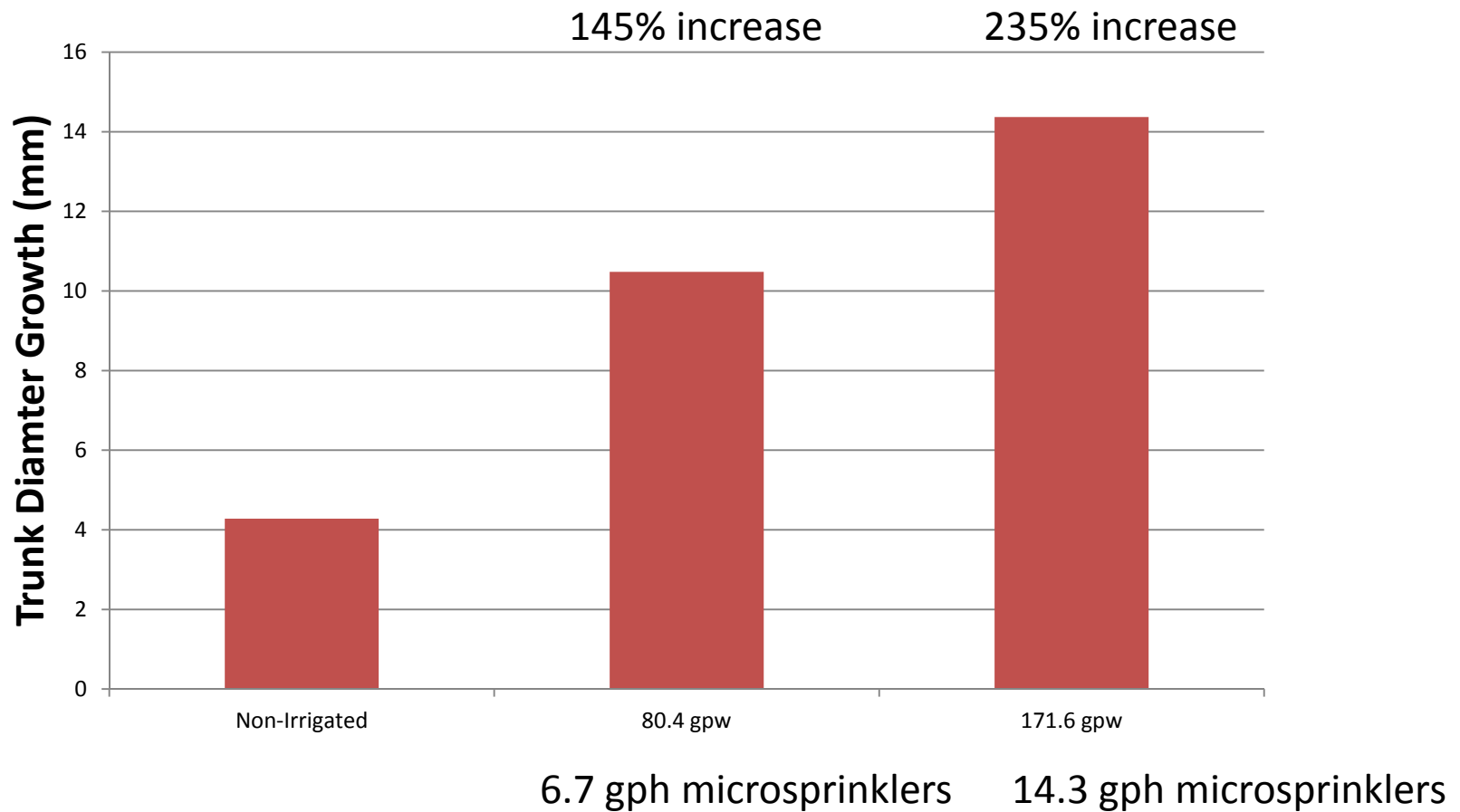
Young Tree Irrigation---Year 1



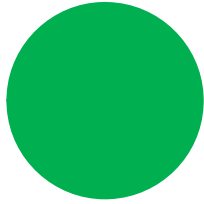
Young Tree Irrigation---Year 2



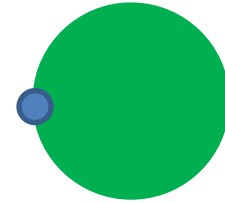
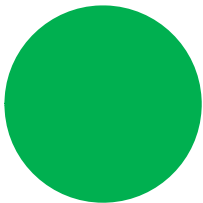
Young Tree Irrigation---Year 2



Drip vs Microsprinkler



14.3 gph microsprinkler
172 gpw

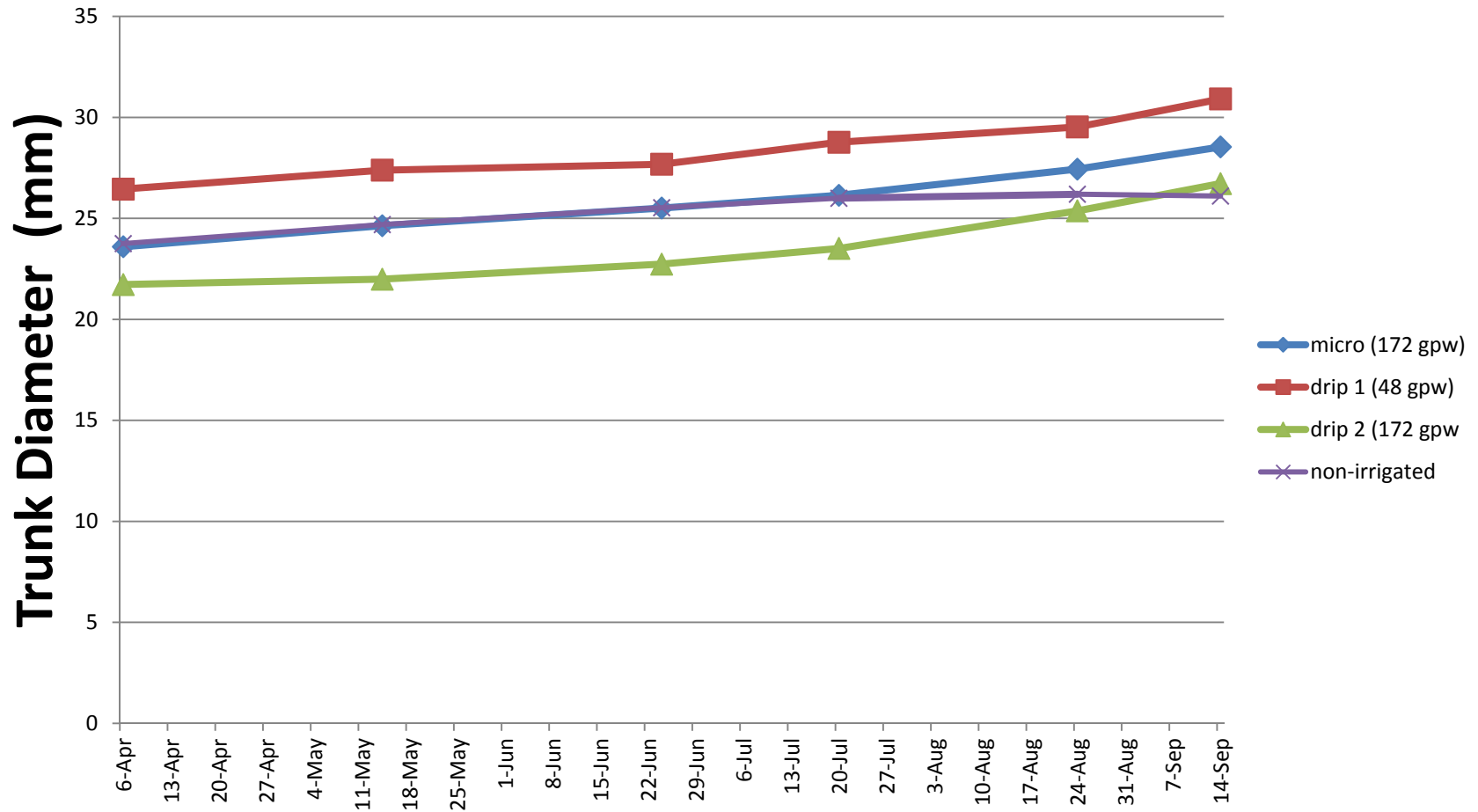


Two 2 gph drip emitters
48 gpw



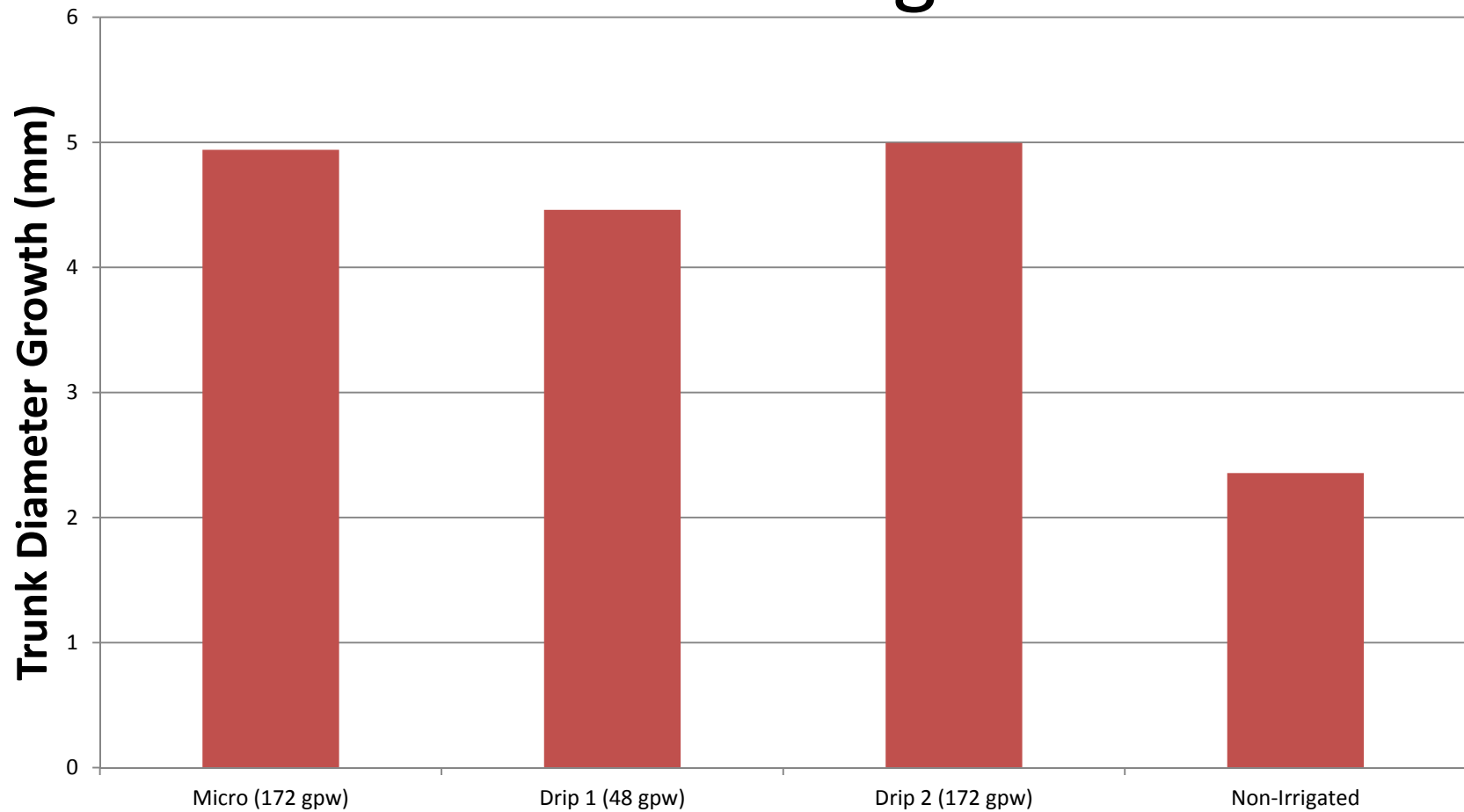
Eight 2 gallon per hour drip emitters
~172 gpw

Drip vs Microsprinkler Year 1---Seasonal Growth

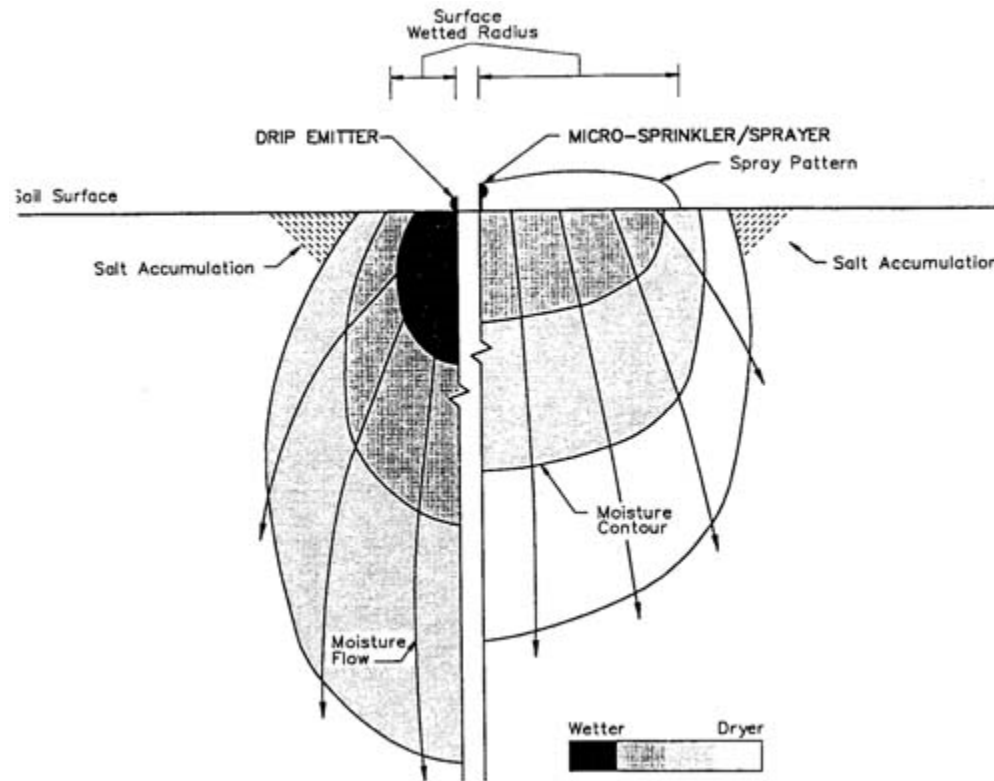


Drip Vs Microsprinkler

Desirable---1st year trunk diameter growth



Pattern of Moisture Spread For Drip vs Microsprinkler



Spreading water over larger soil surface areas is particularly advantageous on coarse, sandy soils (where water from a drip emitter moves very little laterally) and on fine-textured clay soils (where water from a drip emitter may puddle on the surface).

What Herbicides are Safe to Use Around Young Trees?

- Postmergence:
 - Glyphosate, Paraquat, or Glufosinate ---burndown
 - Sandea---nutsedge, pigweed, wild radish
 - Aim---pigweed/morning glory
 - Venue---wild radish, pigweed, morning glory
 - Basagran—some broadleafs and yellow nutsedge
 - Poast---annual and perennial grasses
 - Select---annual/perennial grasses
 - Fusilade---annual/perennial grasses
- Pre-emergence:
 - Surflan
 - Prowl
 - Chateau
 - Alion can be used after year 3.
 - Simazine can be used after year 2
 - Diuron can be used after year 3 (avoid on sandy soils)



Leaf Scorch of Young Pecan Trees

- Primarily a problem of poor root establishment
- Limitations to root growth
 - Wet spring
 - Wet/Dry extremes
 - Poor soil
 - Water-logged
 - Planting immed. behind pine trees
 - Hard Pan/High water table
- Fertilization



Ambrosia Beetle

- Attacks most prevalent in the spring, on young trees
- Traditional barrier sprays not very effective
- Beetles fly usually in March, but sometimes in Feb
 - Years of data from nurseries provide no predictive value
- Traps can detect the start of the flight



Wood Bolt Trap

- Bolt of green hardwood 2"-3" dia.
- Bore a ½" hole down the center and fill with ethanol
- Cork it, and hang around the orchard border
- Watch for toothpicks



Ambrosia Beetle Treatment

- Once the flight starts pyrethroids provide short-term protection
- If attacks are detected trunk sprays must be applied quickly to save the tree
- Once the trees have leafed out completely, the danger is (usually) much lower



Questions?

