**Introduction to Section 16 (16b – Irrigation Water, Soil & Plant Tissue Analysis for Pecan)**

**Water Quality Analysis**

**Pounds per Acre:**
- Nitrate-N = 12.2
- Potassium = 89.5
- Sulfate-S = 490.0
- Calcium = 591.0
- Magnesium = 146.2
- Sodium = 592.0
- Chloride = 783.0
- Bicarbonate = 1,911.4
- Carbonate = 26.1
- Iron = 9.3
- Mn = 0.22
- B = 1.31

Total Salts = 5,640.2

ECiw = 0.81 mmhos/cm

SAR = 1.71

pH = 7.9

Conventional Irrigation (soil salinity typically concentrates about 1.5 times the water EC)

**Leaching Fraction (LF) = 0.3086/Fc^{1.702} (LF = 7.2%)**

Fc = ECe(ct)/ECiw (i.e., ECe(ct) = 1.9 & ECiw = 0.81); Fc = 2.35

**Soil Analysis:**
- Organic Matter = 0.6% (Low)
- Nitrogen Mineralized = 12.0 lbs./ac.
- Nitrate-N = 8.55 lbs./ac. (Low)
- Phosphorus = 5.0 ppm (Low)
- Potassium = 122.0 ppm (Low)
- Sulfate-S = 20.7 ppm (Adequate)
- Calcium = 2,948.0 ppm (High)
- Magnesium = 187.0 ppm (Low)
- Zn = 0.4 ppm (Low)
- Iron = 4.6 ppm (Low)
- Mn = 4.2 ppm (Low)
- Cu = 0.6 ppm (Adequate)
- B = 0.4 ppm (Low)
- Sodium = 2.6% of total CEC (Satisfactory)

Area yield is about 2,300 lbs./ac.

**Pecan Plant Tissue Analysis:**
- N = 2.66% **Optimum**: Sufficiency Range: 2.49 – 2.8%
- P = 0.12% **Optimum**: Sufficiency Range: 0.11 - 0.3%
- K = 0.95% **Optimum**: Sufficiency Range: 0.74 - 1.25%
- S = 0.22% **Optimum**: Sufficiency Range: 0.19 - 0.4%
- Ca = 1.21% **Optimum**: Sufficiency Range: 0.89 – 1.5%
- Mg = 0.31% **Optimum**: Sufficiency Range: 0.29 - 0.6%
- Zn = 58.22 ppm **Optimum**: Sufficiency Range: 49 – 100 ppm
- Fe = 135 ppm **Optimum**: Sufficiency Range: 49 – 300 ppm
- Mn = 58.1 ppm **Low**: Sufficiency Range: 99 - 800 ppm
- Cu = 5.8 ppm **Low**: Sufficiency Range: 9 – 30 ppm
- B = 105.4 ppm **High**: Sufficiency Range: 29 – 45 ppm
- Na = 0.02% **Optimum**: Sufficiency Range: 0 – 0.1%

- Sample at Midseason
- Sample midshoot leaflets/leaves
- Sample #: 25 – 60

**Silty Clay**

- pH = 8.7 (Problem with pH; i.e. nutrient availability)


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