# Soil Compaction


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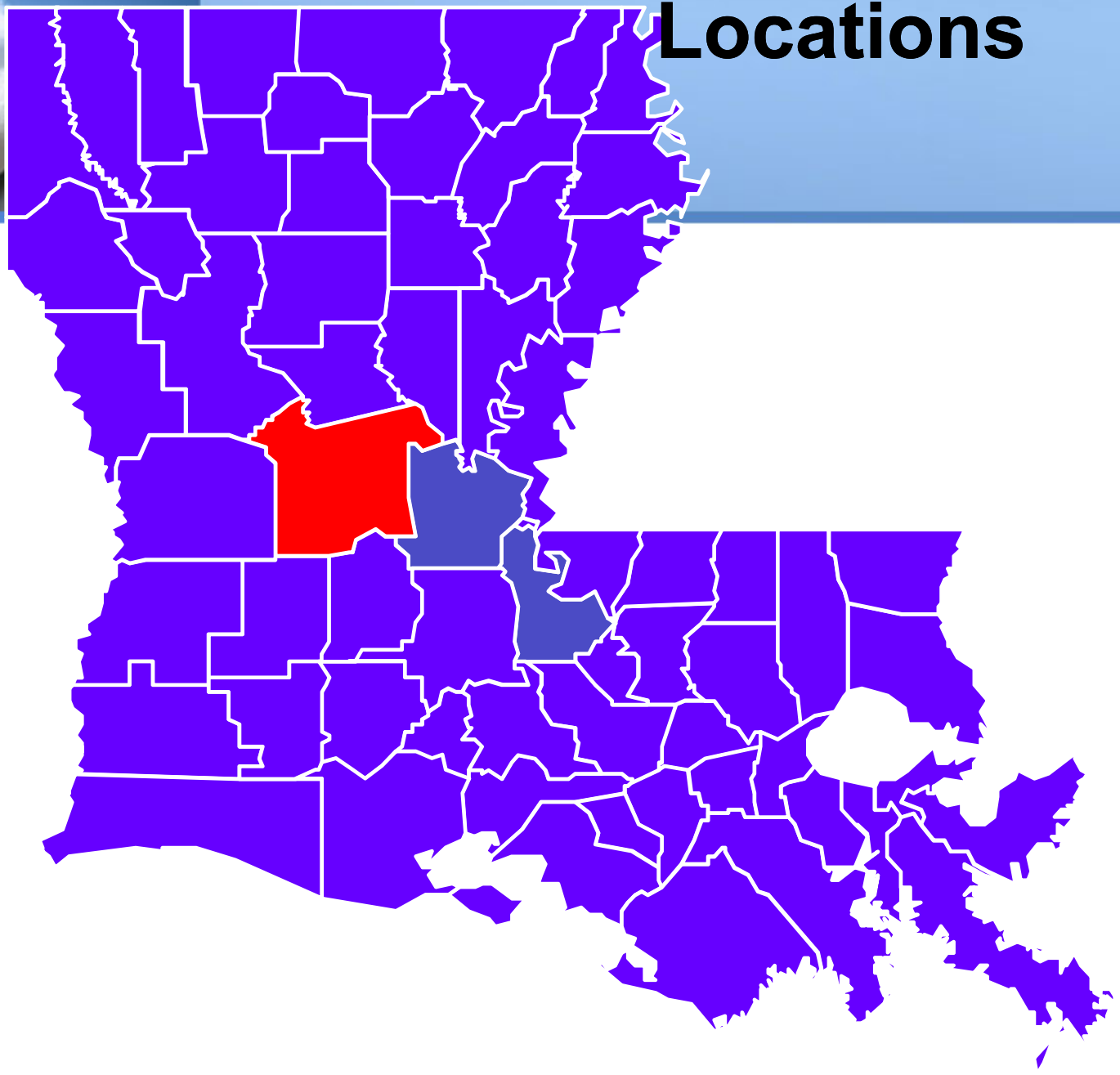
# Alexandria, Louisiana

# Locations



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# Issue

- Yield Reduction

# Compaction Induced Deficiencies - K & N

# Soil Penetrometer

**$200**

**3-inch intervals**


**Green – 0-200 psi**
**Yellow- 200-300 psi**
**Red- 300 psi and above**

# When to test

- Field Capacity
  - About 24 hours after a soaking rain
  - Early spring or late winte
  - Too wet-under estimate
  - Too dry-over estimate

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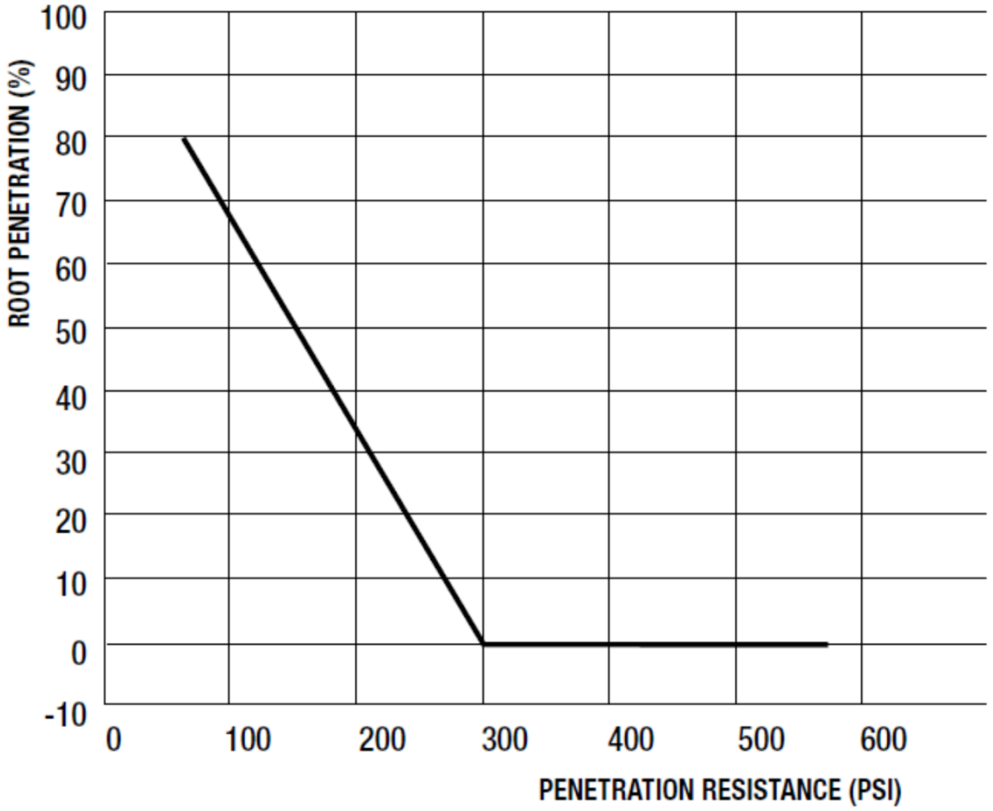


The penetrometer simulates root growth. Root growth decreases linearly with increasing penetration resistance, until practically stopping above 300 psi. Remember, however, that roots may still penetrate soil with a penetration resistance greater than 300 psi if natural cracks and pores are present.

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**Table 1. Interpretation of penetration resistance measurements.**

| PERCENTAGE OF MEASURING POINTS HAVING CONE INDEX > 300 PSI IN TOP 15 INCHES | COMPACTION RATING | SUBSOILING RECOMMENDED |
|---|---|---|
| < 30 | Little to none | No |
| 30–50 | Slight | No |
| 50–75 | Moderate | Yes |
| >75 | Severe | Yes |

Adapted from: Lloyd Murdock, Tim Gray, Freddie Higgins, and Ken Wells, 1995. *Soil Compaction in Kentucky*. Cooperative Extension Service, University of Kentucky, AGR-161.

# Solutions

- Tillage
- Every 3 years?
- It depends
  - Soil type
  - Tillage practices
  - Trips across the field when wet
  - Hard heavy rains

# Thank You

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# Questions

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