Peach, Plum, and Nectarine Fertilization Recommendations for Louisiana

Fertilization Guide for Homeowners

Peach, plum, and nectarine trees can be productive and rewarding in Louisiana home orchards, but they require proper fertilization to support healthy growth and fruit development. These recommendations are designed for homeowners managing a few trees and are based on soil test results, simplified for ease of use.

Note: Poor or inconsistent fruiting in these crops is often caused by pest or disease issues rather than nutrient deficiencies. Fertility management is a valuable troubleshooting tool, but it should always be paired with a strong pest and pathogen management program.

Soil Testing

- Collect soil samples from the top 6 to 8 inches of soil under the tree canopy.
- If your property has different soil types or management histories, submit separate samples.
- Aim to maintain soil pH between **6.0 and 6.5** for best nutrient availability.
- Re-test soil every 2 to 3 years or when trees show signs of nutrient deficiency.

Nitrogen (N)

Nitrogen is essential for shoot growth and fruit development.

- **When to Apply**:
    - **First application**: Late January to mid-February (before bud break)
    - **Second application**: Immediately after harvest if leaf color is pale or shoot growth is weak
- **How Much to Apply**:
    - **Bearing trees**: Apply **0.30 to 0.60 lbs of actual nitrogen per tree** in late winter
    - **Post-harvest**: Apply **0.20 to 0.50 lbs of actual nitrogen per tree** if needed
    - **High-yielding trees**: If trees are producing a heavy crop and shoot growth is less than 12–18 inches, consider increasing the rate to **0.75 to 1.0 lbs of actual nitrogen per tree**, especially on sandy soils or where leaf color is pale. Avoid exceeding this rate without foliar testing.
    - **Non-bearing trees**:

        - **First-year**: Three split applications (March, May, July) using 10-10-10 and calcium nitrate
        - **Second-year**: Three split applications with increasing rates
- **Source Options**: Calcium nitrate, urea, ammonium sulfate, or balanced fertilizers like 10-10-10
- **Tips**:
    - Spread fertilizer evenly under the canopy, keeping it at least 12 inches from the trunk

Nitrogen Timing and Rates – Additional Guidance

Nitrogen supports shoot growth, leaf development, and fruit production. While standard rates are helpful, tree response can vary based on several factors. Use the following indicators to fine-tune nitrogen applications:

Visual Indicators to Adjust Nitrogen Rates:

- **Shoot Growth**: Aim for **18 to 24 inches of annual terminal shoot growth** on bearing trees. Less than this may indicate a need for increased nitrogen.
- **Leaf Color**: Pale or yellowing leaves during the growing season suggest nitrogen deficiency.
- **Crop Load**: Trees with heavy fruit loads may require more nitrogen to support both fruit development and vegetative growth.
- **Pruning Severity**: Heavily pruned trees often respond with vigorous growth and may need slightly less nitrogen early in the season.

Reminder: Avoid nitrogen applications after **August 1**, as late-season growth can increase susceptibility to cold injury.

Phosphorus (P) and Potassium (K)

These nutrients support root development, fruit quality, and winter hardiness.

- **Apply only if recommended by a soil test**
- **When to Apply**:
    - **South Louisiana**: January to February
    - **North Louisiana**: February to March
- **How Much to Apply**:

    - Follow soil test recommendations for pounds per 1000 sq ft or use a general rate of **0.25 to 0.5 lbs of actual P_2O_5 or K_2O per mature tree**, if a soil test indicates a deficiency.
    - For young trees, apply **0.1 to 0.25 lbs per tree**, depending on age and vigor.
- **Source Options**:
    - **Phosphorus**: Triple superphosphate, 10-10-10
    - **Potassium**: Muriate of potash (0-0-60), 10-10-10
- **Tips**:
    - Apply before rain or irrigation if possible
    - Avoid applying P and K late in the season

Lime Application Tips (Per Acre and Per Tree Guidance)

Maintaining proper soil pH is essential for nutrient availability and tree health. Lime is used to raise soil pH when it falls below the recommended range of **6.0 to 6.5**.

When to Apply:

- Apply lime in **late fall** when possible.
- **Avoid applying lime when fruit or foliage is present**, as it may cause damage.
- If more than **2 tons per acre** or **2 lbs per tree** are recommended based on soil test results, apply **half in the first year** and the remainder the following year.

How Much to Apply:

- Soil test reports typically provide lime recommendations in **tons per acre**. To convert to **per tree rates**, use the following guideline:
    - **1 ton/acre ≈ 1 lb/tree**
    - **2 tons/acre ≈ 2 lbs/tree**

This estimate assumes **40–50 trees per acre**, which corresponds to orchard spacing of **12 to 15 feet between trees**. If you only have a few trees, use the per-tree rate directly.

Use **dolomitic lime** unless your soil test shows high magnesium levels. Dolomitic lime is safe, widely available, and effective for raising pH over time.

Application Tips:

- Spread lime evenly under the canopy, keeping it at least 12 inches from the trunk.
- Lime should be incorporated into the soil if possible, especially before planting.
- For established trees, surface application is acceptable, but results may take longer.

Revised 11/2025

Micronutrients (Zinc, Boron, Iron, Calcium)

Micronutrients are needed in small amounts but are essential for healthy foliage, fruit set, and development.

Zinc (Zn)

- **Importance**: Supports leaf expansion and shoot growth.
- **Deficiency Signs**: Small, narrow leaves or rosetting at shoot tips.
- **Recommendation**:
    - Apply **zinc sulfate at 1/2 pound per inch of trunk diameter** in late winter.
    - For mild deficiencies, foliar sprays (2–3 lbs zinc sulfate per 100 gallons of water) can be applied during early leaf-out.

Boron (B)

- **Importance**: Aids in fruit set and kernel development.
- **Deficiency Signs**: Misshapen or poorly developed fruit.
- **Recommendation**:
    - Apply **1 tablespoon of 20 Mule Team Borax per tree per year**, broadcast evenly under the canopy in early spring.
    - **Caution**: Do not overapply—boron can be toxic in excess.

Iron (Fe)

- **Importance**: Supports chlorophyll production and leaf health.
- **Deficiency Signs**: Interveinal yellowing (chlorosis), especially on young leaves.
- **Recommendation**:
    - Use chelated iron products (Fe-EDDHA or Fe-DTPA) as a soil drench or foliar spray if symptoms appear.

Calcium (Ca)

- **Importance**: Strengthens cell walls and improves fruit firmness, reducing cracking and internal breakdown.
- **Deficiency Signs**: Poor fruit quality, cracking, or internal browning—often linked to poor fruit thinning rather than soil deficiency.
- **Recommendation**:

- Maintain soil pH in the target range (6.0–6.5) to ensure adequate calcium availability.
- If soil test calcium is low, apply lime as recommended.
- In varieties prone to fruit cracking, a foliar calcium spray (e.g., calcium chloride) may help if applied during early fruit development. Use with caution to avoid leaf burn.

Quick-Reference Fertilizer Table for Homeowners

Nutrient	When to Apply	Rate	Source Options	Notes
Nitrogen (N)	Late Jan–Mid Feb; Post-harvest if needed	0.30–0.60 lbs actual N/tree (bearing); 3 split apps for young trees	Calcium nitrate, urea, 10-10-10	Avoid after Aug 1; spread under canopy, not near trunk
Phosphorus (P)	Jan–Feb (South LA); Feb–Mar (North LA)	As per soil test	Triple superphosphate, 10-10-10	Important for root growth and fruit quality
Potassium (K)	Same as phosphorus	As per soil test	Muriate of potash, 10-10-10	Supports fruit fill and winter hardiness
Zinc (Zn)	Late winter	1/2 lb zinc sulfate per inch trunk diameter	Zinc sulfate	Foliar sprays useful for mild deficiency
Boron (B)	Early spring	1 tbsp 20 Mule Team Borax/tree/year	Borax	Do not overapply—can be toxic
Iron (Fe)	As needed	Per label	Fe-EDDHA, Fe-DTPA	Use if interveinal chlorosis appears
Calcium (Ca)	Preseason or early fruit development	Based on soil test or foliar need	Lime, calcium chloride spray	Often linked to poor thinning, not soil deficiency

Fertilization Guidance for Commercial Orchards

Commercial orchards should base fertility programs on both **soil test results** and **foliar nutrient analysis**, especially for nitrogen, potassium, zinc, and boron. Foliar comparisons across blocks or years can help identify trends and fine-tune nutrient management.

- **Soil Testing**: Sample to 6–8 inches depth in representative areas. Use results to guide lime, phosphorus, potassium, and micronutrient applications.
- **Foliar Testing**: Collect mid-shoot leaves from current season's growth in midsummer. Compare results to established sufficiency ranges.

Nitrogen (N)

- Apply **60–100 lbs N/acre/year**, split into two applications:
    - **First**: Late January to early February
    - **Second**: Post-harvest, if needed based on leaf color or shoot growth
- Adjust rates based on crop load, tree vigor, and leaf N levels.

Phosphorus (P) and Potassium (K)

- Apply based on soil test results.
- Potassium is especially important in high-yield years to support fruit fill and reduce leaf scorch.
- Maintain a balanced **N:K ratio** in leaf tissue (typically 1.5–2:1).

Micronutrients

- **Zinc**: Apply foliar sprays (2–3 lbs zinc sulfate per 100 gallons) during early leaf-out and again 2–3 weeks later if needed.
- **Boron**: Apply foliar boron (e.g., Solubor) at **0.1–0.2 lbs B/acre** during pre-bloom or petal fall. Avoid overapplication.
- **Calcium**: In cultivars prone to fruit cracking, consider **foliar calcium chloride sprays** during early fruit development. Monitor for phytotoxicity.

Revised 11/2025

Young Tree Fertility (Years 1–3)

- **Year 1**: Apply 0.5 to 1 lb of 10-10-10 per tree in March, followed by 1 lb calcium nitrate in May and July.
- **Year 2**: Apply 250 lbs of 10-10-10 per acre in late February, followed by 150 lbs calcium nitrate per acre in May and July.
- **Year 3**: Transition to bearing tree rates based on observed growth and early fruiting.
- Avoid late-season nitrogen applications after August 1 to reduce risk of cold injury.

Foliar Sampling Protocol

- **Timing**: Collect samples **8–10 weeks after full bloom**, typically in **June to early July** in Louisiana.
- **What to Collect**: Select **mature leaves** from the **mid-portion of current-season terminal shoots**.
- **How Many**: Collect **50–100 leaves** from **5–10 representative trees** per block or variety.
- **Avoid**: Do not sample leaves that are shaded, damaged, diseased, or from weak or overly vigorous shoots.
- **Preparation**:
    - Remove petioles; collect only the leaf blades.
    - Rinse gently with distilled water to remove dust or spray residues.
    - Air-dry and place in a paper bag labeled with date, location, and cultivar.
- **Submission**: Send to a certified lab with relevant orchard information and recent soil test results.

General Seasonal Fertility Calendar for Louisiana

Month	Task
January	Apply lime if needed (based on soil test); Apply P and K if needed
Late Jan–Feb	Apply first N application (bearing trees); Begin foliar Zn if needed
March	Fertilize young trees (Year 1) with 10-10-10
May	Second N application for young trees; monitor growth and leaf color
June	Optional foliar Zn or B sprays if needed
Late June–July	Collect foliar samples for nutrient analysis
July	Third N application for young trees
August	Avoid further N applications; complete foliar sampling
Post-Harvest	Optional N application for bearing trees if growth or color is poor

North vs. South Louisiana Differences

Factor	South Louisiana	North Louisiana
Bud Break Timing	Typically earlier (late Jan–early Feb)	Typically later (mid–late Feb or early Mar)
First N Application	Late January	Mid to late February
P & K Application	January to early February	February to early March
Foliar Sampling	Mid to late June	Late June to mid-July
Growing Season	Longer; more time for nutrient uptake	Shorter; more risk of late-season cold