

# Nutrition and Fertilization of Landscape Palms

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## 1. Common nutritional deficiencies on landscape palms

- a. Nitrogen—reduced growth rate; uniform chlorosis of older or all leaves
- b. Potassium—translucent yellow-orange or necrotic spotting, marginal necrosis, and frizzling on oldest leaves; more severe on leaf tips than bases; can be fatal; treat with sulfur-coated potassium sulfate
- c. Magnesium—marginal chlorosis on the oldest leaves; treat with coated magnesium sulfate or prilled kieserite
- d. Iron—interveinal or general chlorosis (sharply delimited green veins) on newest leaves; treat alkaline soils with soil application of FeEDDHA (138), Trachelene, or Hampshire; acid soils with FeDTPA (330)
- e. Manganese—diffuse interveinal chlorosis accompanied by interveinal necrotic streaking on newest leaves; also causes reduced new leaf size and frizzling; more severe at leaf base than tip; Is often fatal on palms; treat with  $MnSO_4$  (TechMangam)
- f. Boron—small, crumpled new leaves; may cause a sharp bend in the trunk and horizontal growth; can kill the bud. Treat with small amounts (2-4 oz per tree) of borax, Solubor, boric acid, etc.

## 2. Causes of nutritional deficiencies

- a. Insufficient nutrients in the soil; usually due to leaching (e.g., N, K, Mg, B)
- b. High soil pH (e.g., Fe, Mn); can usually be decreased with elemental sulfur,  $FeSO_4$ , or ammonium or urea fertilizers
- c. Complexation with organic matter (e.g., Cu; also Mn by composted sewage sludges)
- d. Nutrient imbalance—too much of one element can induce a deficiency of another element (e.g., N vs K, K vs Mg, etc.)
- e. Poor soil aeration (usually Fe)
- f. Excessive planting depth (essentially a poor soil aeration problem)

**For more details, see <http://edis.ifas.ufl.edu/EP052> (Palm Nutrition Guide)**

- g. Root rot diseases (reduce root surface area available for micronutrient uptake; usually expressed as Fe deficiency)
- h. Removal of K-deficient older palm leaves accelerates rate of decline from K deficiency

### **3. Importance of proper fertilization rates**

- a. Too little results in deficiencies
- b. Excessive macronutrients can cause soluble salt injury
- c. Excessive micronutrients can cause nutrient toxicities

### **4. Prevention of deficiencies is much easier than correcting them after the fact**

### **5. Treatment of deficiencies**

- a. Identify and correct any cultural causes first
- b. Treat with appropriate fertilizers

### **6. Landscape fertilization**

- a. Use 2N-1P-3K-1Mg ratio fertilizers that include all micronutrients (e.g., 8-4-12-4 or 8-2-12-4)
- b. 100% of N, K, and Mg should be in controlled release form
- c. Broadcast using a rotary spreader under the canopy of isolated palms or entire beds or landscapes
- d. Apply 1.5 lbs of actual fertilizer (not N) per 100 sq. ft. every 3 months or 1 lb per 100 sq. ft. every 2 months
- e. **DO NOT USE TURF FERTILIZERS** or landscape fertilizers with water soluble K within 30 ft. of any palm. **USE CONTROLLED RELEASE LANDSCAPE FERTILIZERS** described above for ALL plants in the landscape, including turf in mixed landscapes