



—Scientific Note—

Wrong Plant, Wrong Place Costs Over One Hundred Thousand Dollars

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A Central Florida city completed a huge park improvement project to the tune of \$4.5 million in 2018. The park boasts tennis and basketball courts, playgrounds, pathways, exercise equipment, a splash pad and amphitheater, pavilions, and a prominently located promenade of sixteen *Phoenix sylvestris* palms. The palms were uniformly and prominently planted but showing various stages of decline.

A former city commissioner, a landscaper himself, noticed the palms never really became established, so he and the park director contacted the Seminole County Extension Office. He described 16 silver date palms: some looking fine and some on the brink of death. The county extension agents made a site visit. Almost the entire park was planted with native plants, except for one area planted with 16 non-native *P. sylvestris* palms. The best of the group looked frazzled and had nutrient deficiency symptoms, and the worst warranted concern prompting disease diagnostics.

The three horticulture extension agents in Seminole County performed diagnostics. The agents took soil samples to test for nutrients and drilled for trunk core samples to test for disease. No disease was detected. The soil samples had a range of pH starting at 7.8 and increasing to mid-8. Compounding the issue was soil compaction. The soil where the palms were planted was noticeably hard and tolerable by only some plants.

The issues observed on the non-native and very expensive palm trees were consistent with high pH and compact soils. The leaves showed micronutrient deficiencies. After consulting with soil scientists, it was determined that it was unreasonable to drop the pH with sulfur and too expensive to amend the entire area with improved soil. A chelated iron product and good nutrient management could potentially limp the trees through, but the extension agents ultimately recommended right plant, right place. In this case, the agents' recommendations the Florida native sabal palm, which is tolerant of a wide range of pH and wet to dry conditions.

The city resisted taking the extension agents recommendation for two years. As predicted, the 16 *P. sylvestris* palms worth about \$7000 per tree before installation continued to decline. The city stayed in touch with extension agents the entire time, and in 2020, the realization that right plant, right place would lead to long term landscape resilience, the city replaced the phoenix palms with the Florida native *Sabal palmetto*, a \$400 per plant alternative.

This situation can be avoided in landscapes big and small. Test soil before planting. Select the right plant for the right place. Landscapers need to consider site and soil conditions in addition to pathological diagnostics, especially when there is no disease detected.

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