

MEDIA TEST REVIEW

Debra Schwarze
University of Minnesota

Test Parameter or Nutrient	Actual	Recommended	Acceptable	Toxic
pH	6.2	6.2-6.8	6.0-7.0	>7.4
Soluble Salts (SS)	77	70-90	60-100	>120
Nitrates (NO ₃)	245	150-250	100-350	>400
Ammonium (NH ₄)	<1	0-10	0-15	>15
Phosphorus (P)	14	10-15	5-20	>80
Potassium (K)	52	50-100	30-120	-
Calcium (Ca)	389	50-200	25-300	>400
Magnesium (Mg)	29	40-50	30-60	-
Sodium (Na)	15	10-40	5-60	>70
Iron (Fe)	.06	.20-.50	.10-.70	>5.0
Manganese (Mn)	.34	.50-1.50	.30-1.75	>5.0
Zinc (Zn)	.33	.10-.50	.05-.75	>2.0
Boron (B)	.13	.05-.25	.02-.50	>1.0

This media test is from an interior plantscape. The plant material is a large tree that has been in place for over a year. There have been periodic problems with the nutrient levels, but this is a routine test.

The pH of the medium, a soilless, peat based media, is excellent. High pH levels were a problem in the past. As a public area, it can be difficult for the growers to reduce the pH levels. In this case, over a period of time the growers have applied acidified irrigation water and were able to correct the problem. By maintaining this watering regime, the pH should remain in the recommended range.

The nitrate and phosphorus levels are high in a situation of plant maintenance. For interior plant maintenance, plant health is generally more critical than plant growth. In many cases the plants are installed at the appropriate size for the location, and additional growth is not only unnecessary but often unappreciated. This location maintains a reasonably good light level, and the plants will maintain their health and vigor with a reasonable fertility level.

In this case, the grower has been using calcium nitrate to a large extent for fertilization. With the higher calcium levels, and lower potassium levels it is time to increase the potassium nitrate level in relation to the calcium nitrate level. Fertilization of 100-0-150 ppm N-P-K over a period of time would help to increase the potassium level in relation to the nitrate level and improve plant quality

Along with the potassium nitrate/calcium nitrate fertilization, magnesium sulfate (epsom salts) should be applied. The magnesium can not be added with the nitrate fertilizers, but it should be applied separately approximately monthly. When the magnesium is applied, also apply micronutrients at a 1/2 strength rate. This will help to maintain the minor element levels for the plants.

Since the phosphorus level on this test are getting high, if phosphoric acid is being used to adjust the water pH, this may be a good time to switch to sulfuric acid. While the amount of phosphorus being added to the plants at any one time isn't great, over time the phosphorus will build up.

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