



# GOLF COURSE

Goshen Plantation was one of our first early adopters and test cases of Orykta®. They started with a practice green and two problematic fairways to test the effects and results of Orykta®.

## Golf course issues:

- ✓ Soil compaction
- ✓ Arid and for the last several years, drought conditions
- ✓ Largely clay based soils

## Adding Orykta® resulted in:

- ✓ Better compaction on practice green and tee boxes. From  $\frac{3}{4}$  - 1" of penetration with aerator previously, now getting inches.
- ✓ Soil & turfs are healthier.
- ✓ Appears greens are better withstanding foot traffic.

AUGUSTA, GA

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GOSHEN  
PLANTATION GOLF  
CLUB

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“WE GET THE BENEFIT OF A SOIL AMENDMENT AND FERTILIZER ALL IN ONE APPLICATION AND WE DIDN'T NEED ANY SPECIALIZED EQUIPMENT. WE WERE ABLE TO USE EQUIPMENT WE HAD ON SITE BY SIMPLY INTRODUCING ORYKTA® TO THE STANDARD TASK LIST. ORYKTA® IS NON-TOXIC AND NON-CORROSIVE SO ITS VERY EASY TO WORK WITH. THE POWDERED FORM IS EXCELLENT FOR GREENS AS WE DON'T HAVE TO WAIT FOR PELLETS TO DISSOLVE. GREENS ARE READY AFTER THE FIRST WATERING.”

FROM COURSE  
SUPERINTENDENT

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# GOLF COURSE

## Objective of Test

To determine effectiveness of Orykta® on reversing high sodium conditions and improving overall course and growing conditions.

## Background

(1) During the latter part of winter 1999 and summer 2000, the region suffered low rainfall. In addition, it was determined that the golf course's source of irrigation water contained high salt content, exacerbating already stressed growing conditions. The golf course overall conditions deteriorated, due mostly to a buildup of sodium (Na) in the soil.

2) From Sept. 1999 to Aug. 2000 the golf course management team spent \$50,240 (\$625 per acre on average) on fertilizer products and nutrient supplements. These included blended fertilizers, N in various forms, K in various forms, and gypsum in various forms.

## Scope

1. Orykta® was applied to an auxiliary area of the golf course consisting of a "chipping area" and surrounding fairway ("Test Area"). The soil management regime for this area is the same as that of the fairway management regime throughout the course.

2. On 15 May, Orykta® was spread over a portion of the Test Area. Standard fertilizer applications were otherwise left unchanged throughout the Test Area.

ST. AUGUSTINE,  
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3. On 22 August, plugs were extracted from the section treated with Orykta® and from the section not treated with Orykta® (two plugs total). A soil analysis was performed.

Note : Plugs were also analyzed from three greens areas as part of management's standard course monitoring regime. The greens-area soil analyses are included with this report but were not part of the Orykta® test.

### Orykta® Application

Start by reducing N and sulfur coated urea by 70%, eliminate P, eliminate gypsum. Apply Orykta® at a rate of 1 ton per acre during next fertilizer application. Monitor nutrient levels and adjust application rates accordingly.

### Synopsis of Results

Sodium (Na) was reduced by 58%; nutrient levels more balanced ; Ca to Mg ratio optimized (5 - 1 ratio, Orykta® treated vs. 2.8 - 1 ratio, non-Orykta® treated); CEC (Cation Exchange Capacity) increased from 8.8 to 9.1.

## Soil Analysis Report

	Results				
	With Orykta®			Without Orykta®	
	9 Green	10 Green	14 Green	14 FWY	Chipping Area
<b>Soil pH</b>	6.0	6.1	5.8	6.6	6.5
<b>Buffer pH</b>	7.98	7.99	8.00	8.00	7.89
	Lbs/Acre				
<b>Phosphorus (P)</b>	274	154	132	156	600
<b>Potassium (K)</b>	122	108	116	166	136
<b>Calcium (Ca)</b>	1394	1050	1084	2080	2452
<b>Magnesium (Mg)</b>	162	126	126	446	300
<b>Sulphur (S)</b>	256	166	202	252	128
<b>Boron (B)</b>	2.0	1.8	1.8	3.4	2.6
<b>Copper (Cu)</b>	3.0	2.8	3.2	2.0	1.8
<b>Iron (Fe)</b>	338	248	270	160	406
<b>Manganese (Mn)</b>	272	254	266	110	36
<b>Zinc (Zn)</b>	21.8	18.6	16.6	9.8	8.6
<b>Sodium (Na)</b>	292	224	234	696	296
<b>%K</b>	3.1	3.6	3.8	2.4	1.9
<b>% Ca</b>	68.3	67.3	69.5	59.1	67.4
<b>%Mg</b>	13.2	13.5	13.5	21.1	13.7
<b>%H</b>	3.1	2.1	0	0	9.7
<b>%Na</b>	12.4	12.5	13	17.2	7.1