# PGETech

*"Growing Relationships Every Day"*

**PGE TECH, INC. PROJECT**

**EVALUATION OF PGE TECH PRODUCT FOR USE ON GOLF COURSE PUTTING GREENS**

**FINAL REPORT**

**June 4, 2018**

**RATIONALE:** PGE TECH, INC. has developed a product that has been shown to enhance plant growth. However, influence of the product on Florida turfgrasses is unknown.

**OBJECTIVE:** To determine the influence of PGE TECH product on putting green quality relative to other standard putting green programs.

**TREATMENTS:**

| TREATMENT | SOURCE | Formulation | RATE (oz./1000ft$^2$) | FREQUENCY |
|:---:|:---:|:---:|:---:|:---:|
| 1 | Untreated | --- | --- | --- |
| 2 | PGE TECH | Label | 29.4 | WK1 |
|   |   | Label | 29.4 | WK2 |
| 3 | Harrell's | 12-2-12 | 10.0 | WK1 |
|   |   | 18-3-6 + FeMnMg | 7.0 + 6.0 | WK2 |
| 4 | Florentine | 24-0-0 | 5.5 | WK1 |
|   |   | 0-0-22 + Renaissance | 9.0 + 1.5 | WK2 |
| 5 | Grigg Brothers | 13-2-3 + Fe | 8.8 | WK1 |
|   |   | 3-7-8 + Mn Combo + | 6.0 + 6.0 + | WK2 |
|   |   | Microburst | 6.0 | WK2 |

Rates were determined in order to apply approximately 0.12lbN/1000ft$^2$ to plots each week

**MATERIALS AND METHODS:**
This study was initiated February 24, 2018, and was concluded on June 1, 2018, at the UF/IFAS Fort Lauderdale Research and Education Center. The study was set up as a randomized complete block design replicated 4 times and treatments were applied to 2m x 3m plots on a Tifeagle ultradwarf bermudagrass research green. Per protocol instructions, the above treatments were alternated each week and applied using a $CO_2$ 2-nozzle boom spray apparatus set to delivery volume of 1 gallon/1000ft$^2$. Plots received irrigation of 0.15" after application and regular nightly irrigation of 0.2". Height of cut for trial duration was 0.120" and plots were mowed daily with clippings removed. Two or three days growth was allowed before clippings samples were removed every two weeks for dry yield (g/m$^2$) determination. All plots including the untreated control received pesticides and cultural management practices sufficient for bermudagrass greens in south Florida. Visual turfgrass quality and color ratings (scale of 1-9 with 9=dark green turf, 1=dead/brown turf and 6=minimally acceptable turf) were taken approximately weekly. NDVI measurements were collected throughout the trial for rating comparison. All data was subject to statistical analysis and significant means were identified.

**Corporate Offices Pinellas Park Florida**
**Manufacturing Facility Corvallis Montana**

**Table 1. Visual Turfgrass Quality: PGE TECH**

| TRT | 4/24/2018 | 5/2/2018 | 5/7/2018 | 5/16/2018 | 5/24/2018 | 6/1/2018 |
|:---:|:---:|:---:|:---:|:---:|:---:|:---:|
| 1 | 6.8 | 7.8 | 7.8 | 6.8 | 6.3b | 7.3 |
| 2 | 7.0 | 7.8 | 8.0 | 7.0 | 7.0a | 6.8 |
| 3 | 6.8 | 7.8 | 8.0 | 7.0 | 7.0a | 6.8 |
| 4 | 7.0 | 7.7 | 8.0 | 7.3 | 7.0a | 7.0 |
| 5 | 6.8 | 7.5 | 8.0 | 7.0 | 6.8a | 7.0 |
| SIGNIF | ns | ns | ns | ns | * | ns |

ns, +, *, **, and *** = P>0.10, P<0.10, P<0.05, P<0.01, P<0.001
Means with the same letter within a column are not significantly different according to Duncan's Multiple Range Test
Turfgrass quality ratings based on a 1-9 scale with 9=dark green dense turf, 1=dead/brown turf, and 6=minimally acceptable turf
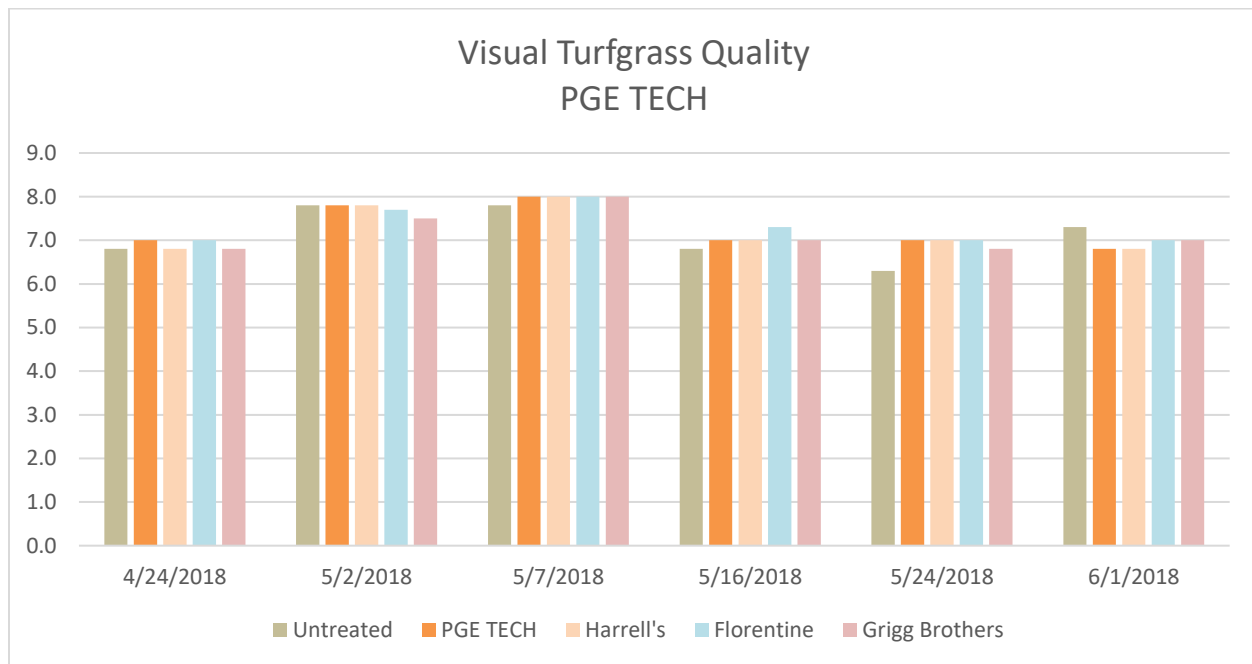
**Table 2. Normalized Difference Vegetation Index (NDVI): PGE TECH**

| TRT | 4/24/2018 | 5/2/2018 | 5/7/2018 | 5/16/2018 | 5/24/2018 | 6/1/2018 |
|-----|-----------|----------|----------|-----------|-----------|----------|
| 1 | .655 | .785 | .803 | .578b | .696b | .730 |
| 2 | .683 | .787 | .805 | .608ab | .704ab | .737 |
| 3 | .663 | .794 | .809 | .631a | .715ab | .729 |
| 4 | .682 | .792 | .803 | .614ab | .713ab | .731 |
| 5 | .666 | .781 | .806 | .628a | .729a | .718 |
| SIGNIF | ns | ns | ns | + | + | ns |

ns, +, *, **, and *** = P>0.10, P<0.10, P<0.05, P<0.01, P<0.001
Means with the same letter within a column are not significantly different according to Duncan's Multiple Range Test
NDVI readings taken using a Holland Scientific Crop Circle CS45 model
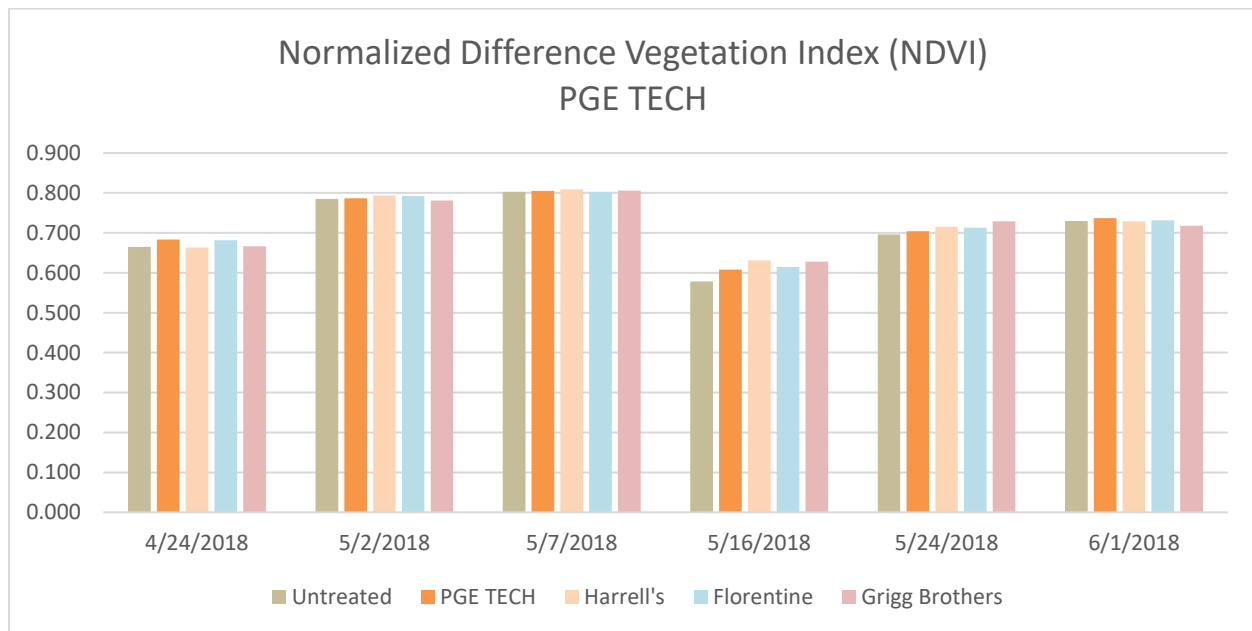
**Table 3. Clipping Yields (g/m²): PGE TECH**

| TRT | 5/4/2018 | 5/18/2018 | 6/1/2018 |
|-----|----------|-----------|----------|
| 1 | 6.00b | 19.15ab | 35.23 |
| 2 | 6.23ab | 14.60b | 35.93 |
| 3 | 7.08ab | 28.80a | 23.23 |
| 4 | 6.43ab | 28.03a | 34.00 |
| 5 | 7.55a | 20.58ab | 26.65 |
| SIGNIF | + | + | ns |

ns, +, *, **, and *** = P>0.10, P<0.10, P<0.05, P<0.01, P<0.001
Means with the same letter within a column are not significantly different according to Duncan's Multiple Range Test



Clipping Yields (g/m²) PGE TECH