

**Zoysiagrass Establishment from Plugs with Fertilizers, Biostimulants,
Mycorrhizal fungi (from Sustane) and Cultural Practices - 2008**
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STATEMENT OF THE PROBLEM:

Zoysiagrass (*Zoysia* spp.) is a warm-season turfgrass used extensively throughout the southern United States that shows excellent cold, heat, and shade tolerance. Zoysiagrass is predominantly produced and established vegetatively due to poor seed viability. Establishment by sod, sprigs, or plugs is common practice on home lawns, athletic fields, and golf courses. Slow growth and establishment rate of Zoysiagrass has created concerns about weed encroachment, winter desiccation, and poor turf quality immediately following the first growing season. Therefore, the objective of our research is to examine the efficacy of several fertilizers, biostimulants, and cultural practices to enhance the establishment of Zoysiagrass from plugs.

Conclusions:

1. There were few differences in establishment (above ground) between the generic fertilizer (Grigg Bros. products) treatments and the Sustane treatments.
2. Verticutting slowed the Zoysiagrass plants from filling in and covering each plot when compared to the plots that did not receive verticutting treatments.
3. On a positive note, differences in rooting were observed between the generic (Grigg Bros.) fertilizer treatments and the Sustane treatments regardless of cultural practices. **There was a 23 to 29 percent increase in root production (below ground biomass) observed in all plots that Sustane organic products were applied to compared to the Grigg Bros. synthetic fertilizer plots.**



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Summary Data % Turf Cover and Root Weight by Treatment

| Trt # | Plug Dia.(in.) | Plug Dia. (in.) | % Turf Cover | % Turf Cover | % Turf Cover | % Turf Cover | Root Weight (g) | Manufacturer | Treatments | Treatments | Root Mass Comparison |
|-------|----------------|-----------------|--------------|--------------|--------------|--------------|-----------------|--------------|------------------------|---------------------------------|-------------------------|
| | 21 DAP | 42 DAP | 63 DAP | 84 DAP | 105 DAP | 126 DAP | | | Fertility | Cultural | |
| 1 | 4.9 | 7.6 | 63.75 | 81.25 | 87.5 | 92.5 | 4.17 | Grigg Bros. | 7-7-7+16-4-8 2x | | |
| 2 | 5.2 | 7.7 | 65 | 76.25 | 87.5 | 94.75 | 5.35 | Sustane | B+4-6-4+5-2-10+18-18 | | |
| 3 | 4.8 | 7.2 | 65 | 78.75 | 91 | 94.75 | 5.15 | Sustane | B2x+4-6-4+5-2-10+18-18 | | |
| 4 | 5.2 | 7.3 | 65 | 76.25 | 87.5 | 96 | 5.14 | Sustane | BG+5-2-10+18-1-8 | | 27% increase |
| 5 | 5 | 7.6 | 66.25 | 80 | 91.25 | 97 | 5.73 | Sustane | BG+5-2-10+B+18-1-8 | | Best Treatment In block |
| 6 | 5.4 | 8.4 | 55 | 70 | 80 | 88.75 | 4.27 | Grigg Bros. | 7-7-7+16-4-8 2x | Verticutting and topdressing | |
| 7 | 4.9 | 7.4 | 50 | 61.25 | 75 | 86.25 | 5.02 | Sustane | B+4-6-4+5-2-10+18-18 | Verticutting and topdressing | 23% Increase |
| 8 | 5.5 | 8.3 | 51.25 | 62.5 | 75 | 83.75 | 5.55 | Sustane | B2x+4-6-4+5-2-10+18-18 | Verticutting and topdressing | Best Treatment in block |
| 9 | 5.3 | 8.1 | 53.75 | 66.25 | 78.75 | 87.5 | 4.98 | Sustane | BG+5-2-10+18-1-8 | Verticutting and topdressing | |
| 10 | 5 | 7.1 | 51.25 | 63.75 | 73.75 | 85 | 5.19 | Sustane | BG+5-2-10+B+18-1-8 | Verticutting and topdressing | |
| 11 | 5.1 | 7.3 | 51.25 | 65 | 73.75 | 82.5 | 4 | Grigg Bros. | 7-7-7+16-4-8 2x | 2x Verticutting and topdressing | |
| 12 | 5.2 | 7.7 | 50 | 63.75 | 71.25 | 82.5 | 5.01 | Sustane | B+4-6-4+5-2-10+18-18 | 2x Verticutting and topdressing | 29% Increase |
| 13 | 5.2 | 8.4 | 56.25 | 70 | 77.5 | 86.25 | 5.62 | Sustane | B2x+4-6-4+5-2-10+18-18 | 2x Verticutting and topdressing | Best Treatment In block |
| 14 | 4.9 | 7.2 | 53.75 | 63.75 | 72.5 | 78.75 | 5.35 | Sustane | BG+5-2-10+18-1-8 | 2x Verticutting and topdressing | |
| 15 | 5 | 7.6 | 53.75 | 66.25 | 75 | 83.75 | 5.12 | Sustane | BG+5-2-10+B+18-1-8 | 2x Verticutting and topdressing | |
| 16 | 5.2 | 8 | 63.75 | 75 | 85 | 92.5 | 4.61 | Sustane | 4-6-4 + Azospirillum | | |

B = BOLSTER Liquid
 B2x = BOLSTER Liquid applied twice
 BG = BOLSTER Granular 4-4-4+3Fe + Mycorrhizae

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