Bioassay Assessment of Terra-Sorb Foliar, including Growth Regulating Responses of Perennial Ryegrass and Impacts on Photosynthesis, Leaf Gas Exchange, and Stress Tolerance. (C05-kauffman140109-Oral)

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Abstract:

Materials that, in minute quantities, promote plant growth have been defined as biostimulants (Schmidt, 1999). Most of the turf response claims associated with biostimulant use have centered on testimonials, rather that the results of scientific studies conducted by universities or other independent researchers. The biostimulant used in these experiments was Terra-Sorb Foliar (Bioiberica S.A., Barcelona, Spain), which was applied as a foliar spray. The first objective was to determine whether Terra-Sorb had hormonal activity. Bioassays performed examined natural occurring auxins, cytokinins, and gibberellins using the Avena (oat) first internode segment straight growth, Raphanus (radish) cotyledon expansion, and Lactuca (lettuce) hypocotyls segment elongation bioassays, respectively. The second objective was to determine whether improved shoot and top growth was a result of nitrogen from amino acids, or as a result of hormone derived molecules contained within Terra-Sorb, and to test its effects on turfgrass physiology, including heat tolerance. Response measurements included shoot growth, clipping yield, quality ratings, photosynthetic efficiency, leaf gas exchange, and antioxidant concentrations.

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