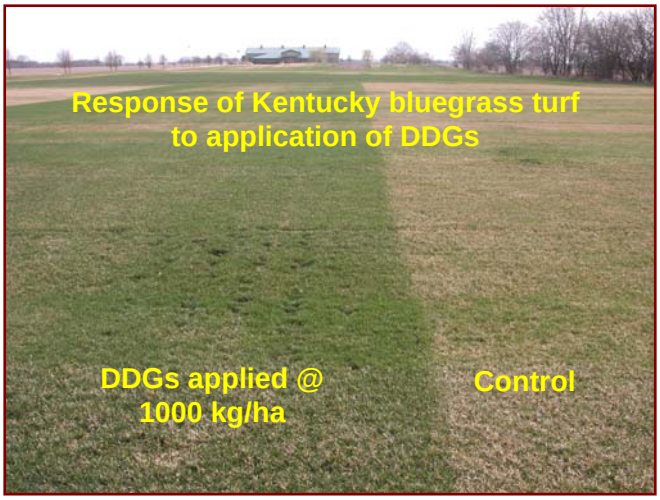
USDA • ARS • MWA BIOENERGY RESEARCH

Challenges for Today. Solutions for Tomorrow.

DDGs for Horticultural Applications



What is this technology?
Utilizing DDGs as an organic fertilizer for high-value horticultural crops.

The expansion of corn-based ethanol production in the U.S. has led to a large increase in DDGs

- As much as 88 million metric tons of DDGs, an ethanol co-product, could be produced by 2011.
- Nearly all of this is used as animal feed with values generally less than $150/ton.

Our research has shown that DDGs can promote the growth of high-value crops such as turf, ornamentals, and vegetables

- Applied to Kentucky bluegrass turf at 1000 kg/ha resulted in rapid greening similar to synthetic fertilizers, with results lasting for up to 6 months (picture above).
- Increased the yield of marketable tomato fruit by ~150% when incorporated into soil at 1 kg/m^2 2-4 weeks before tomatoes were transplanted.

The potential value of DDGs for these applications is much higher than for animal feed

- Cottonseed meal (CSM), an organic fertilizer commonly marketed to homeowners, has a N-P-K value of approximately 6-2-1, similar to that of DDGs, and retails for ~$14/40 lb bag.
- When run in comparison to CSM, DDGs increases turf greening and growth more rapidly, and retains this effect much longer.

Additionally, DDGs inhibit growth of annual grasses & broadleaves without damage to turfgrass

- The herbicidal effect of the DDGs is temporary, with no concern of carry-over if used in rotational crops.

Moving Forward

- We currently have a CRADA with Summit Seed, Inc., Manteno, IL for development of this technology.

Contact Information

Steven F. Vaughn, Plant Physiologist, New Crops Processing and Technology Research
(309) 681-6344; steven.vaughn@ars.usda.gov
http://ars.usda.gov/main/site_main.htm?modecode=36-20-85-00