Ethanol byproduct produces green results

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Tons of distiller's dried grains being held in storage at the ethanol plant in West Burlington, Iowa. Credit: Photo by Steven Vaughn

Commercial flower and plant growers know all too well that invasive, ubiquitous weeds cause trouble by lowering the value and deterring healthy growth of potted ornamental plants. To control weeds, many commercial nursery owners resort to the expensive practice of paying workers to hand-weed containers. Some growers use herbicides, but efficacy of herbicides is questionable on the wide range of plant species produced in nurseries, and many herbicides are not registered for use in greenhouses.

Enter "dried distillers grains with solubles", or DDGS. DDGS, a byproduct of converting corn to fuel ethanol, is typically used as livestock feed. Rick A. Boydston, Harold P. Collins, and Steve Vaughn, of the U.S. Department of Agriculture, undertook a research study on the use of DDGS as a weed deterrent on potted ornamentals. The study

results, published in the February 2008 issue of *HortScience,* evaluated the use of DDGS as a soil amendment to suppress weeds in container-grown ornamentals.

Researchers applied DDGS two ways: to the soil surface, and mixed into the potting media of transplanted ornamentals. Applied to the soil surface after transplanting, DDGS caused no injury to plants. According to Dr. Boydston, an agronomist with the Agricultural Research Service (ARS), "grains applied to the surface at rates that gave good coverage of the soil (800 and 1600 g/m2) reduced the number of common chickweed and annual bluegrass. Weed control was not perfect, but could reduce the amount of hand-weeding typically required."

When mixed into the potting media, however, dried distillers grains were toxic to transplanted rose, coreopsis, and phlox plants. Researchers concluded that DDGS may be useful for reducing weed emergence and growth in container-grown ornamentals when applied to the soil surface at transplanting. Dr. Boydston noted that additional research is needed to identify and confirm the safety (of using DDGS) to other ornamentals and effectiveness of controlling other types of weeds.

Dried distillers grains are becoming more readily available as ethanol production in the U.S. increases. The push to produce ethanol, a cleaner-burning alternative to gasoline, has gained interest as gasoline prices continue to soar. As production increases, finding new uses for byproducts like DDGS becomes more critical. Dr. Boydston sees the results of this and similar ARS studies as a win/win for ethanol producers and the agriculture industry, noting, "identifying new uses for byproducts likes distillers grains could increase the profitability of ethanol production".

The complete study and abstract are available on the HortScience electronic journal web site: hortsci.ashspublications.org/c …

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