RESEARCH SUMMARY

Treatments of Petroleum Spills on Bermudagrass Turf

A field study was conducted on Tifgreen hybrid bermudagrass (Cynodon dactylon x C. transvaalensis) to determine the best corrective treatments and subsequent turf recovery rates from various petroleum spill damage. Five petroleum products commonly used in turfgrass maintenance equipment were applied as spill treatments to the turf growing on Lufkin fine sandy loam. Three replicate spray treatments of gasoline, motor oil, hydraulic fluid, and brake fluid, plus direct spreading of grease were made over 1-m² plots. Calcined clay fines, activated charcoal, and detergent were evaluated as potential corrective treatments. Each corrective treatment was applied within 20 minutes of each spill in three replications.

The detergent corrective treatment proved effective in enhancing turf recovery in 3 to 4 weeks from motor oil, hydraulic fluid, and brake fluid damage. None of the corrective treatments were effective on either the gasoline or grease-damaged turf. The turf recovered rapidly in 3 to 4 weeks from gasoline spills without corrective procedures. More than 10 weeks were required for turf recovery from grease spills.

Comments. The removal of spilled hydraulic fluid and motor oil by means of a detergent washing proved to be an effective corrective treatment for enhancing turfgrass recovery from the initial foliar injury. In both cases, complete recovery of the turf was achieved 3 to 6 weeks sooner than with the other corrective procedures, such as calcined clay, activated charcoal, or a water drench. Also, detergent washing enhanced turfgrass recovery by 1 week in the case of brake fluid spills.

The Amazing Grass Plant

Continued from page 6

material. Grasses of all types represent a large source of biomass for production of methanol, an energy source.

Our perennial turfgrass species evolved more than 45 million years ago during the Paleocene Epoch of the Tertiary Period, which is relatively recent in the earth’s history. They have been cultured by humans to provide an enhanced environment and quality-of-life for more than 10 centuries. The complexity and extent of the environmental benefits that improve our quality-of-life are now quantitatively documented (1, 2).

Functional Benefits Include:

- Excellent soil erosion control and dust stabilization, thereby protecting a vital soil resource.
- Improved quality protection and recharge of groundwater, plus flood control.
- Enhanced entrainment and biodegradation of synthetic organic compounds.
- Soil improvement via organic matter–carbon additions.
- Accelerated restoration of disturbed lands.
- Substantial urban heat dissipation and temperature moderation.
- Reduced noise, visual glare, and visual pollution problems.

- Decreased noxious pest problems and allergy-related pollens.
- Lowered fire hazard via open, green turfed firebreaks.
- Safety in vehicle operation on roadsides and engine longevity on airfields.
- Improved security provided by high-visibility turfed zones.

Recreational Benefits Include:

- A low-cost surface for outdoor sports and leisure activities.
- Enhanced physical health of participants.
- A unique low-cost cushion against personal impact injuries.

Aesthetic Benefits Include:

- Enhanced beauty and attractiveness.
- Improved mental health, with a positive therapeutic impact and social harmony.
- Improved work productivity.
- Complimentary relationship with the ecosystem of flowers, shrubs, and trees.
- An overall better quality-of-life, especially in densely populated urban areas.

Continued on page 8