USGA®

# RESEARCH UPDATE

## Turfgrass And Environmental Research Milestones

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The USGA plays a critical role funding research to advance the long-term viability of golf. Several notable accomplishments stand out when assessing the progress of the USGA Turfgrass and Environmental Research Program.

**Water Conservation** - In the 1980's and 90's, research supported by the USGA determined how much water golf course grasses use. Today, work continues on how grasses respond to periods of drought, as well as the minimum amount of water needed to maintain quality playing conditions. Research indicates golf course irrigation can be reduced 20 to 40 percent. The USGA also supports research on managing recycled water for irrigation. More than 15% of golf courses now use recycled water, which when handled correctly, can provide excellent playing conditions.

**Turfgrass Breeding** - USGA supported turfgrass breeding at universities and the U.S. Department of Agriculture improved grasses for golf courses. Many grasses are now available that tolerate periods of extreme heat, drought, cold, and salinity. Playing quality and heat tolerance of bentgrass has improved. New bermudagrasses have better cold tolerance and earlier green-up in the spring. Referring to the USGA-sponsored development of improved seashore *paspalum*, National Geographic stated, "A humble turfgrass has won the golf trifecta, earning raves from duffers and greenkeepers, as well as environmentalists."

**Pesticide and Nutrient Fate** - The USGA funded the first self-examination of golf's impact on the environment. The results demonstrate under most conditions; the small amounts of pesticides and nutrients, that move offsite from

golf courses, were at levels below the health and safety standards established by the U.S. Environmental Protection Agency (EPA). The USGA continues to cooperate with universities and the U.S. Department of Agriculture on nitrogen and phosphorous runoff, as well as methods to reduce those nutrients released into the ground and surface water.

**Turfgrass Information File (TGIF)** – Hosted at the Michigan State University Library, this online database is the largest collection of turfgrass information in the world—both the physical collections and electronic database. This valuable resource has more than 200,000 articles and more than a million searches conducted annually. Full text is available for more than 50% of the records on the internet. Individuals access the USGA Green Section Record more than 3,000 times per day.

**Future Expectations**

The USGA leads the way in providing outstanding playing conditions on today's golf courses—the primary factor for the enjoyment of millions of golfers worldwide. These conditions are a direct result of the hundreds of USGA research projects. Although the future will demand a high level of course conditioning using fewer inputs, USGA-funded research will continue to provide the knowledge to make that possible. The USGA will continue a rigorous evaluation of natural resource and energy consumption, as well as supporting the development of new grasses and the integration of new technologies. Management practices that are economically sound and environmental sustainability will help to advance the long-term viability of golf.

One of the positive outcomes of the USGA Turfgrass and Environmental Research Program has been the successful development of turfgrass breeding programs at universities. Since 2010, these invigorated research programs have received more than $5 million in grant funding from the U.S. Department of Agriculture's Specialty Crop Research Initiative. The focus of these programs is to develop grasses that use resources efficiently and persist under traffic, heat, cold, and drought. In this photograph, a golf cart traffic simulator is used to test fine fescue varieties at the University of Minnesota (photo credit: Andrew Hollman).

Source: Mike Kenna

**Additional Information:**

Milestones of the USGA Turfgrass and Environmental Research Program