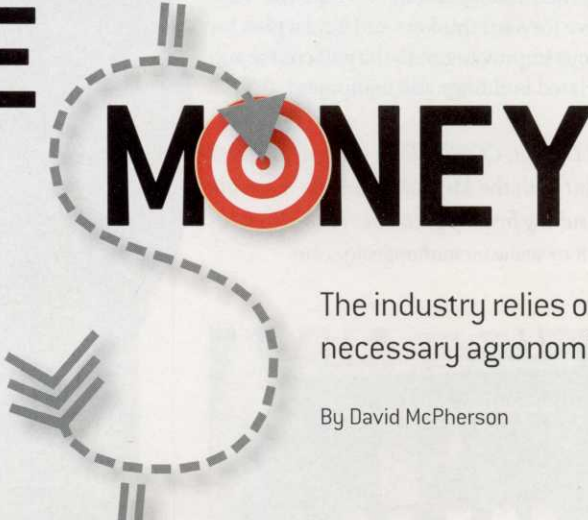


FOLLOW THE MONEY



The industry relies on various sources to fund necessary agronomic research to protect turf

By David McPherson

As more regulations restrict pesticide use, the golf industry needs to continue to conduct research to combat various pests and diseases that threaten its most valuable commodity – turf.

Research – in the lab and in the field – conducted by plant pathologists, horticulturalists, turfgrass scientists and other academics, is possible only with proper funding. While there's not a debate about the need to study turfgrass, questions abound about who funds research projects. There are plenty of sources ready to fund agronomic research, says Frank Wong, Ph.D., an associate specialist in cooperative extension at the University of California-Riverside in the department of plant pathology and microbiology.

"Traditionally, golf has been a strong economic force, so there's always money available," Wong says. "As far as a traditional commodity, turf is goofy. With traditional crops, such as cotton or wheat, you have commodity boards that tax themselves, or there's a state tax to have money available for university or private research."

With turf groups, only a few states – New York, New Jersey and Wisconsin, to name a few – have turf associations encompassing the sod, sports turf and golf industries that have boards that raise money. Depending on the scale of the project, the number of scientists involved and the amount of overhead needed, it can cost

more than \$120,000 to operate a turf-related field and laboratory research project each year, researchers say.

FUNDING SOURCES

Traditionally, agronomic research funding came from a variety of sources such as turfgrass associations at the regional and state level, golf industry associations such as the GCSAA and the USGA.

Another source of regional funding is the O.J. Noer Research Foundation, established in Wisconsin in 1958 and dedicated to financially supporting turfgrass research. Other states have similar turfgrass research and educational foundations, which vary considerably from state to state depending on whether they were established with research and educational support as the primary purpose. North Carolina State University and Michigan State University foundations are models.

Besides these traditional sources, broader sources such as the USDA and the National Science Foundation also can help fund related projects.

"Quite often, they don't fund turf research per

se, but they fund research where turf is used as model system to understand larger issues," says Bruce Clarke, Ph.D., a turfgrass pathologist and the director of the Center for Turfgrass Science at Rutgers in New Jersey.

The USDA recently announced \$28.4 million in funding for specialty crop research, for which turf qualifies in some cases.

Chemical manufacturers also fund research, but researchers say because of consolidations and mergers, there aren't as many funds available from these sources as there once were.

Clarke says his program still receives a good deal of funding because turf disease is one of the key problems affecting golf courses. The program's 25 faculty members typically acquire more than \$1 million a year from external sources to conduct turfgrass research. Sources include the USGA, GCSAA, O.J. Noer Research Foundation, Tri-State Turf Research Foundation, government agencies such as the USDA,

NSF and NRI, as well as the New Jersey Turfgrass Foundation, the Golf Course Superintendents Association of New Jersey, the Cultivated Sod Association of New Jersey, the New Jersey Landscape Contractors Association and the Sports Field Managers Association of New Jersey.

"Diseases rank consistently as one of superintendents' major concerns," Clarke says. "From that standpoint, there seems to be quite a bit of funding to address significant issues that are affecting golf course superintendents in the United States and Canada."



Clarke

Other popular topics in the turfgrass research field include discovering alternatives to current chemical pesticides and finding new ways to treat and prevent pests and diseases using an integrated pest management approach.

Clarke doesn't believe there's a shortage of funding sources but says researchers need to be creative and inventive to secure enough money to complete large multiyear projects.

Preliminary data generated by the Rutgers turf center's internal competitive grants program allowed faculty to develop the initial data to spearhead a large, multistate research project about the annual bluegrass weevil and anthracnose that was funded for five years (2005 through 2010) by the USDA Hatch Act program. This project includes entomologists, pathologists, breeders, management specialists and physiologists from 12 states and Canada. Most members of this multistate project also have been able to acquire additional funding to support their facet of the overall project from local, regional and national funding sources.

MULTISOURCE FUNDING

Partnerships and tapping multiple sources

helps ensure adequate funding for a large-scale research project, especially in the current sluggish economy.

For example, Clarke is part of a multistate research team called NE-1025: Biology, Ecology and Management of Emergent Pests of Annual Bluegrass on Golf Courses. (Visit <http://nimss.umd.edu> for more details.) This group of academics, which includes Wong, is studying best management practices for anthracnose control.

"Anthracnose is a fungal disease, which has emerged from obscurity during the past 12 years to be one of the major issues on golf course greens," Clarke says.

Funding for this collaborative project came from the following: the USDA, the GCSAA, the USGA, the GCSA of New Jersey, the U.S. Environmental Protection Agency, The Land Institute, the Tri-State Turf Research Foundation and the Rutgers Center for Turfgrass Science.

"There's nothing to hide. We want to give credit to the organizations who support our research." – Bruce Clarke, Ph.D.



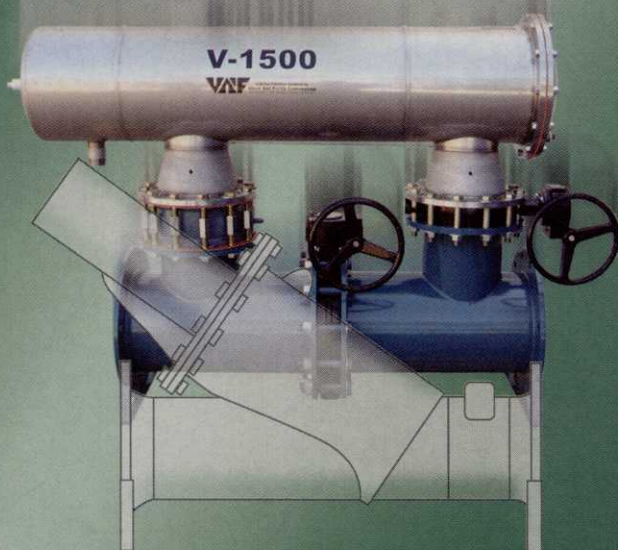


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TURFGRASS RESEARCH

"There's always an acknowledgement section in the published research where we acknowledge our funding," Clarke says. "There's nothing to hide. We want to give credit to the organizations who support our research."

USGA SUPPORT

The USGA, which helps fund more than 10 research projects a year, funds agronomic research through a competitive grants program. Each year, about \$900,000 becomes available for a new three-year period, says Mike Kenna, Ph.D., director of the USGA Green Section Research. The funding cap for individual projects is \$90,000 during the three-year period or \$30,000 per year, Kenna says. Universities are allowed to take 16 percent overhead from USGA grant funds.



Kenna

"It's important to note USGA funding doesn't pay university faculty salaries and many of the expenses associated with turfgrass or environmental research," he says. "Generally, we're only paying about 20 to 25 percent of the project costs."

Since 1983, the USGA has funded more than 400 projects at land grant universities throughout the United States, at a cost of \$37 million, to improve the playing conditions and enjoyment of the game. To see a list of current projects the USGA is funding, visit its Web site, www.usga.org.

The call for new proposals is available on the USGA Green Section Web site each January. The USGA generally receives 50 to 60 preproposals from which it selects 20 to 25 for development into comprehensive proposals. Only 10 to 12 of those are chosen in the selection process, which is conducted by the university volunteers and the USGA staff who make up the Turfgrass and Environmental Research Committee.

The USGA publishes an electronic technical journal called Turfgrass and Environmental Research Online that reports the results of research projects funded under USGA's Turfgrass and Environmental Research Program. Visit <http://usgatero.msu.edu/> for more information.

Annually, the USGA publishes a short one-page report for each project. All of the project reports are published in an annual research summary that has a total of 40 to 60 projects. The USGA also requires researchers to publish their findings in peer-reviewed, scientific journals for their respective disciplines. Short versions of TERO or scientific journal articles are published in the USGA Green Section Record.



Carrow

Kenna says funding for research is generated primarily from the U.S. Open Championship through television rights, corporate tents, ticket sales, merchandise, etc. Additionally, the USGA receives about \$250,000 per year in royalty income from the sale of turfgrass cultivars developed with USGA grant support at universities.

The USGA also contributes \$100,000 a year to the National Fish and Wildlife Foundation, which is matched dollar for dollar. The NFWF-USGA Wildlife Links program funds projects studying how mammals, birds, amphibians and reptiles use golf courses for habitat.

RIISING COSTS

Another significant challenge facing researchers is that universities are demanding more of a cut upfront, says

professor Nick Christians, Ph.D., who's in his 30th year in the department of horticulture at Iowa State University.

"The biggest factor affecting funding you would hear from almost anybody in the research field is a change in philosophy within universities to where they now want overhead, generally 46 to 48 percent," he says. "For example, if it's a grant for \$100,000, they want \$48,000. It makes it that much more difficult.

We're seeing the availability of funds decrease while the university is taxing what comes in. It's gotten down to where most of my day is spent trying to bring in enough money to run a program."

Royalties from turfgrass germplasm releases are another funding source available to some



Christians

schools, says Bob Carrow, Ph.D., professor of crop and soil science at the University of Georgia. These are funds a licensed grower for a turfgrass species pays. An initial licensing fee and then ongoing royalties based on sales might be included. Monies normally come back to the university, usually through the university's research foundation, Carrow says.

Despite the increased overhead, the good news for Christians is that Iowa State has benefited from these royalties.

"We have a patent that's \$1.8 million at this point and will end up bringing in about \$2 million in royalties on a natural pesticide," he says, adding some of the money will go toward research. "Some of the bigger schools, such as Rutgers, have big breeding projects where work done 20 years ago is now bringing in royalties on the varieties. That's a potential way of generating some funds, but not many institutions have that available to them."

COOPERATION IS KEY

Looking down the turfgrass research road, Wong believes there needs to be even more cooperation among the various players in the golf industry.

"In the future, in lieu of not having federal or state support because golf isn't considered a primary crop of importance, the industry really has to consider stepping up to the plate and having more partnerships," he says.

Ultimately, superintendents are the ones researchers are trying to help out in many cases, but there's often a disconnect between what the superintendent does and what the membership or management wants.

"Superintendents know the importance of some new and invasive pest, water quality act or restriction, but often the clientele or management doesn't get it," Wong says. "But it's the clientele or management who hold the purse strings." GCI

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