

# How Roundup® helped Jim Siegfried renovate this fairway in days, without closing it for one minute.



Take a good look at this good-looking fairway.

Last fall, Jim Siegfried found a way to clean it up, without tearing it up—at the height of his club's busy season. With Roundup® herbicide by Monsanto.

Jim is the Greens Superintendent at Losantiville Country Club, Cincinnati, where bermudagrass had become a serious problem on the 18th fairway. To control it, Jim applied Roundup once—while the weeds were still actively growing—right at the start of the Labor Day weekend.

"That's really 'prime time' here," Jim told us. "But after we applied Roundup, we kept the fairway in play the whole weekend, and after. The members played right over it, with no problem."

Since Roundup has no residual soil activity, and won't wash or leach out of treated areas to injure desirable plants, Jim simply took normal precautions against spray drift—and didn't worry about damaging desirable vegetation along the fairway.

Even better, he was able to re-seed right into the dying bermudagrass only 7 days after applying Roundup—without loss of playing time or inconvenience to the membership.

Reinfestation won't be a big problem for Jim, either. He knows that Roundup destroyed the rhizomes of the treated weeds, helping prevent their regrowth.

Jim thinks he'll use Roundup again this year—and apparently some club members hope so, too. "As soon as they saw how good this fairway looks, some of the members started asking when I'm going to do the same for #10, where we have some more bermuda. I'll probably tackle that with Roundup this fall."

*If controlling many tough emerged weeds and grasses is a problem for you, see your local Monsanto representative or chemical dealer soon for your supply of Roundup.*

*Roundup. It worked for Jim Siegfried. It can work for you.*

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## Poa Annua from page 50

pathogenicity have been based on observations from the field of the association of *Colletotrichum graminicola* with dead and dying annual bluegrass. In other words, the pathogenicity of *Colletotrichum graminicola* on annual bluegrass has yet to be shown by the widely accepted laboratory procedure of isolation of the fungus, inoculation of plants, observation of symptoms, and then re-isolation of the fungus. All of what we feel that we know about anthracnose on turfgrass in general, and on annual bluegrass in

## Annual bluegrass is least likely to survive the pressure of intergrated environmental stress

particular, then, has been gained through apocryphal statements, field observations, and interpolations from research conducted on the disease as it occurs in cereal crops. Furthermore, a systematic field study has never been conducted to determine the exact distribution of *Colletotrichum graminicola* within the annual bluegrass growing region of the North American continent. This means that not only are we lacking in substantive knowledge of the pathogenicity of anthracnose and its potential for killing out stands of annual bluegrass, but, also, we do not know whether the fungus *Colletotrichum graminicola* actually exists in a high percentage of the areas in which the summer dying-out of annual bluegrass occurs.

### Is it Anthracnose or is it Wilt?

We now come to the bottom line. The question is, when annual bluegrass dies during warm, humid weather, is the cause of this death anthracnose, wilt, or a number of interacting factors? Furthermore, if these stress factors are lethal, are they necessarily the same from one area to the next, or from one warm season to the next?

The lethal effects of high temperatures on annual bluegrass are well documented. When compared with the more commonly



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## Poa annua

grown temperate zone grasses, its heat hardiness ranks among the poorest. Depending on the range and duration of the day-night air temperature patterns, the progress of the deterioration of the plant may be either rapid or slow. In the final analysis, however, the fact remains that even with the more heat tolerant strains, heat stress alone is capable of either killing annual bluegrass outright or significantly reducing its capacity to compete successfully for the same growing space with the other temperate zone grasses. Furthermore, while it is more tolerant than certain other temperate zone grasses to some of the other environmental stresses, when compared to them with respect to its capacity to survive the collective and continuing pressures of these various stresses, annual bluegrass has the poorest potential for survival.

Our working knowledge of the nature of anthracnose on annual bluegrass, on the other hand, is very limited. In addition to the lack of information on its pathology, we do not know whether the disease actually occurs in all of the areas of the North American continent characterized by the summer dying-out of annual bluegrass. If this were actually to be the case, it would indeed be a very unique circumstance, for it would be the only disease of turfgrasses that is of major importance uniformly throughout this total area.

The capacity of annual bluegrass to withstand periods of drought is less than any of the other temperate zone grasses.

Also, it would be the only turfgrass disease that is both epidemic and severe in its outbreak each year. The likelihood of this being the case for anthracnose is extremely remote.

Based on what we know about both the nature of annual bluegrass and the various disease and environmental stress factors that attend its growth, it is both simplistic and

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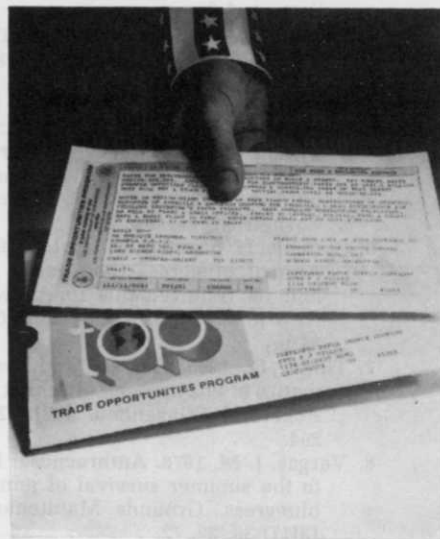
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## Poa annua

highly unrealistic to try to designate any one of these as the universal and continuing cause of its death during warm weather. However, as we look to these various factors, certain of them can be ranked as more significant in their impact on the longevity of annual bluegrass than others. In reviewing the research information we now have, there is not sufficient data to establish anthracnose as a major factor, contributing in its own right either the widespread or local

dying-out of stands of annual bluegrass. On the other hand, with the knowledge we have of the relative susceptibility of annual bluegrass to heat stress, it would seem reasonable to assume that of all the stress factors, on a year-to-year basis, high temperature is probably the most frequent, if not the most important, single cause of the death of annual bluegrass during the summer season.

Not only are we lacking in substantive knowledge of the pathogenicity of anthracnose to annual bluegrass, we do not know if it exists in significant numbers in areas where dying-out occurs.

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Presented at the 30th Annual Canadian Turfgrass Conference in Halifax, Nova Scotia. Reprinted with permission of The Greenmaster, publication of the Canadian Golf Superintendents' Association.

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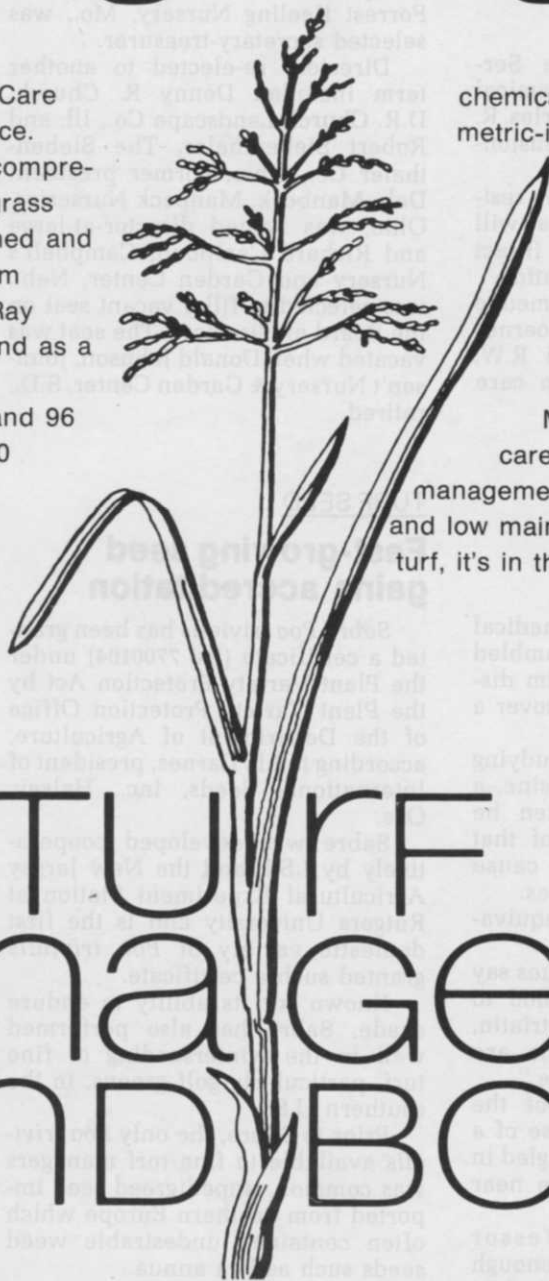
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**EXPANSION**

**Company announces lawn care division**

Environmental Landscape Services, Inc. has formed a chemical lawn care division, said Charles R. Racusin, president of the Houston-based firm.

The new division will offer residential lawn care services that will include fertilizing, weed and insect control, and fungicide application.

Gary Koerner, has been named to head up the new division. Koerner previously worked with the R.W. Collins Co., the largest lawn care company in Florida.

**TREES**

**Cure for Dutch elm found by accident**

A University of Chicago medical student says he might have stumbled across a solution to Dutch elm disease while attempting to discover a cure for cancer.

William J. Elliott was studying ways of synthesizing maytansine, a potent anticancer drug, when he learned a chemical analog of that drug attracts beetles that cause Dutch elm disease in elm trees.

An analog is a man-made equivalent of a natural chemical.

Mr. Elliott and his colleagues say they have developed a method to produce the analog, multistriatin, and that the raw materials are "cheaper to buy than gasoline."

Mr. Elliott says a vial of the chemical is placed at the base of a tree and the beetles get entangled in fly paper when they venture near the attractive chemical.

Josef Fried, the professor directing the research, says enough multistriatin has been produced to attract all the elm tree beetles in North America.

**MANAGEMENT**

**New officers to serve Natl. Landscape Assoc.**

The National Landscape Association recently elected officers to serve the organization through 1980. Frank N. Tomlinson, Tomlinson's Select Nurseries, Calif., was elected

president; Gerald Harrell, Landscapes Unlimited, Texas, was named vice-president; and Joe Wayman, Forrest Keeling Nursery, Mo., was selected secretary-treasurer.

Directors re-elected to another term included Denny R. Church, D.R. Church Landscape Co., Ill. and Robert Siebenthaler, The Siebenthaler Co., Ohio. Former president Dale Manbeck, Manbeck Nurseries, Ohio, was named director-at-large and Richard Campbell, Campbell's Nursery and Garden Center, Neb., was selected to fill a vacant seat on the Board of Directors. The seat was vacated when Donald Johnson, Johnson's Nursery & Garden Center, S.D., retired.

**TURF SEED**

**Fast-growing seed gains accreditation**

Sabre *Poa trivialis* has been granted a certificate (PV 7700104) under the Plant Variety Protection Act by the Plant Variety Protection Office of the Department of Agriculture, according to J.L. Carnes, president of International Seeds, Inc., Halsey, Ore.

Sabre was developed cooperatively by I.S.I. and the New Jersey Agricultural Experiment Station at Rutgers University and is the first domestic variety of *Poa trivialis* granted such a certificate.

Known for its ability to endure shade, Sabre has also performed well in the winterseeding of fine turf, particularly golf greens, in the southern U.S.

Prior to Sabre, the only *Poa trivialis* available to fine turf managers was common, unpedigreed seed imported from northern Europe which often contained undesirable weed seeds such as *Poa annua*.

A rigid certification program in Oregon produces Sabre seed of exceptionally high quality.

A rapid germinating variety, Sabre mixes well with the various fine-bladed ryegrasses, fine fescue, and bluegrass.

**CHEMICALS**

**Granular linuron helps control *Poa annua***

The *Poa annua* problem in Ken-

tucky bluegrass sod fields and golf courses of the northern U.S. may have met its match from granular linuron, according to a recent speech by Paul L. Jacquemin, of O.M. Scott & Sons.

In a presentation to the Kentucky, Ohio, and Iowa Turfgrass Conferences, Jacquemin announced the results of an eight-year, 20-state test program to control *Poa annua*. The tests involved the wide range of soil composition, seasonal temperature effects, application timing, and alternative before-and-after maintenance practices such as fertilizing and watering.

Jacquemin's address includes a description of the *Poa annua* problem, tests performed, a summary of the results, and detailed guidelines for use of granular linuron.

The full text of his speech, titled "A New Concept for *Poa annua* Control in Bluegrass Turf", is available by writing to Bill Boyd, O.M. Scott & Sons, Marysville, Ohio 43040.

**SOD**

**Blue grama grass cultivated from sod**

A USDA range scientist has found that sodding with blue grama grass can help areas that need erosion control and lands disturbed by mining or construction.

William McGinnies of the Science and Education Administration-Agricultural Research in Fort Collins, Colo., studied blue grama for its use on the Central Plains. A native grass, blue grama is highly palatable and nutritious but difficult to establish from seed.

Successful sodding of blue grama requires that soil be moist or wet when it is removed; it be done during periods of active growth (May and June); and sod be irrigated in its new location. Establishing the grass depends on development of new adventitious roots which come from new tillers.

Irrigating transplanted sod three times with one inch or less of water resulted in twice as many new roots as sod irrigated only once. Three irrigations also increased rate of root growth.





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## NURSERY

## Ohio nurserymen award research grant

The Ohio Nurserymen's Assoc. (ONA) recently presented a \$5,500 research grant to Drs. Charles Gilliam, Thomas Fretz, and Elton Smith of the Department of Horti-

culture at Ohio State Univ. for research into the container production of Taxus.

During the past several years there has been increased interest in container production of Taxus. This shift in the production techniques of Taxus is occurring without adequate research. This project will initiate a five-year study to identify the cul-

tural characteristics necessary to successfully produce container-grown Taxus.

The potential advantages of Taxus production in containers are many and include: (1) a reduction in time of production, (2) increased uniformity of the finished product, (3) a reduction in winter desiccation, (4) reduced labor costs of digging and marketing, (5) a greater ease of managing cultural practices such as irrigation, fertilization, pruning, and pest control.

A number of problems are already associated with the practice of growing Taxus in containers: toxicities and deficiencies of minor elements, macro-nutrient deficiencies, light requirement needs, and poor root growth.

Objectives of this five-year project are:

(1) An investigation into the relationship between rates of nitrogen fertilizer, shading, and media on growth of Taxus.

(2) Establishment of deficiency and toxicity ranges of boron, copper, iron, manganese, and zinc as an aid in leaf analysis programs.

(3) An investigation of various means of accelerating growth of Taxus liners in containers immediately after propagation.

(4) An investigation of specific periods of nutrient uptake in Taxus and to determine if fertilizer applications can be timed for more effective utilization.

(5) A comparison of container- and field-grown Taxus for adaptability and survival rates in the landscape.

The \$5,500 grant marks the first substantial commitment to nursery industry research made by the 500 member Ohio Nurserymen's Assoc. It is the hope of the ONA that annual grants of similar amounts can be made to deserving research projects.

The ONA will share all research findings with the national nursery industry as results become available.

*Continues on page 65*

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