(Activity of Cutless® & Rubigan® cont'd.)

curred with the postemergency application of all materials, especially with Rubigan® and the highest rate of Cutless® . Turf injury was also apparent in both species with a preemergency application of Rubigan® . Injury with Rubigan® was most visible as a wilting and spotting. Postemergency injury with Cutless® was visible as tip dieback.

Percent cover was evaluated as the percent (visual estimation) of each pot covered with turf. Cutless® treatments at 2.0 lb ai/A and Rubigan® treatments significantly reduced turf cover for both species. All treatments significantly reduced turf cover when the treatments were applied prior to seed germination. Percent cover was least effected by lower rates of Cutless® when applied as a postemergent treatment.

Height measurements represent the average height in centimeters of the turf canopy. All treatments resulted in reduced growth to both species. The exception to this was Rubigan® applied as a postemergent to annual bluegrass. With this treatment height measurements were not significantly lower than the control.

Clipping weights represent the dried weight in grams/m_2 of the turf plants harvested at soil level six weeks following treatment. All treatment weights were significantly lower than the controls for both species and application times. The consistently measured reduction in growth of both species with any applications of Cutless® or Rubigan® indicates significant activity of the materials on young seedlings of both species regardless of application techniques.

Table 1. The evaluation of Cutless® and Rubigan® applied to annual bluegrass prior to seed germination.[1]

Material	Rate lb ai/A	Phytotoxicity[2]	Percent Cover[3]	Height[4] (cm)	Clipping Weights[5]
Cutless®	0.5	9.0a	76.7b	4.4b	39.7b
Cutless®	0.75	9.0a	40.8c	1.6c	19.6c
Cutless®	1.0	9.0a	33.3c	1.6c	16.3cd
Cutless®	2.0	8.8a	12.8d	1.1c	9.3d
Rubigan®	2.5	4.2b	5.3d	3.6b	10.3d
Control	---	9.0a	100.0a	9.6a	81.6a
$LSD_{0.05}$		0.6	14.1	0.8	8.7

Table 2. The evaluation of Cutless® and Rubigan® applied to annual bluegrass when seedlings are 1 inch in height.[1]

Material	Rate lb ai/A	Phytotoxicity[2]	Percent Cover[3]	Height[4] (cm)	Clipping Weights[5]
Cutless®	0.5	7.7b	93.3ab	3.1b	51.7b
Cutless®	0.75	7.5bc	89.2b	2.9b	47.9b
Cutless®	1.0	6.7c	76.7c	2.7b	44.6bc
Cutless®	2.0	5.0d	58.3d	2.4b	34.3c
Rubigan®	2.5	3.8e	69.2c	8.6a	41.3bc
Control	---	8.7a	100.0a	9.6a	97.9a
$LSD_{0.05}$		1.0	9.3	4.1	11.4

[1] All values represent the mean of 6 replications. Means in the same column with the same letter are not significantly different at the 0.05 level as determined by Fisher's Least Significant Difference test.

[2] Phytotoxicity evaluations are made on a 1 to 9 scale, where 9 = no visible damage to the turf and 1 = complete necrosis.

[3] Percent cover indicates the percent of the pot area covered by turfgrass plants.

[4] Height measurements represent the average height in cm of the turf canopy.

[5] Clipping weights represent the dried weight in grams/m^2 of the turf plants harvested at soil level.

(cont'd. page 14)

Midwest Breezes

Upcoming Events — Mark Your Calendar

November 5 — Annual meeting of MAGCS at Cyprus Inn.
November 10-12 — Penn State Turf Conference
December 9-11 — North Central Turfgrass Exposition
January 6-7 — GCSAA & MAGCS Seminars at Pheasant Run
January 26 - February 3 — GCSAA Conference in Phoenix
January 31 — Prayer Breakfast in Phoenix
March 2-4 — Midwest Regional Turf Conference

Anyone who can tell fish stories like our friend, **Tom Nestor,** is bound to win "Salesman of the Year" award from Toro for the Midwest district. The Toro Company awarded this honor to Tom at it's international convention in Phoenix just recently. Tom was cited for his excellence in sales and service to the golf course irrigation market. Well done, Tom!

Superintendent Wanted: Inwood Golf Course, to supervise grounds and equipment for an 18 hole municipal golf course and adjacent football stadium grounds. Minimum two years experience in golf course maintenance at the assistant supt. level is required. Prefer associate degree in turf management or closely related field. Contact: Allen Cassady, Director, Joliet Park District, 1301 Hosmer Street, Joliet, IL 60435. Deadline is November 28, 1986.

Assistant Superintendent Wanted: Full time position at 18 hole Championship daily fee golf course in the northern Chicago suburbs. Send resume to: Pine Meadows Golf Club, P. O. Box 387, Mundelein, IL 60060.

For Sale: Ideal Reel and Bedknife Grinder, and a Foley Lapper, both for $600.00. Call Chris Staub at 963-7744 or 963-6706.

Water, water, everywhere and not a fall to get your projects done. Talk about being wet! The ground has seldom ever been as saturated as it was in that one period around the end of September and the first of October. There have been times that we have had more rain and times when we had more flooding, but never have I seen a period of such continued rain and in such amounts. In the past after a day or two one could find some areas to mow, but not this time. The fairways seem to have taken the worst of all this, for many courses went 7 to 12 days before they were able to mow. Then when they did, what a mess! Wheel marks, depressions, clippings, clogged reels, scalped turf, ruts and everything else in between. But the bright side, we can now see out of the clean windows of our shops and offices, and the equipment got polished, oiled and greased.

Penn State grads are winners at Wilmette G.C., more next month.

REGISTER NOW!!

Basic Turfgrass Botany & Physiology and Irrigation Part II: Systems Design & Management

The Midwest Association of Golf Course Superintendents and GCSAA proudly present two two-day educational seminars in the Chicago area. "BASIC TURFGRASS BOTANY & PHYSIOLOGY," instructed by Dr. James B. Beard of Texas A&M University and Dr. Jeffrey S. Krans, Mississippi State University, will cover the basics of turfgrass botany and physiology, including the origin and taxonomy of the turfgrass plants; cells, tissues and organs; plant physiology; shoot and root growth and development; seeds and inflorescence. Mowing, fertilization, water management, cultivation, establishment and pest management of the turfgrass plant will be discussed.

Mr. William "Bill" Speelman, product application manager with Toro's irrigation division, and Mr. David D. Davis, independent irrigation consultant, will teach "IRRIGATION PART II: SYSTEMS DESIGN & MANAGEMENT." Covering the design, operation and management practices for energy efficient, water conservative and cost effective golf course irrigation systems, subjects will include economic designing of mainline piping systems, selecting and locating "looped" mains, analyzing the efficiency of sprinkler coverage and selecting sprinklers, valves and controllers. The influence of computers on the system design and management and the overall economics of golf course irrigation will be discussed.

January 6 and 7, 1987
Pheasant Run Resort
St. Charles, Illinois

For Sale

Two reel grinders, one "Ideal" and one "Acme". Both in good condition. $300.00 each. Jacobsen #720 3 point hitch P.T.O. drive leaf sweeper, $700.00. Call — Pete at 349-3344.

For Sale

Toro 5 gang 6 blade reels	$1,500.00
Toro 76" Professional 6 blade reels	1,500.00
Toro 72" Groundsmaster	1,250.00
International Cub Cadet 180 with mower	950.00
Jari Sickle Bar	495.00
1962 Ford Stake Body Truck	3,500.00

St. Mary of the Lake University
Route 45 & 176
Mundelein, IL 60060 (312) 566-6401
Father Schroeder Proctor;
Len Schnepf, Grounds Supt.

Dick Trevarthan had his name in the "Frankfort/Mokena/New Lenox Weekly Southtown Economist" on Wednesday, September 24th, 1986. Seems that Dick is now being required to control possums on when and where they are to die and somehow control their smell once they do die. Good job, if you can do it Dick!

(Activity of Cutless® & Rubigan® cont'd.)

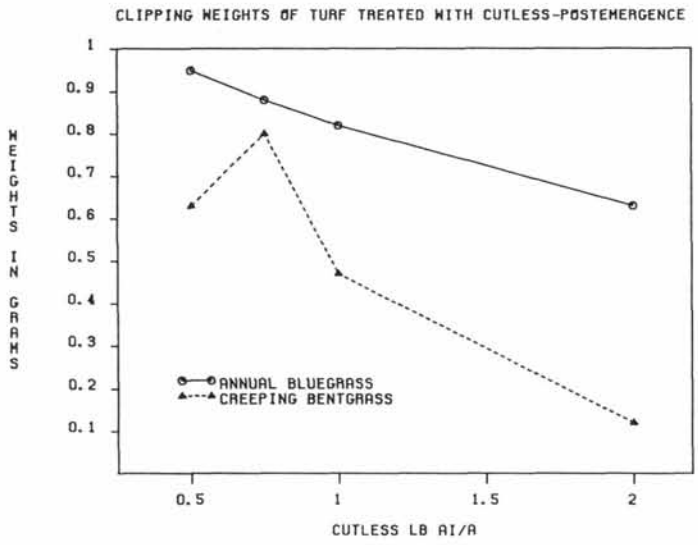


Table 3. The evaluation of Cutless® and Rubigan® applied to creeping bentgrass prior to seed germination.[1]

Material	Rate lb ai/A	Phytotoxicity[2]	Percent Cover[3]	Height[4] (cm)	Clipping Weights[5]
Cutless®	0.5	9.0a	42.5b	1.6c	12.0b
Cutless®	0.75	9.0a	17.5c	1.1c	5.4cd
Cutless®	1.0	9.0a	11.7cd	1.0c	9.2bc
Cutless®	2.0	9.0a	4.0d	0.8c	2.2d
Rubigan®	2.5	2.8b	1.7d	3.7b	3.3d
Control	---	9.0a	100.0a	9.4a	40.8a
$LSD_{0.05}$		0.5	13.3	0.9	5.4

Table 4. The evaluation of Cutless® and Rubigan® applied to creeping bentgrass when seedlings are 1 inch in height.[1]

Material	Rate lb ai/A	Phytotoxicity[2]	Percent Cover[3]	Height[4] (cm)	Clipping Weights[5]
Cutless®	0.5	8.8a	93.3a	2.2c	34.3bc
Cutless®	0.75	8.3a	90.8a	1.8cd	44.1b
Cutless®	1.0	7.2b	51.7b	1.5cd	25.0c
Cutless®	2.0	1.8d	7.3c	0.8d	6.5d
Rubigan®	2.5	3.3c	39.2b	7.4b	35.4bc
Control	---	8.7a	100.0a	10.4a	58.2a
$LSD_{0.05}$		0.6	13.3	1.1	13.1

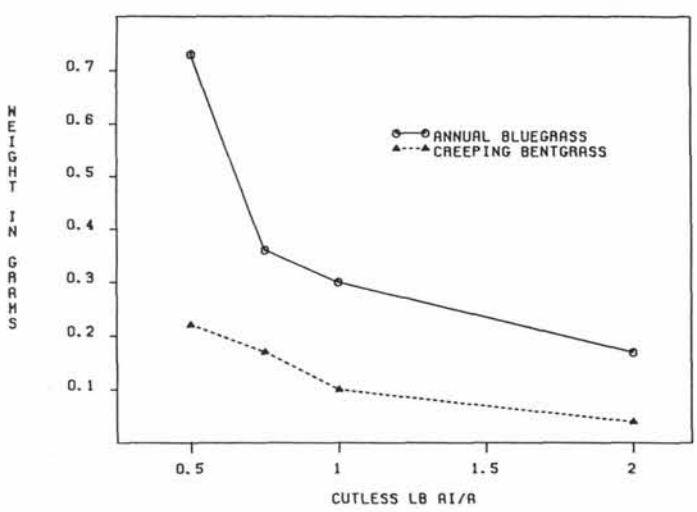
[1]All values represent the mean of 6 replications. Means in the same column with the same letter are not significantly different at the 0.05 level as determined by Fisher's Least Significant Difference test.

[2]Phytotoxicity evaluations are made on a 1 to 9 scale, where 9 = no visible damage to the turf and 1 = complete necrosis.

[3]Percent cover indicates the percent of the pot area covered by turfgrass plants.

[4]Height measurements represent the average height in cm of the turf canopy.

[5]Clipping weights represent the dried weight in grams/m^2 of the turf plants harvested at soil level.



ASGCA President Cites Reasons Behind Demand for Golf Courses

Why is the demand for municipal golf courses so strong?

Ken Killian, president of the American Society of Golf Course Architects, pinpointed several reasons why more communities are building new golf courses and predicted that this boom will continue for the next decade.

He noted that there is a pentup demand for golf facilities generally, since high interest rates choked development for several years and that "we now are playing catchup during this period of lower interest and bond rates."

Even more importantly, is the fact that about one-third of the nation's golfers are now women, according to the National Golf Foundation. "We certainly haven't lost the men, but with the influx of women, existing facilities are hard-pressed to accommodate the demand. In areas without a municipal course, municipalities are finding that new facilities are an immediate profit generator that can be used to fund a second course or other recreational programs," Killian stated.

The ASGCA president also feels that the general trend toward better conditioning and more exercise has helped contribute to the demand for more high-quality golfing facilities. "Also", Killian added, "there are more people in retirement than ever before, and many of them are avid golfers."

As communities compete for new industry, they often find that the amenities of the area may well be the deciding factor in a company's decision to relocate. "Studies show," Killian pointed out, "that a good golf course is very important to executives who must relocate a substantial number of managers into a new area."

The ASGCA president said that golf courses can serve as a catalyst for community improvement in addition to providing an aesthetically-pleasing green belt.

- A residential developer donating land for a park site adjacent to another parcel owned by the community could provide enough additional land for a golf course. Or, a developer might be granted a variation for higher-than-normal density housing in return for donating land for a community golf course.
- A landfill, rather than being used for a non-revenue park, can be transformed into a profitable municipal golf course, as has been done in many communities across the country.
- In a similar vein, if a golf course is located adjacent to the water treatment plant, it not only will put that land to profitable use, but serve as an outlet for effluent that does not require expensive treatment.
- Some developers are planning to incorporate a municipal golf course into a combination office park and residential community.

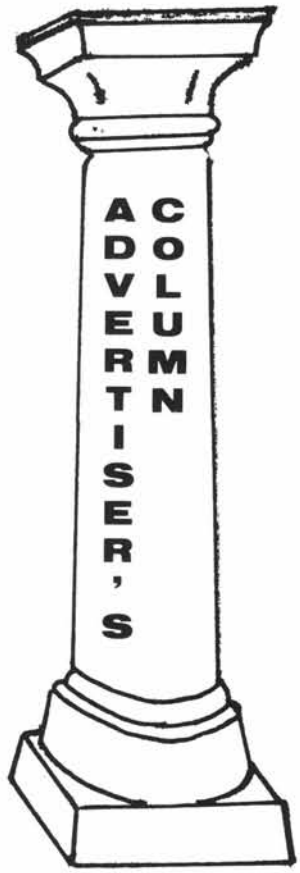
Killian noted that communities considering a municipal golf course may obtain a free planning brochure by writing the American Society of Golf Course Architects, 221 N. LaSalle St., Chicago, IL, 60601.

He added that municipal golf courses no longer are "second class citizens in the world of golf. Some of the best new courses being designed are municipal layouts and that trend will continue as city and recreation department personnel recognize that courses are appreciated by the general public and generate substantial income."

(cont'd. page 18)

Support Our Advertisers

"Lebanon Total Turf Care"



Lebanon Total Turf Care is wholly owned by Vernon Bishop, and was started as a farm fertilizer producer in 1947. By 1949 Lebanon had made an agreement with Sears Roebuck & Co. to manufacture products for resale to the homeowners. In 1952, Lebanon began working with Allied Chemical and they began production of a "Urea-Form" controlled release fertilizer developed at Penn State University.

In 1973, Lebanon acquired the Agrico Lawn and Garden Division which included a national distribution network, a plant at Danville, IL and experienced personnel for continuity and marketing experience. Frank Ross was part of this experienced team. Frank served the Chicago area Superintendents up to his retirement just a couple of years ago.

Country Club Fertilizers will mark its' 20th year in the Golf Market in 1987. Country Club 18-5-9 and 18-4-10 were both introduced in 1967 by IMC (which was acquired by Agrico in 1971). Lebanon pioneered in the use of Methylene Urea on its' professional product lines for the maintenance of today's high tech turf.

Lebanon also purchased the Eli Lilly fertilizer business, which consists of the "Greenfield" homeowner brand. The name was then changed to the "Greenview" and "Green Gold".

Production now comes from three turf & garden plants, over twenty farm product plants, with storage at Lebanon, PA and Danville, IL. In addition to the fertilizer industry, Lebanon markets just about every turf chemical for distribution to 42 states.

Jim Walsh is the local Sales Manager for Lebanon. Randy Rogers is the Midwest Division Sales Manager. The Professional Division within Lebanon has 27 salesmen covering a 42 state area. It is our responsibility to introduce our Country Club Products and to service our Distributors. Our sales are through your local Distributors. Combining our efforts with the distributor, our sales have tripled what they were ten years ago. As research continues and a solid relationship with the superintendents, our distributors, and the universities, a constant growth is expected.

Lebanon Total Turf Care now lists 77 standard products in our "Lawn and Garden Product Label Information and Material Safety Data Manual," from simple blends to homogeneous products and combination products.

As Paul Mengle, the National Sales Manager said, "You can't be everything to everybody, but you can offer good and dependable products at a fair price and back it up with service."

"Operating Figures for a Typical Municipal Golf Course"

	Revenue	Expenses	Profit
MIDWEST (18 Holes).	$1,003,541	$894,758	$108,783

Based on:

3,629 Associate Rounds (18-hole weekday fee: $10)
27,294 Non-Associate Rounds (18-hole weekday fee: $15)
32,453 Season Rounds (Unlimited play season ticket: $320)
63,376 Total Rounds

Operating Revenues

Green Fees	$511,879
Reservation Fees	10,480
Pro Shop Sales	80,877
Food Service	286,083
Instruction Services	22,332
Rental Services	106, 672
Club Repairs	3,218
Total Operating Revenues	$1,003,541

Operating Expenses

Salaries & Wages	$218,300
Contractual Services	92,621
Commodities	48,499
Fixed Charges & Obligations	51,086
Overhead Debt	154,937
Pro Shop	61,287
Food Service	206,335
Instruction Service	18,295
Rental Service	12,221
Club Repair	2,135
Miscellaneous	29,042
Total Operating Expenses	$894,758
Net Income for Year (Profit)	$108,783

Proper Care and Planting of Trees

The Real Cause of Many Tree Problems

Insects and microorganisms are not the real cause or starting point of many tree problems. These organisms are often secondary agents that attack weakened, wounded, improperly treated, neglected, and generally unhealthy trees. Poor tree health is a major worldwide problem. Fighting the secondary agents that are often very obvious, or the symptoms of poor health, will not solve the basic problem. We must start now to attack the real causes: the starting points of poor health. The major organisms responsible are PEOPLE!

Once we recognize that we are often the problem, we can do much to solve it. Here are some brief guidelines for you, the homeowner, that will help you keep your trees beautiful, safe, and healthy.

Give Trees a Good Start

Plant the right tree in the right place.

Do not plant:
- pin oaks in alkaline soils
- trees in old alkaline building rubble
- willows in dry soils, pines in wet soils
- birches in shade, dogwoods in unprotected open sites

Learn the biological requirements of your trees.
Do not plant unless you plan to maintain.

Plant properly

Do not:
- crowd trees in small holes with compacted soil
- over-amend the soil with humus
- fertilize at planting time

Do prune dead and dying branches and roots.

Keep grass away

Do not:
- water grass heavily near trees that normally grow on dry sites
- lime grass heavily near trees that grow best in acid soils
- wound trees with lawnmowers and other machines

Heavy use of herbicides may harm trees.

Brace, but not too tightly.

Do not:
- tie young trees so tightly that they do not move
- leave braces on after tree is established
- kill bark with cords, wires, bands, etc.

Prevent wounds

Do not:
- allow anyone to climb your tree with spikes
- allow heavy construction machines near your tree
- park cars near trees

Prune correctly

Correct pruning is the best thing you can do for your tree. Here are the guidelines:

Natural target pruning

1. Locate the branck bark ridge (BBR). (see Figure 1.)
2. Find target A — outside BBR.
3. Find target B — where branch meets collar.
4. If B cannot be found, drop an imaginary line at AX. Angle XAC equals XAB.
5. Stub cut the branch.
6. Make final cut at line AB (with powersaws make final cut on upstroke).

Do not:
•make flush cuts behind the BBR
•leave living or dead stubs
•injure or remove the branch collar
•paint cuts

The best time to prune living branches is late in the dormant season or very early in spring before leaves form. Dead and dying branches can be pruned anytime. Use sharp tools! Make clean cuts. Be careful with all tools. Safety first!

Topping

Topping trees is a serious injury regardless how it is done. Avoid it if possible by starting to prune early in the life of the tree to regulate its size and shape. If you must top cut, follow these guidelines:

Cut line DE at an angle approximately the same angle as the angle of the BBR. Do not leave a stem stub. Do not paint the cut. Know your safety limits — call professionals when the job is too big for you.

Wound Dressings

Wound dressings do not stop rot.

Do not:
•apply house paints or wood preservatives.
•apply heavy coats of any material.

Research shows that wound dressings do not stop decay or stall rot. Trees have been responding effectively to their wounds for over 200 million years. Do not interfere with this natural process. Keep your tree healthy and it will take care of its wounds. In a short time the wound surface will blend perfectly with the tree bark.

Tree Treatments

Treat wounds

If trees are wounded, remove injured bark with a sharp knife. Make cuts as shallow as possible. Forming an elongated ellipse is not necessary. Make all margins rounded; do not point tips. Do not enlarge the wound. Do not paint. Do everything possible to maintain health — water, fertilize, prune.

Holes for draining water

Do not bore holes to drain water from cavities.

Drain tubes may be used for wetwood materials, but such treatment will increase the column of internal wetwood.

Cavities

If cavities are to be filled, do not clean so thoroughly that the boundary between decayed wood and sound wood is broken. Fill with nonabrasive materials. Leave for professionals.

Injections and Implants

If you plan to have chemicals injected or implanted in your trees, make certain that it is done only by highly skilled professionals. Check injection and implant holes after one season to make certain they are closed. Injection and implant holes should be very small and shallow of the tree base, not in the roots.

Cable and Brace

If rot is present put rods entirely through the stem, and use round or oval washers on both sides. Washers should be seated on the wood, not deep in the wood or on the bark. Cable should allow tree to move slightly. Leave to professionals.

Help Trees Stay Healthy

Before you fertilize or consider treatments for microelement problems, have a soil test done. Your tree may require soil

(cont'd. page 20)

acidification before fertilization, or treatment for microelement problems. Fertilizers add elements essential for healthy growth. Fertilizers are not tree food!

Trees get their energy from the sun. Leaves and needles trap energy in a molecule of sugar. Sugar is tree food. Keep leaves and needles healthy by timely treatments so trees can get their food. Keep soils free of compaction so roots can get water and essential elements. Do not over fertilize.

Some insects and microorganisms DO start tree problems. When in doubt about what to do, contact the extension agents from your county, state, or university, or ask the United States Forest Service or professional arborists.

Check for potential hazards:

•large dying and dead branches
•rot in roots and base (fruit bodies of fungi are signs of rot)
•large deep vertical cracks on opposite sides of trunk. Be on the alert 5 to 10 years after construction. Have hazardous tree crowns reduced by professionals.

DON'T FORGET WILDLIFE. They need living and dead trees for survival. Consider them in your plans.

Learn about trees.

Prepared by Dr. Alex L. Shigo, plant pathologist, USDA Forest Service, Northeastern Forest Experiment Station, P. O. Box 640, Durham, NH 03824.

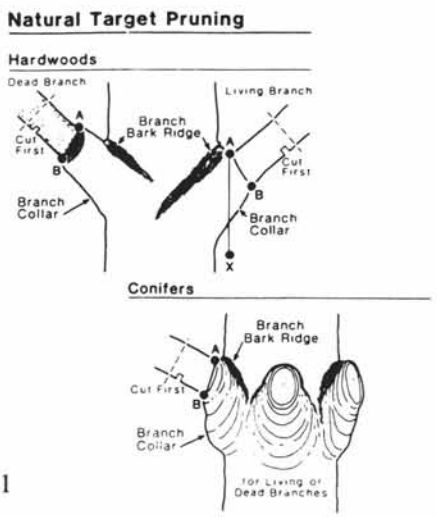


Figure 1

"Autumn Leaves"

What a Scene, like a marvelous Dream,
Autumn's Floral Landscape once more.
Beautiful Leaves color the Trees,
Framing Greens and Fairways We Adore.
The Spectacular Panorama Autumn brings,
Caps the Year in Style.
Seems It knows Winter Winds will blow,
In just a little while.

Kenneth R. Zanzig