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NEW GREENS MOWER

Britain's newest, best greens mower for perfect turf grooming. Ten high-speed knives of NEW super-tough, impact-resistant steel, together with an extra-thin bottom blade combine to give the closest possible cut — faster with the Auto-Certes.

Dual drive provides complete mower control.

Power-driven wheels provide rapid, effortless site-to-site transportation.

Brush and comb set and outrigger rolls available.

Powerful whisper-quiet engine starts first time—every time.



To obtain full information of the Ransomes range contact one of these importers: —

Warrens Turf Nursery
8400 West 111th Street, Palos Park, Illinois USA
Telephone 312 974-3000
Importers for the USA

Duke Lawn Equipment
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Telephone 637-5216
Importers for the Province of Ontario

Morin Equipment Inc.
2075 Branly (Centre Industriel STE-FOY)
Quebec 10
Telephone 418 681-7741
Importers for the Province of Quebec

Morin Equipment Inc.
721 Halpern, Dorval, Montreal, Que.
Telephone 514 486-7881
Importers for the Province of Quebec
and the Maritime Provinces

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RANSOMES



BEARD

Continued from page 26

ences in the mineral content of the leaf tissue was observed which could be contributed either to the level or source of nitrogen fertility applied.

Comments: Distinct affects of both nitrogen fertility level and source were apparent in terms of the amount of shoot growth, per cent dry weight and mineral composition of the leaf tissue. Shoot growth response is one of the criteria utilized by turfgrass researchers in measuring the response of various fertility treatments. A controlled, medium to low rate of shoot growth is preferable to a high rate of shoot growth under normal turfgrass culture. A rapid production of leaf tissue exhausts the carbohydrate reserves and results in reduced overall vigor and poor recuperative capability from stresses caused by

disease, drought, heat and cold. The professional turfmen should adjust the nitrogen fertility program to maintain a relatively moderate, controlled rate of shoot growth and the associated deep root system rather than promoting rapid growth and the associated green, succulent leaf tissue having a restricted root system.

The distinct increase in potassium content of the leaf foliage at higher nitrogen rates is of particular interest. The importance of maintaining a balance between nutrients is becoming more and more evident in turfgrass nutritional research. Severe problems can arise if higher rates of potassium fertilization are not utilized on turfs maintained at higher nitrogen fertility levels.

Under the conditions of this study, the activated sewage sludge released nitrogen at a rate which was more like the readily available sources, such as ammonium nitrate, ammonium sulfate, sodi-

um nitrate and urea, than the slower release materials, such as processed tankage and ureaformaldehyde. The exception to this observation was in the fall of the year when cooler temperatures reduced the rate of nitrogen release from activated sewage sludge. This is an important factor in climatic regions where winter injury is a problem, since a relatively slow growth rate is desired for maximum winter survival.

The distinct properties and turfgrass responses associated with each nitrogen carrier illustrates that the value of a nitrogen carrier depends on how it is used. No one carrier possesses all the characteristics desired for turfs. Thus, it is important to select the nitrogen carrier possessing the characteristics which best suits the particular conditions under which it is being utilized.

Effect of varied rates of atrazine and simazine on the es-

Continued on page 36

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Jet-O-Matic is the finest portable toilet made! It flushes, just like the toilet you have at home; and it is completely self-contained, re-circulating, battery-operated (just like those we have on jet airliners). The contemporary fiberglass-enclosed Jet-O-Matic offers clean, odor-free facilities that will be appreciated by even the most discriminating golfers and guests.

Jet-O-Matic—Beats the sanitation handicap.

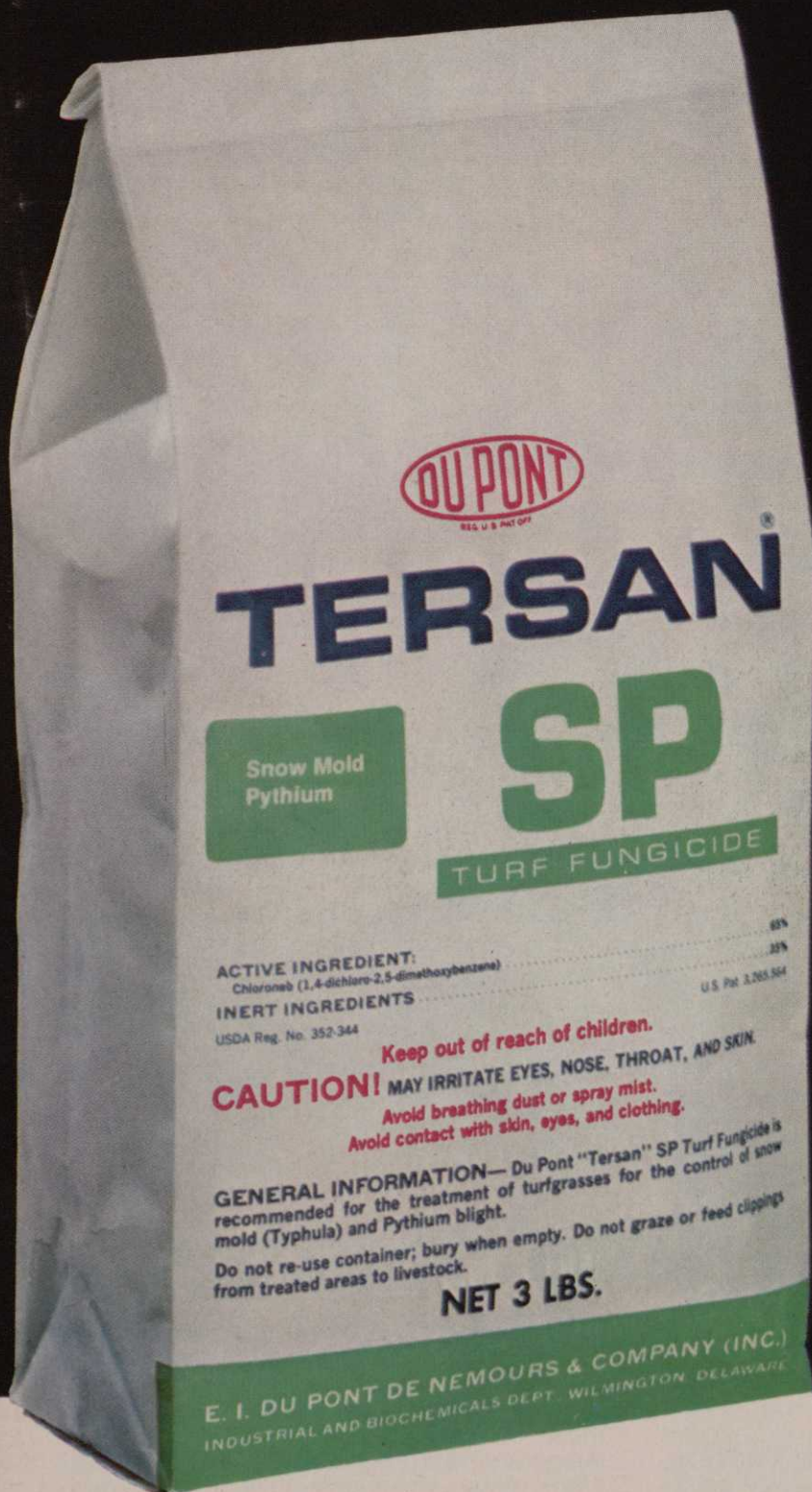
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NEW FROM DU PONT



For Control of Pythium

Check these advantages

- ☐ **EFFECTIVE CONTROL**
(thoroughly tested at universities)
- ☐ **LOW COST**
(about \$1.20 per thousand square feet)
- ☐ **NON-MERCURIAL**

For control of Pythium Blight, spray "Tersan" SP at rate of 4 oz. per 1,000 square feet mixed in 3 to 5 gallons of water. Apply during periods of high temperature and humidity—favorable to the development of disease. Repeat in 5 to 7 days if these conditions persist.



TURF PRODUCTS

With any chemical, follow labeling instructions and warnings carefully.

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**We've led the field for 54 years...
but what have we done for you lately?**

We bring you the most revolutionary concept in greens mowing

... the TORO '69 GREENSMaster†. What's revolutionary? Imagine a free-floating cutting unit that hugs the ground, eliminates digging or gouging while it gives you a constant cutting height on all greens. That's revolutionary.

The cutting unit is isolated from the traction and catcher sections. So engine vibrations are not transmitted to the cutting reel — weight of the grass clippings can't affect the cutting height. And the entire cutting unit can be removed and replaced in less than a minute!

The GREENSMaster is relatively lightweight... 147 pounds, so this, too, makes it easy to handle and minimizes turf compaction.

You can customize it to fit any job. There are brush, comb and roller attachments

you can add to meet any and all grass growing conditions.

And that's only part of the story. We hope it's enough to keep you thinking TORO.

P.S. TORO is also a leader in automatic underground sprinkler systems for golf courses, athletic fields, parks and industrial property. Your TORO distributor has all the facts.

**We keep thinking of you.
That's how we keep our reputation.**

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Minneapolis, Minn. 55420

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your private putting green

Now possible with new 0217® Brand Fylking Kentucky bluegrass lawn seed or sod! Fylking forms a dense turf with the greenest green, beginning in early spring and lasting into late fall. It doesn't require special golf course care, yet thrives when cut low as 1/2 inch for your own putting green. A hardy bluegrass originating in Svalof, Sweden, Fylking is drought and winter tough, doesn't show traffic wear and possesses more resistance to leafspot and stripe smut than most other bluegrass varieties. Proven in 12 years of international tests.

"Putt" down to your seed distributor, specify 0217® Fylking Kentucky bluegrass (U.S. Plant Patent 2887), and have your own home golfing green.



**FYLKING
KENTUCKY
BLUEGRASS**

Jacklin Seed Co., Dishman, WA 99213

For more information circle number 237 on card

BEARD

Continued from page 32

establishment of several zoysia strains.

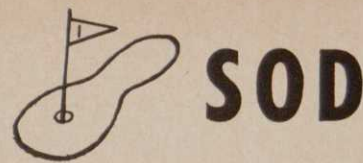
R.E. Engel, C.R. Funk and D.A. Kinney. 1968. *Agronomy Journal*. 60:261-262. (from the Department of Soils and Crops, Rutgers, the State University, New Brunswick, N.J. 08903).

The objective of this study was to determine the relative tolerance of several strains of zoysiagrass to applications of various rates of simazine and atrazine during vegetative establishment. The cultivars of zoysiagrass utilized in this study were Meyer and Midwest plus several experimental selections. Atrazine and simazine were applied at rates ranging from 1.25 to 7.5 pounds per acre. The stolons were planted on July 15 and the herbicides were applied the next day. Frequent light watering was practiced to insure stolon establishment. Evaluation of injury to the various zoysiagrass strains was determined throughout the initial establishment year. Data taken included plant crown diameters and rate of stolon growth.

Meyer was more tolerant than Midwest to the herbicide treatments. Atrazine caused more injury than simazine, especially on the less tolerant Midwest strain. The 1.25 pounds per acre rate of simazine did not give any significant reduction in zoysiagrass stolon survival and growth. However, atrazine applied at a similar rate did give significant reductions in stand and rate of stolon growth of Midwest. As the rate of application of simazine and atrazine was increased above the 1.25 pounds per acre rate, the degree of plant survival and rate of stolon growth was reduced proportionally. □

Other papers of interest:

1. *Sands used in soil mixes*. J. H. Madison. 1969. *California Turfgrass Culture*. 19(1):3-5. (from the Department of Landscape Horticulture, University of California, Davis, Calif. 95616).



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Lawn Spreader is
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When you select a Cyclone, you are getting the benefit of 101 years of broadcast spreading equipment know-how... experience that has made Cyclone the first choice of professional turf men.

- Broadcasts material accurately—evenly
- Stripe-free performance
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Ask about the other Cyclone models that are ideally suited for golf courses.

THE CYCLONE SEEDER CO., INC.
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**Top dressing
used to be
a drag**

...IT STILL IS!

The Ryan Spread-Rite is the most versatile spreader on the market. This self-propelled machine evenly spreads pulverized or screened *top dressing*, sand or salt (for icy walks and drives), most any material... fine or coarse.

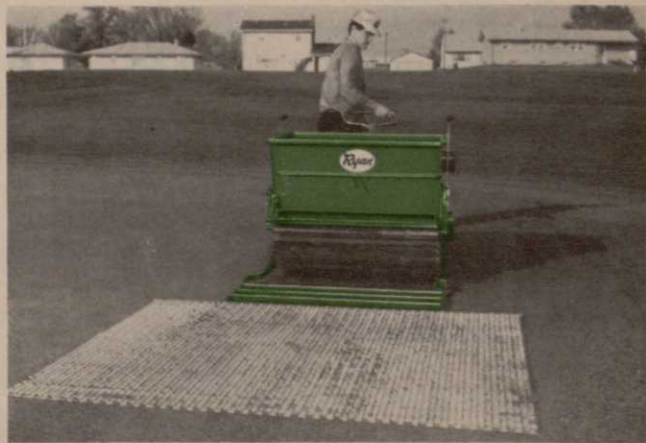
All controls are within easy reach of the operator. For example, he can control and vary the thickness of the spread (up to $\frac{1}{2}$ "), and operate clutch, agitator and throttle all while he's operating the machine. Steering is effortless.

It can top dress, drag or brush in material in one easy operation. It levels, controls thatch and grain. Takes just one man to do the job.

A rugged, revolving agitator breaks up the lumps and feeds material to the metering gate. It's designed for easy, thorough clean-up and is gentle to the turf.

The typical, complete Ryan Turf-Care Fleet includes Sod Cutters, Rollaire, Ren-O-Thin, Mataway, Greensaire, Grounds Groomer and Tracaire. These Ryan products help to build better turf around the world.

For information about the Spread-Rite and other fine Ryan turf-care products, write for the new "Turf Equipment" catalog.



A large dragmat may be attached to do two operations at one time. Or, brushes may be added to the drag section for brushing in top dressing.



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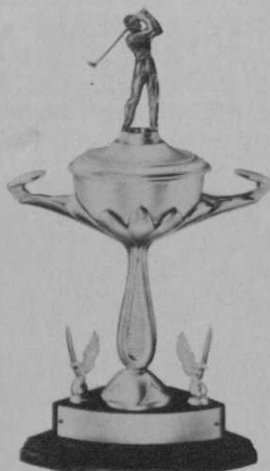


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by Fred V. Grau

ANSWERS TO TURF QUESTIONS

Outlook for the sensible seventies

Were I young today I would choose turf as my life's work, just as I did in 1927 when starting my college career. I would embrace turf more warmly now because I have seen many of the rewards that it offers. No profession that I know offers such a wide variety of opportunities to the eager young person who *wants* to learn.

Turf is a multi-billion dollar industry that covers a broad field of goods and services. It is no haven for the shirker, but there are ample rewards for the energetic and the industrious. It is a thrill to go to the International Turfgrass Conference and to talk to some of the bright happy young men who are securely launched on their careers in turfgrass. As one talks with them, one becomes infected with their enthusiasm and realizes that they learned from good teachers who believed in them and who motivated them to perform to the limits of their capacities. Let us be eternally grateful to dedicated teachers who have the capacity to guide and to motivate young people. Let us resolve to bend every effort toward the goal of training

more outstanding teachers to insure the future of the turfgrass industry. Let us resolve to train more teachers who can motivate young men to move into positions of leadership and give them the necessary training.

One day soon the extension services in the 50 states will find ways to increase their staffs to include more turfgrass extension specialists. There are more taxpayers interested in better turf than in any other phase of agriculture. County agents are realizing that turfgrass rapidly is becoming a vital part of their economy and that requests for assistance are increasing.

Research workers in turf may be found in many disciplines at many different types of institutions the world over. They cover soils, grasses, fertilizers, pesticides, pathology, entomology and other schools that impinge upon the world of turf. Funds for research are meagre. Much depends on "grants" from industry. More funds must come from tax-supported sources. Private industry contributes vast sums of money and years of effort to perfect products that can produce better turf.

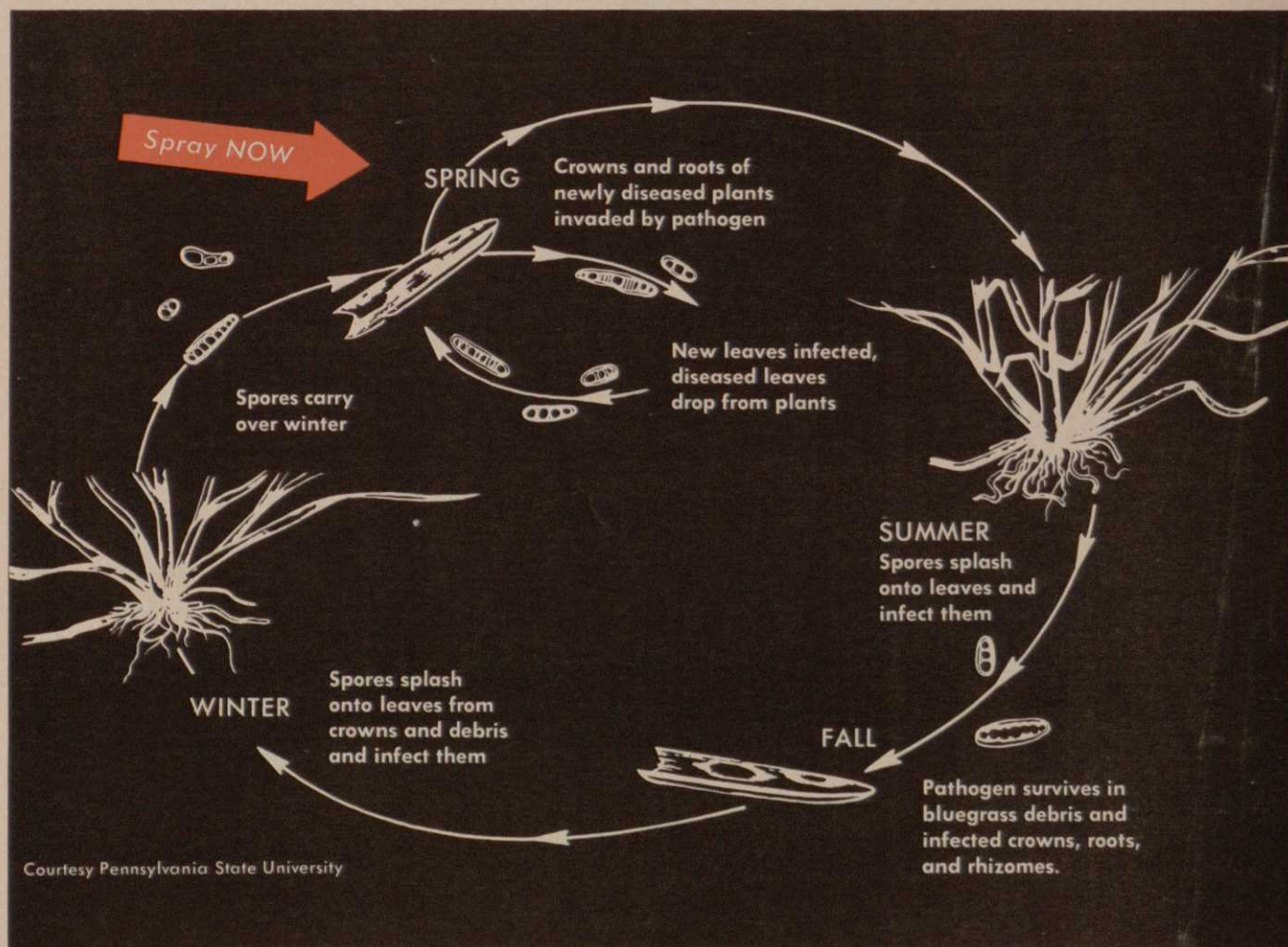
In years past a salesman in industry was known as a "peddler." No more! Today, and in the future, salesmen help to disseminate accurate, useful information while they represent their employers and his products. This approach takes talent! Industry is looking for bright well-trained personnel who are a credit to the firm and to the turfgrass industry.

As we move into the sensible seventies we will see a significant trend toward professionalism as more trained men are motivated to improve their standards. We must train more good teachers who, in turn, can train the future turfgrass managers, extension specialists, research personnel and representatives of industrial firms. The industry will command respect and will grow in stature as each of us continues to improve his professional image.

Continued on page 40

Spray Now with New Du Pont **TERSAN**[®] **LSR** to Control Leaf Spot and Melting Out

LSR
TURF FUNGICIDE



Stop the Helminthosporium Disease Cycle *Before* it Starts.

The above diagram shows the yearly cycle of Helminthosporium. Note particularly how this disease survives throughout the winter—ready to begin its destructive work again, in early spring. You can avoid the problem it causes by breaking the cycle—by spraying new Du Pont “Tersan” LSR now. In tests, this new non-mercurial fungicide has been shown to be more ef-

fective in the control of leaf spot diseases caused by Helminthosporium than Du Pont Parzate[®] C, which it replaces. And for still another plus, it controls large brown patch.

For full information on new “Tersan” LSR and other Du Pont Turf Products, just call your golf course supplier... your service agency.

With any chemical, follow labeling instructions and warnings carefully.



Better things for better living ...through chemistry

For more information circle number 176 on card

Q.—Are you still "high" on Kentucky 31 fescue for turf on golf courses? What are the pitfalls?

(Maryland)

A.—Kentucky 31 fescue is an excellent turfgrass if it is understood and if it is used properly where it

belongs. It will be most useful in the transition zone where it can bridge the gap between warm- and cool-season grasses where neither can be depended upon year in and year out. In this zone it is providing good fairway turf where it has been seeded heavily (seven to eight pounds seed to 1,000 square feet) in later summer; where it gets six pounds N per thousand annually;

and where it is cut seven-eighths to one inch high with sharp mowers. Irrigation can be cut to the bone, and weed control is practically unnecessary.

It is a good grass for roughs, but with bent or bluegrass fairways the odd escaped plant can be mighty objectionable. Interest in this grass is growing. I can't list all the pitfalls but I can help evaluate if someone seriously is considering using it.

Q.—We had good snow cover until just recently, and now I notice an unusually heavy attack of snowmold. We fed late with a high-nitrogen (inorganic) complete fertilizer. Could this possibly have contributed to the snowmold?

(Minnesota)

A.—The chances are very good that the late feeding predisposed the grass to snowmold attack, particularly so since you used inorganic N. Under these circumstances, a slow-release material would be far safer. I would hope that you used mercury as a preventive.

Q.—We keep hearing about the American Society of Agronomy. Would I, a golf course superintendent, be eligible for membership? Would it be to my advantage to hold membership? If I decide to do it how would I go about it?

(Texas)

A.—The American Society of Agronomy is the largest scientific society of its kind. Turfgrass has been a part of A.S.A. since 1946. Many turfgrass articles reporting research are printed in the Journal and other publications of the society. At the annual meetings there is a meeting of Division C-5, the turfgrass division.

Yes, you are eligible for membership. You will get more out of being a member if you like to read research papers and if you would attend the annual meetings.

If interested, write to Matthias Stelly, Executive Secretary, 677 S. Segoe Rd., Madison, Wis. □

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MEMO TO: GOLF COURSE SUPERINTENDENTS

FROM:

Warren's TURF NURSERIES

WE HAVE THE CORRECT GRASS FOR EACH LOCATION AND EVERY USE AT WARREN NURSERIES ACROSS THE NATION, FROM NEW YORK TO CALIFORNIA.

Following is a schedule of the types, strains and species of grasses produced at the various Warren Nurseries (see code for the growing location).

NURSERIES WHERE GROWN
(see code below)

TYPE STRAIN OR SPECIES	IL	W	IN	N	O	M	NE	K	MO
Warren's A-20 Bluegrass	IL	W	IN	N	O	M	NE	K	MO
Warren's A-34 Bluegrass	IL	W	IN	N	O	M	NE	K	MO
Warren's A-10 Bluegrass	IL	W	IN	N	O	M	NE	K	MO
Warren's Blue Grass Blend	IL	W	IN	N	O	M	NE	K	MO
Merion Blue Grass	IL	W	IN	N	O	M	NE	K	MO
Meyer (Z-52) Zoysia Grass	IL	IN	N						
Creeping Bent Grass Sod & Stolons	IL	W	IN	N	O	M	NE	K	MO
Toronto (C-15) & Cohasey (C-7)	IL	W	IN	N	O	M	NE	K	MO
Penncross (Sod only)	IL	W	IN	N	O	M	NE	K	MO
Nimisola (Stolons only)	IL	W	IN	N	O	M	NE	K	MO
Pennpar (Sod & Stolons)	IL	W	IN	N	O	M	NE	K	MO
Warren's Low-Cut Bluegrass Blend	IL	W	IN	N	O	M	NE	K	MO
Warren's Hi-Cut Bluegrass Blend	IL	W	IN	N	O	M	NE	K	MO
Bermuda Grass Sod & Stolons	IL	W	IN	N	O	M	NE	K	MO
Tifgreen, Tifway, Santa Anna	IL	W	IN	N	O	M	NE	K	MO
Hiway Sod	IL	W	IN	N	O	M	NE	K	MO

NURSERY CODE
Growing Areas of Warren's Fine Lawn and Golf Course Grasses

Illinois	IL	California	C
Wisconsin	W	Minnesota	M
Indiana	IN	Nebraska	NE
New York	N	Kansas	K
Ohio	O	Missouri	MO

NOTE: A word about Warren's Grass developments and discoveries
WARREN'S® A-20 BLUEGRASS rated highest in disease resistance by leading universities engaged in turf grass research. It greens up sooner in the spring and stays green longer in the fall. Recovers from injury sooner, takes a short cut

WARREN'S® A-34 BLUEGRASS is tolerant of up to 65% of the daylight hours in shade. It is a vigorous grower and can be mowed down to 3/4 inch in open or slightly shaded areas.

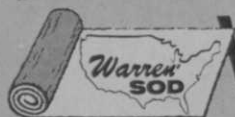
WARREN'S® A-10 BLUEGRASS is excellent in hot humid areas where bluegrass usually has trouble. It is a vigorous grower. It is fine-leaved and the color is a beautiful dark green.

Write for address of nearest nursery or franchise grower of Warren Grasses or look in your yellow pages

Keep the grass you plant on your tees, fairways or greens healthy and green with **WARREN'S LAWN FOOD** used to produce the finest in lawn and golf course grasses at less cost.

(The world's largest, most experienced and one of the oldest growers of fine lawn grasses)

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