Northrup King turf gets trampled, torn, squashed, and scuffed and it still looks great.

> But that's not news to you.

The days when turf just laid around looking pretty are long gone. Now your turf has to be pretty-and pretty tough, too. Tough enough to take all kinds of wear and still go on looking terrific.

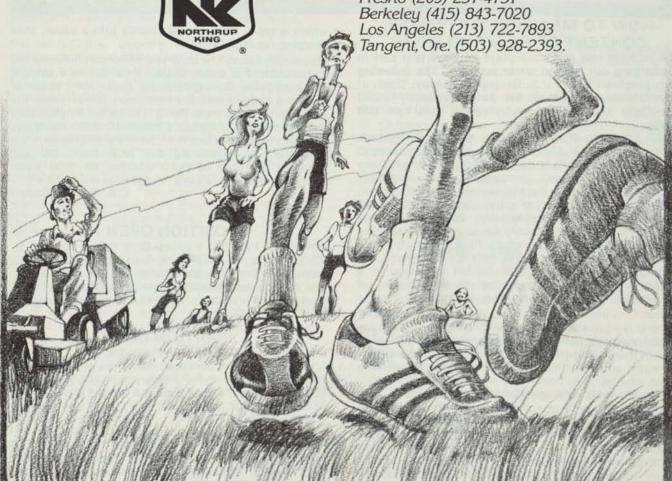
That's just why so many pros like you specify turf seed from Northrup King. For years, Northrup King has given pros all they need—low maintenance varieties, winter hardy blends, special mixes for specific geographic problems, and expert help in selecting the right one.

And no matter what Northrup King turf seed the pros use, they get turf that's good looking and hard working.

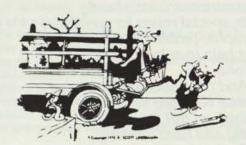
Find out more about quality turf seed from Northrup King. Talk to your Northrup King representative or distributor.

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HOW TO MEASURE THE WATER CONTENT OF RAIN AND SNOW

Water from rain and snow plays an important part in recharging our ground water supplies. The following was prepared by the U.S. Geological Survey, Dept. of the Interior, to answer the most frequently asked questions about water equivalent of both rain and snow.

Rain: One inch of rain over one acre (43,560 square feet) amounts to 27,154 gallons of water. What happens to this water depends on several factors, amongst them being rate of rainfall, topography, soil condition, humidity, vegetation density, extent of urbanization, etc. Of the total amount of water USGS estimates that 25% would run off immediately, about 15% would evaporate, about 40% would be taken up by surface soils and the other 20% would finally filter into the aquifers. These figures can of course vary greatly, for example the direct runoff would be excessive in a highly urbanized area because of the density of pavements, roads and other impervious areas.

Snow: One inch of snow falling evenly on one acre of ground is equivalent to about 2,700 gallons of water say USGA hydrologists. This figure however is based on rule of thumb that 10 inches of snow is equal to one inch of water and this figure can vary greatly depending upon whether it is heavy wet snow or powdery snow. Wet snow has a very high water content and four or five inches of this type of snow may contain one inch of water. The dry powdery snow may require 15 or more inches to equal one inch of water. Thus one inch of very wet snow over one acre might amount to more than 5,300 gallons of water while one inch of powdery snow might only yield 1,300 gallons of water. Not all snow is converted to liquid either for some of it "sublimates"

which is going from a solid directly into a vapor, thus skipping the liquid state.

Measuring snow: The do-it-yourselfer can measure the water content of snow. Collect a sample in a straight sided container having one end open, don't spoon or pack the sample into the container, rather press the container into the snow filling it to its full length. After the snow is melted measure the depth of the liquid and compare this to the depth of the snow originally in the container. By measuring the total snow fall and applying the ratio of water content the total water content of the snowfall in a limited area is estimated.

C.E. [Scotty] Stewart

POSITION OPEN

Ventura 21 Inc., 375 Ventura Club Drive, Roselle, IL 60172 wants to employ a working supervisor to maintain a five hole golf course and 60 to 70 acres. Two years of experience or four or five years working on a golf course are required. The salary will be \$15,000 to \$20,000.

POSITION OPEN

Assistant Supt. wanted at Prestwick C.C., 18 holes, private, blue grass fairways. Penncross greens & tees. Manual irrigation system. Salary open. Responsible to golf course supt. Fringe benefits. Phone 815-469-5903 or 5238. Contact **Dick Trevarthan**, RR1, Frankfort, IL 60423.

JOB OPENING

Wanted - Golf Course Supt. at Old Orchard Golf Club, Mt. Prospect, Call or write **Steve Blatnak**, pro. 700 W. Rand Rd., Mt. Prospect, IL 60056 — 255-2025.



Editor

MIDWEST BREEZES

Dave Meyer, Supt. at Indian Lakes C.C., reports he and his crew will be planting trees in February of this year. He has approximately ½ acre in the lobby at the new hotel at Indian Lakes which has three ponds with waterfalls. The finished product will hopefully be similar to the many enclosed malls you see in our shopping centers.

The M.A.G.C.S. hospitality room during the G.C.S.A.A. conference in St. Louis will be in the headquarters hotel. It will be open for your pleasure on Sunday, Monday, Tuesday and Wednesday. The M.G.C.S.A. voting caucas will be held in the Hospitality room on Wednesday at 12:00 noon. The G.C.S.A.A. headquarters is in the Stouffers Hotel.

The M.G.C.S.A. January 7 meeting was held at Hackney's Inn at Wheeling, IL, 68 attended and enjoyed a wonderful buffet luncheon. The speaker of the afternoon was Mike Bavier, C.G.C.S., Supt. at Inverness C.C. and a director of the G.C.S.A.A. and a candidate for Vice President in the Golf Course Superintendents Association of America. He answered many questions pertaining to the G.C.S.A.A. and the conference and also the golf tournament in Guadalajara. I am sure everyone went home with more knowledge than he had when he left home.

The winner of the attendance drawing for 1979 was Mr. Miller who received six hundred dollars. "Congratulations."

John Ebel, Supt. at Barrington Hills C.C., informs you that there will be a prayer breakfast at the Cervantes Exhibition Center on Monday, Feb. 18 from 7:30 A.M. to 8:30 A.M. in Room 276, second floor. The speaker will be Earl Worley, a former minister. John says you are all invited and for more information get in touch with Mr. Ebel.

If you plan on going to the G.C.S.A.A. Conference in St. Louis by train you can do so from the Union Station in Chicago. Leaving at 8:15 A.M. - arriving at 1:30 P.M. Also one leaving at 11:00 A.M. - arriving 4:15 P.M. The third train will leave at 5:20 P.M. - arriving at 10:45 P.M. Round trip fare - \$48.00. These same trains can also be boarded at Joliet. Round trip from Joliet - \$42.00. For more information, phone 800-972-9147.

Bill Brady, former Supt. at Barrington Hills C.C. passed away on Thanksgiving Day in California. Bill has made California his home for the past several years. Our deepest sympathy to the Brady family.

Dr. Bill Daniels wants to know of some research projects that each of you would be interested in having conducted at Purdue University. This is a good opportunity to express your preference.

The flower show will be held at O'Hare Exposition Center in the Chicago suburb of Rosemont, IL on March 15, 1980.

Hi Ray,

While Winter has it's beauty, it has it's dull moments too.

"WINTER DOLDRUMS"

Barn fever is growing, Winter blah's reign supreme. Equipment is looking better,

With a new coat of red, orange or green.

Knowing all will be ready,

When the season re-appears. Is good reason for contentment,

And rates a few good cheers.

Winter's sure to leave us, After it's had it's fling.

Spring will surely follow,

And that will ease the sting.

So, chin up, give a smile,

Soon "FORE", will be the word.

Isn't that the sweetest sound, Your ears have ever heard?

Keep warm, Superintendently,

Kenneth R. Zanzig Green Garden C.C.

How much water does the average person use each day? — H.J., Chicago

In Chicago, the per capita consumption, based on Chicago's population, is 250 gallons. In the suburbs, it is 145. Does this mean that Chicagoans are (1) cleaner and (2) thirstier than suburbanites? Not necessarily. It means that there is more industry, using more water, in the city and that water here costs less. Also, that many suburbanites work in the city and use Chicago's water. It wouldn't be very hospitable to make them carry their own canteens.

SULFUR - THE FORGOTTEN TURF NUTRIENT

Sulfur is essential to the healthy growth of turf as well as all plants. Here are some of sulfur's benefits to turf.

Improves water penetration in soil.

- 2. Increases availability of iron, manganese, copper, zinc, and boron to the plant.
- 3. Improves soil structure.
- 4. Enhances color.
- 5. Builds healthy protoplasm and plant tissue to help resist drought.

6. Promotes turf growth and density.

7. Aids the turf response when used in combination with nitrogen.

8. Helps keep alkalinity in balance.

- 9. Aids nitrogen release from organic matter.
- 10. Improves recuperation capacity.

Because of the benefits derived from attending Turf Conferences, my club officials insist that I go to St. Louis, MO. I sincerely hope that other clubs are doing the same for their grounds superintendent.



IMPORTANT NOTES FROM THE

BOARD MEETING OF NOV. 5, 1979
A few weeks before the Turf Clinic the first meeting of the newly elected Board was held at Butler National Golf Club. A few decisions were made that the membership should be aware of. First, most of you know that our friend Chick Evans passed away this fall. At Chick's request no flowers were sent, but a donation was sent to the Evans Scholarship Fund as he wished. Second, a letter has been sent to Dr. George at the University of Illinois voicing our concern in Dr. Al Turgeon's leaving his post. The letter urges Dr. George to hire a competent replacement quickly, so that all the fine programs that have been started can be continued without any break in their progress. The third item has to do with the payment of dues. You should have received your dues statement by now. Please pay them as soon as possible. To avoid a lot of last minute problems, this is what is planned. A reminder of dues payment along with a list of those who have not paid will be published in the Bull Sheet in February. This will be done NOT to embarrass anyone, but to call it to your attention in case it has been overlooked by someone. Those who have not paid their dues by March 31st will be put on a delinquent list, and those on that list will not be a member in good standing until the following year.

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You can have it with either a 50" or 60" deck. (They're interchangeable.) You get a smooth, even cut with practically no scalping because the fully articulated deck closely follows ground contours.

It trims close like a hand mower. The deck raises and

lowers hydraulically for curb climbing and transport. And you can adjust cutting heights from 1" to 4".

What's more, the wide track 3-wheel design gives it great slope-hugging ability.

And you can steer and maneuver while you change speeds because of the foot-operated hydrostatic drive.

The husky 18-HP Kohler engine makes hill climbing a breeze.

The Turfcat from Jacobsen. Rugged. Quick. Maneuverable. Just what you've been waiting for.

Ask us for a demonstration. And ask us for more reasons why this is the hottest mid-sized rotary in the business.

The more you hear about the amazing Turfcat, the more you'll know we've been listening to our customers.

We hear you.



illinois lawn equipment inc.



PURCHASING EQUIPMENT

Many of you have been attending the various turf conferences and trade shows during this winter — some of you with the intention of seeing and maybe purchasing a new piece of equipment.

Purchasing equipment is always a difficult and demanding task. Yet, you, as a turf manager, have the responsibility of purchasing, maintaining, and protecting thousands of dollars worth of mowers, tractors, and other turf maintenance equipment.

Let's assume you need a new piece of equipment. How do you go about obtaining it? The first and main thing you should remember is that you want a piece of equipment which best fits your situation. That means it should meet your job requirements and your financial situation.

You should define the job you want done and determine the specific job requirements. Compare how long it takes to do this job with whatever method or machine you are now using to how long it will take with the new piece of equipment. At the rate minimum wages are going up, it might be cheaper to buy a new and better piece of equipment.

Now you need to figure out the approximate amount you can spend on a new piece of equipment. Remember, you can't buy a Cadillac on a Volkswagon budget. Although most new equipment carries a high initial cost, the long-term savings and better looking turf area from timely maintenance will make the purchase worthwhile.

Expensive equipment does not mean it's the best. You can buy a \$200 mower to trim the grass around a sand trap, or you can buy a \$75 mower to do the same job. No matter which mower you buy, the housing will be severely eaten by the sand. It may be wiser to buy the cheaper mower and replace it as it wears out than to buy a more expensive mower which will require a larger initial cash outlay and still need the same maintenance as a cheaper mower.

The time has now come for you to go looking for that new piece of equipment. Trade shows are probably the best place to go looking first. They will generally have a wide selection from different manufacturers. You will also find less pressure to make a sale than at your local equipment dealer. You should also make sure to read all the professional literature you can about the various pieces of equipment in which you are interested. Talk to others who may own the piece of equipment in which you are interested. What I'm telling you is to look around. Ask questions to learn about a machine's drawbacks as well as its potentials. Always ask for a demonstration; don't just kick the tires. Keeping up with the latest equipment is a must for the conscientious turf manager.

If you now have made up your mind on the piece of equipment you want to buy, the next step is to shop around for the best deal. Be sure to find out what services will be performed by the seller and the details of your guarantee. When you do finally make your purchase, you should make sure you get a service manual which lists all parts and has instructions on how to make repairs. It is also a good idea to make up a 3-inch by 5-inch index card on which you can record the equipment's identification number, date and location of purchase, cost, and maintenance to be performed on the machine in later months. This card can be a valuable,, ready reference for the turf manager, especially as it applies to insurance, depreciation schedules, and maintenance schedules.

Remember, shop around to determine what fits your need and your budget before buying that new piece of equipment. from Fore Front (May, 1977)

TURFGRASS INDUSTRY PREPARES FOR ST. LOUIS SHOW

The world's largest display of turfgrass maintenance equipment will be exhibited in the Cervantes Convention and Exhibition Center, St. Louis, Feb. 19-21, 1980.

This trade show, sponsored by the Golf Course Superintendents Association of America, will bring turf industry representatives from all parts of the world to St. Louis to display their equipment and supplies.

The exhibition will feature millions of dollars worth of maintenance equipment and supplies for the entire turfgrass management industry. These exhibits, in conjunction with the GCSAA conference educational program, are designed to familiarize turfgrass specialists, with new methods, products and equipment that can contribute to more efficient maintenance practices. Many manufacturers also introduce their new products to the industry at this show.

Monday, Feb. 18 is designated as Distributor's Day, and dealers will have an opportunity to preview the show before it is opened to the public. The ribbon cutting ceremony which officially opens the show is scheduled for 9 a.m. Tuesday.

The exhibits are open Tuesday and Wednesday, Feb. 19 and 20, from 9 a.m. to 5 p.m., and Thursday, Feb. 21 from 9 a.m. to 2 p.m. Daily show passes may be purchased for \$10.

This year the exhibits will occupy nearly 70,000 net square feet of space in the new Cervantes Convention and Exhibition Center in St. Louis. As a result of a recent downtown construction and renovation effort, St. Louis has become one of the most attractive convention cities in the nation.

The 51st International Turfgrass Conference and Show is expected to draw more than 6,500 visitors, including golf course superintendents, architects and builders; city park and recreation personnel, cemetery and lawn care industry personnel; school facility supervisors and turfgrass managers from all over the world.

GCSAA 1617 St. Andrews Drive Lawrence, KS 66044

SUMMARY

Despite current economic and energy situations, there is opportunity for each of us to continue providing the public with fine turf areas for recreation of all sorts. We should anticipate a strong increase in the use of green areas in and near our heavily populated areas. We should also expect some changes in our life styles. Some, I believe, are already apparent.

We are a people in love with travel and movement, in fact, some states in this great country depend on the mobility of Americans for their economic well being; and if our access to free wheeling cars and a sky full of planes is diminished. I believe we will have a renaissance of hiking and hosteling, cross-country skiing and similar outdoor activity. Look also for more lawn games and perhaps the return or development of lawn bowling to our towns.

We are truly fortunate to have in the United States more than 11,000 golf courses and vast acreages devoted to lawns, parks, school grounds, highways, airports and other types of turfgrass. That network is, in my opinion, a national treasures; one that will increase in importance to the people of this country as we move further into the new age of shortages.

As the demands on these facilities grow, we will have to keep pace with new turf management techniques and with new products. Certainly the economical use of motorized equipment will play a major role! BECAUSE WE'VE BEEN A
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REFUSE IRRIGATION WELL PERMIT

An issue has arisen in DuPage County, Illinois over the drilling of an irrigation well according to the Illinois Water Well Association.

A company within the county has approximately 25 acres of property which they want to sprinkle using an irrigation well for that purpose. When application for a permit to drill the irrigation well was made it was denied by DuPage County.

A class action suit to test the legality of the county's refusal to allow irrigation wells is now being prepared by the Illinois Water Well Association, until this matter is finally settled anyone contemplating the building of a new golf course, or extensions to an existing course, would be well advised to first of all make sure that the well permit is obtained.

C. E. [Scotty] Stewart

GOLF IN THE LATER YEARS

My muscles are flabby; I can't hit a drive. My mind often doubts if I'm really alive. My chipping is lousy, I never could putt. I guess I'll stay home and just sit on my butt. My iron plays awful, my woods are as bad. I'm describing my game as a shade short of sad. So the outlook today is for grief and for sorrow. Say! who can we get for a fourth tomorrow?

A COURSE IN GOLF HISTORY

Although such modern-day terms as "fore", "handicap" and "sand trap" are wildly used, few golfers can tell you where the words originated.

Dave Thomas of San Bernardino not only has one of the world's greatest private golf collections but is also one of the foremost golf historians. Thomas, who is also a PGA pro, explained the origin of the above terms during a golf match recently.

"The terms 'fore', 'handicap' and 'sand trap' actually originated at St. Andrews in Scotland," explained Thomas.

"In the 1770s, all golfers were required to wear red and before each shot had to yell, 'thou are fore-warned'. Over the years, the expression was shortened to 'fore'.

"Surprisingly enough, sand traps, a nightmare for even today's finest golfers, came about because of sheep. In the early days and even today, sheep were allowed to graze over the St. Andrews course. The herdsmen, however, discovered that a number of their flock were dying off because of the strong, cold north wind that swept across the course. To protect the sheep, the sheepherders dug giant ditches to shelter the animals from the wind.

"Most of today's golfers have handicaps when they play but few could tell you where the word originated. It seems that in the early days at the private golf clubs when a less skilled golfer played another he had to wear a cap with a colored ribbon around it to signify that he had been given so many strokes by his playing partner. Different color ribbons meant different

strokes. The caps were kept at the clubhouse and placed in a long row so that they would be handy for the golfers. They became known as 'handy caps'.

"Some strange orders have also been handed down over the period of centuries to golfers to stop playing the game and practice archery. It seems their skill as archers were more in demand then their skill as golfers. They were needed to defend the country."

Dave Kohl Credit - Divots, Calif. 1977

TUCO ISSUES GRUB CONTROL REPORT

Grub Control in Turf is the title of a new Situation Report just published by TUCO, Division of The Upjohn Company. The report discusses the problems caused by soil-inhabiting insects such as white grub, billbug, Japanese beetle, European chafer, May beetle and others, and the means to control them.

Increased population of white grubs in golf courses, home lawns and other turf prompted TUCO to define the preventive measures that can eliminate infestations and develop a program of grub control.

Consulting entomologists for the book point out that knowledge of life cycles is extremely important in the control of these pests. The life cycle depicts times when the insect is most vulnerable to treatment. Since the residual of today's insecticides is short, proper timing of application is more important for successful control.

Focus throughout the report is on recognition of life cycles, detection of insect problems, diagnosis, prevention and control procedures.

The book points out that observation and examination are the two prime requisites for successful diagnosis of problems caused by soil-inhabiting insects. Examination of the turf root areas showing signs of injury is the only way to determine if grubs are a problem.

Certain preventive measures can minimize the potential for damage from soil-inhabiting insect pests. These methods include sanitary practices, preventive insecticide treatments and maintaining vigorous turf.

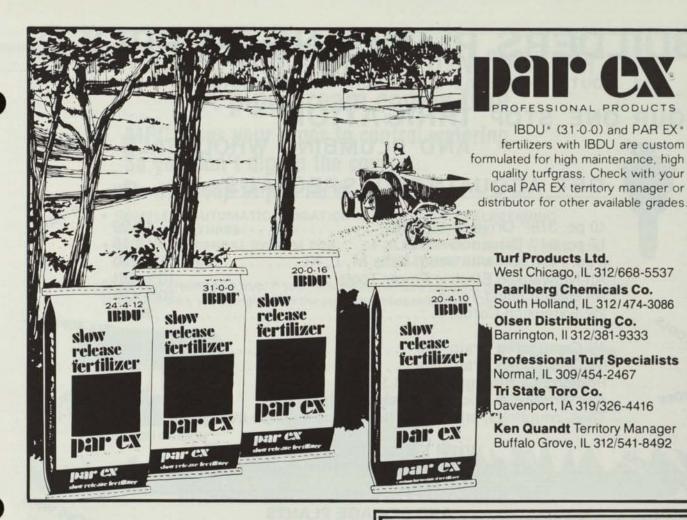
Copies of the TUCO Situation Report may be obtained by writing "Grub Control in Turf", TUCO Agricultural Chemicals, Division of The Upjohn Company, Department 9823-190-1, Kalamazoo, MI 49001.

Golf courses that have automatic irrigation systems are frequently accused of indiscriminate use of water. I believe a well-designed automatic irrigation system, set up properly actually conserves water.

We have used approximately 25 per cent less water since converting a manual hoseless quick-coupling system to automatic with individual head control. A Superintendent will spend much more of his time with an automatic system than he did with a quick-coupling system and a night waterman. An automatic system has to be checked daily, especially during heat and drought periods. You will probably realize better control of water but you will be doing more than pushing buttons and pulling pins.

Depending on the course, soil conditions and drainageeach Superintendent has to adjust and program irrigation for each situation. A Superintendent should design or help design his automatic system, especially if he has been using a manual system, since only he knows where the trouble spots are and how he can program applications.

Credit - Wisc. G.C. Supts.



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"What about cutting the grass?" asked the skeptical boy.

The Kleinknecht Encyclopedia

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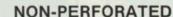
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