THE KEYNOTER
Pennsylvania Turfgrass Council, Inc.

WINTER MAINTENANCE FOR TURF EQUIPMENT

by R. William Marberger, Jr.

Now that summer is behind us and fall renovation completed, it would be wise to consider the abuse to which our equipment has been subjected this year in order that we might realistically approach its reconditioning. Above average rainfall, generally prevalent in the area this year, necessitated mowing at more frequent intervals with the end result that overworked mowers and tractors will require considerable repairs. For the same reason, compaction and disease dictated above normal use of aerifiers, spikers and sprayers.

The following list of suggestions for winter maintenance, though cursory, does represent the items that certainly should be checked and serviced as condition dictates.

A. **Gang Mowers**
   1. Steam clean and inspect reels and bed knives, sharpening or replacing as necessary.
   2. Check reel and roller bearings or bushings and seals, adjusting or replacing as required.
   3. Remove side plates, checking drive train gears, and making necessary adjustment or parts replacement.
   4. Lubricate all parts in accordance with the manufacturer's specifications.

Unless mowers are relatively new, a complete teardown and reconditioning is recommended to assure uninterrupted service during the season.

B. **Tractors**
   1. Check engine compression and rebuild or tune up engine in accordance with condition.
   2. Drain and change all lubricants, changing all cleaners and filters. Lube all points.
   3. Check clutch, brakes, steering and hydraulic system.

C. **Rotary and Reel Mowers**
   1. Check compression, ignition and fuel systems and adjust or repair. Change motor oil, if 4 cycle engine, and service air cleaner. Winterize by placing tablespoon of oil in cylinder and cranking engine several times with plug removed.
   2. Drain fuel system and lubricate completely.
   3. Replace or sharpen rotary blades and balance.
   4. Check reels and bed knives, sharpen or replace according to condition.

D. **Sprayers**
   1. Clean thoroughly, check tank and plumbing for leaks, flush out and drain.
   2. Check pump and repack, rebuild or replace as required. Drain completely!
   3. If engine driven, follow procedure for small engine service.

E. **Aerifiers**
   1. Service engine and check cranks, bearings and drive train. Replace tines or spoons.
   2. Check tractor drawn aerifiers for bent or broken spoons. If majority are bad, replace entire set, keeping best of removed spoons for future replacement. You then keep spoons of equal size in the reel.

If this indicates a lot of work, remember that if you don't use the available time in the winter to do the job right, you'll have to **take** time in the season if a breakdown occurs.

Although this infers servicing the equipment yourself, the foregoing maintenance can be sent out to mower shops. These facilities, however, are already over-taxed and the return of your equipment in time can be a problem. Furthermore, you will find it more economical to perform your own grinding and servicing if the amount of equipment warrants the investment.

A parting shot relative to replacement parts. Ask your supplier for a recommended list of fast moving parts covering the equipment you operate and stock the suggested minimum. Then if you have an inopportune break-down, you will be equipped to make the necessary repairs. The investment will be small but the benefits great!

Start now and have your equipment ready, your fast moving parts in stock and you'll be ready to face any eventuality next year. Be a good turf manager — **"Be Prepared!"**

TREE PROBLEMS

by Stanley Rachesky
Entomologist — University of Illinois

Every year thousands of people send in twig, bark and leaf specimens, requesting information on the problems incurred with their trees. Many times the tree is diagnosed as having a "terminal" disease or insect problem. Because trees are such long lived plants, very often it is extremely hard for the property owner to accept the fact that this beautiful part of his landscape is going o die and should be replaced, if possible.

Most tree problems can be prevented. The selection of the tree species should be given careful thought. Over 300 tree species can be used for shade and ornamental purposes in Illinois. However, only about 15 to 20 have been planted to any great extent. American elm, pin oak, American sycamore, white oak, some species of crabapple and hawthorne are the most frequently planted trees and the most commonly affected by disease and insect problems. Because of the susceptibility to disease and insects these species of trees should only be planted in very limited numbers.

When selecting a tree, one should consider the following points: Cold hardiness; resistance to insects and disease problems; adaptability to soils; size; susceptibility to transplanting, drought, ice and wind; appearance (leaves, flowers, fruit, bark), availability in the area, and the rate of growth.

Trees represent a sizable investment. They must be maintained properly. In well planned landscaping program property values will be increased, future maintenance costs will be lowered, and the landowner will benefit by protecting his premises from sun, wind, dust and noise.

Trees are taken for granted more often than not. Very little thought is normally given to them . . .until they die or become damaged and must be removed. There are a number of substitute tree species that are readily available from any nurseries. Tree species that are relatively free of problems are: European black alder, ash (selected species and varieties), European beech, Amir cork tree, crabapple and hawthornes of selected species for disease resistance, dogwood (special flower selection), Chinese elm, Douglas fir, conifer fir, ginkgo (male only), European hornbean, hop hornbean, Crimean linden, littleleaf linden, mag nolia, red maple, Norway maple, sugar maple, English oak, red oak, red pine, Scotch pine, white pine, London plane tree, purple leaf plum, redbud, hardy rubber tree, sassafras, spruce, and tulip tree.

Because Illinois is such a long state, some of these trees thrive well only in certain parts. Select your tree carefully.

Wives of National Greenkeepers — 1929 — assembled at Hotel Statler, Buffalo, during the Third Annual Convention of the N. A. G. A. Did they have a good time? How does this compare with the gathering of the ladies at our conference of today? Can you identify anyone in this picture? Could one of the children be you?

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FIELD TRIP NOTES

Midwest Clinic Dec. 3, 1974
By Charles Wilson

Daconil weekly seems to stop disease on newer Toronto bent plantings. Jackman has found extra water is required (12-15 gals. per M sq. ft.) . . . Vargas seems to have dropped idea that it is a nematode induced problem. Myers, pathologist for Warrens' says the malady is caused by red leaf spot . . . Spring and late summer and fall seem to be critical times for appearance . . . in Chicago only on Toronto and only on new plantings . . . Wayne Otto says we have same thing on old Washington bent greens in Milwaukee area . . . problem only on close putting green cut. Collars are not affected . . . only occurs on one "strain" of Toronto bent at Michigan State and in Chicago area.

153 attended clinic for all time record attendance. Most favored the one day format so it will probably be continued. Paul Alexander will be looking for a commercial job after December 13, 1974.

Clausen from National Golf Foundation reports costs hurting private clubs . . . average club member plays 30 rounds each year at a green fee, only, cost of $30.00 per round . . . more municipal courses in the offing. More women golfers and more women working on grounds . . . NFG says there are 75 accredited golf course architects yet one third of courses being built do not utilize their services . . . there are 160,000 individual golf holes in country, and 345,000 golf cars. Course in Colorado has built maintenance buildings underneath the parking lot to conserve space. Another course in Arizona has monorail golf car installation controlled by Pro Shop . . . terrific way to speed play. If golfer dawdles he may have to run to catch his golf car . . . 300 new superintendent jobs open each year with 100 full 4-year course superintendents trained to replace them . . . more executive or shorter courses being built.

Bob Williams sick with flu. Paul Woykin presented his paper. According to Bob, the "good news" — today's superintendents qualified, more talented, more articulate and producing better results than in the history of golf. The "bad news" is that the clubs can't afford them . . . average superintendent's age is now 25 to 35 years . . . according to a Dr. Daniels survey including 2-year and short course graduates, 450 technically trained men come on line each year with only 350 job openings . . . supply has caught up with demand, and college alone **doesn't** make a **qualified** superintendent. Despite this, courses are hiring such men to save a buck. This is unfair to the student and ultimately to the club and the game of golf.

Dr. Alexander said the "Corporate Superintendent" is not in a decision making job, but fringe benefits are great . . . play alone will not pay the cost of operating the resort clubs. The average budget at the five Hilton head courses comes to $200,000 per year each, for maintenance only, and 49% of this is for materials and supplies, and does not include anything for capital improvements. 51% of budget is labor.

Harry Gray stated the "General Manager" concept came into being because the golf members asked for it. Today, most committeemen are busy, busy business men and no longer have the time to devote to club business affairs. Harry felt the triumvirate would continue to exist and do well at old line clubs where the members did have the time to spend on club business, otherwise a general manager is a foregone conclusion . . . Harry feels the General Manager becomes the fourth management position. He can't see how either Pro, Superintendent or Club Manager can be elevated to the position and continue to perform his old duties at the same time.

Tim Miles now out of the golf business didn't hold much hope for outside contracting or superintendents moving into club ownership roles . . . Tim intimated the future security for golf superintendents must come from collective action, and although he did not specifically so state it smacked of unionization at the management level to several of us attending.

Dr. Ken Payne put in the expected professor approval for continued student training . . . he feels the golfer will not lower his standards for golf turf acceptance despite increased costs and poor economic conditions . . . Ken put in a plug for close contact with University personnel and support of research. He also credited industry with doing a good job in developing tools and materials.

Unfortunately, I missed some of Ken Quant's and Ted Sokolis' presentations. Some of the more amazing results of their surveys on greens soil mixtures were as follows:

2. Most Chicago area club still stick with a 1-1-1 or 1-2-1 by volume ratio of sand, soil and humus.
2. Sand content should be under 1/3 or over 70%, or concrete will result.
3. There isn't a single Purr-wick green in the area, and very few U.S.G.A. Spec greens, even though superintendents still refer to all 80% sand 20% humus greens as U.S.G.A. greens.
4. Almost no consideration has been given to gradation of sand particle size. My paper may have given some cause to think about this. Ken Killian was most interested in the "sand only" concept of putting green construction.

The "one day" format makes a long day for Wisconsinites . . . left home at 6:30 A.M. and returned about midnight.

UNIVERSITY OF ILLINOIS —
COLLEGE OF AGRICULTURE
Department of Horticulture

Mr. Ray Gerber, Editor
The Bull Sheet
865 Hillside Ave., Glen Ellyn, Ill. 60137

Dear Ray:

This is to sincerely thank the Midwest Association of Golf Course Superintendents for its generous support of the turfgrass research program at the University of Illinois. As our program is highly dependent upon outside grants, the benefits from turfgrass research are tied closely to the amount of financial support received from commercial firms, government agencies, and professional organizations like the MWGCSA. Turfgrass technology is undergoing some very rapid changes today with the introduction of new equipment, mechanical devices, herbicides, fungicides, insecticides, fertilizer carriers, turfgrass varieties and other materials used in the establishment and culture of turf. It is imperative that the universities conduct comprehensive evaluations and research with new products from industry in order to properly assess their value in contemporary turfgrass culture. Also, continued study of traditional and proposed practices can reveal new insights into the causes of, and hopefully solutions to, problems encountered in the culture of fine turfs. Let me review some of the findings of our research during the past three years:

New preemergence herbicides have been evaluated each year in order to find better materials for controlling crabgrass, goosegrass, and annual bluegrass without producing unacceptable injury to turf. The most significant find has been oxadiazon which will probably be available next spring as Ronstar from Chipman. This material has performed exceptionally well, especially in conjunction with vegetative plantings of Kentucky bluegrass for controlling annual bluegrass and other troublesome weeds without retarding turfgrass establishment. Other studies in which a number of commercially available herbicides were applied repeatedly for several years disclosed the thatch-inducing effect of calcium arsenate and bandane. Associated with this were shallow rooting, higher wilting tendancy during summer, and increased susceptibility to Helminthosporium leaf spot disease in spring. We have also determined that the reduced water infiltration rates observed with these thatched turfs was not due to the thatch, per se, but rather the physical condition of the underlying soil presumably resulting from poor rooting and the absence of earthworms. Another study involving the use of preemergence herbicide for controlling existing infestations of annual bluegrass in closely clipped Kentucky bluegrass revealed the futility of using herbicides without adjusting other cultural practices to favor Kentucky bluegrass. Even where good annual bluegrass control was obtained using calcium arsenate, other results included substantial bentgrass invasion and serious thatch development.

Turfgrass renovation procedures employing herbicides have often resulted in serious reinfestation by perennial weed grasses due to inadequate control. Also, soil residues of applied herbicides have delayed or precluded turfgrass establishment on treated sites. The introduction of glyphosate will provide the turfgrass manager with a more effective herbicide for controlling perennial grasses. Yet, the absence of any soil residual activity from this herbicide allows for replanting as soon as adequate weed control has been obtained. However, our work has shown that premature planting of Kentucky bluegrass with a Rogers seeder into treated bentgress severs the bentgrass stolons thus interrupting translocation of the herbicide and reducing control. However, glyphosate is a substantial improvement over presently available materials and it will undoubtedly become an important herbicide for use in turf.

Aquatic herbicides, for controlling algae and other types of vegetation in water bodies, are a matter of concern when the treated water is subsequently used for irrigating turf. Our results from research with aquatic herbicides in irrigation water have enabled us to characterize these herbicides in terms of their relative safety to putting green turf. For example, no injury was observed from multiple applications of endothall, copper sulfate, Cutrine, fenac or 2,4-D amine while dichlobenil and simazine were highly injurious to the turf. Some injury was observed from 2,4-D ester, silvex and diquat. We are currently developing literature that will tie together aquatic weed identification and control, and relative hazards associated with using herbicide-treated water for turfgrass irrigation.

Another important aspect of our research program is the evaluation of new turfgrass varieties with the greatest emphasis on Kentucky bluegrasses. Some turfgrass writers have criticized the efforts of plant breeders in providing such a long list of new varieties,, and, certainly, there is some confusions with so many choices among the new commercially available grasses. However, with the tremendous variability withinthe Kentucky bluegrass species, we can test for adaptability to different cultural intensities and eventually we will be able to recommend blends for specific uses based on the known features of each grass in the blend. For example, we now know that the selections Ba 61-91, P-140 and RAM#1 are highly competitive with annual bluegrass at ¾ inch cutting height while Park and Galaxy are quickly overtaken by annual bluegrass under the same conditions, Thus, an important control for annual bluegrass is selecting those varieties that are most adapted to the conditions under which annual bluegrass develops. To carry this a bit further, the golf course of the future may be all Kentucky bluegrass (excepting the putting greens) but with different blends of varieties for the tees, fairways, and roughs based on the adaptation of different varieties to these intensities of culture. Our concern at the University of Illinois is to help clarify this seemingly confusing varietal picture (what Nutter calls VD—varietal dilemma) so that turfgrass managers can take full advantage of the variability within Kentucky bluegrass in developing and sustaining the best possible turfgrass quality under prevailing environmental conditions.

The progress that we have made in these and other studies is largely due to the fine financial support that we have received from the MWGCSA and other organizations. We are sincerely appreciative that you have provided us with the opportunity to serve you better.

Sincerely yours,
A. J. Turgeon
Assistant Professor and
Extension Turfgrass Specialist

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