Turfgrass research review

by Dr. James B. Beard

Reports on Soil Problems

The Effects of Urea on Soil pH and Calcium Levels.
R.L. Goss. 1967. Northwest Turfgrass Topics. 9(3):1-4. (from the Western Washington Experiment Station, Puyallup, Washington).

The effect of nitrogen, phosphorus and potassium fertilization on the soil pH and calcium level were investigated on a Highland bentgrass putting green turf at Puyallup, Washington. Included were three nitrogen levels (6, 12 and 20 pounds per 1,000 square feet per season), two levels of phosphorus (0 and 4 pounds of P205) and three levels of potassium (0, 4, and 8 pounds of K20) which were applied in all possible combinations.

After eight years, substantial changes in the soil pH and calcium levels were noted. A significant reduction in soil pH occurred when the higher nitrogen rates were applied in the form of urea. Also, plots where no phosphorus was applied had depressed soil calcium levels. The author suggests that the low pH (4.2 to 4.3) of these plots caused a reduction in phosphorus availability. The lack of phosphorus resulted in increased calcium uptake by the bentgrass plants with the calcium being removed in the clippings. The low calcium level was noted in terms of a loss of turfgrass color.

Control of Thatch in Tifgreen Bermudagrass.
W. R. Thompson, Jr. 1967. Proceedings of the Florida Turfgrass Management Conference. 15:53-55. (Department of Agronomy, Mississippi State University, State College, Mississippi, 39762).

The study involved the effectiveness of selected management practices in reducing thatch accumulation on a 3-year old Tifgreen bermudagrass sod. The experimental area was mowed daily at 3/16 inch. The treatments included: three frequencies of soil topdressing (none, monthly, and bimonthly, with 6 to 7 cubic feet of soil used per 1,000 square feet per application); three frequencies of aerification (none, 2 and 3 times per season); and four frequencies of vertical mowing (none, every 2, 4, and 6 weeks).

Results showed that topdressing on a monthly basis was the most effective treatment in reducing thatch accumulation of bermudagrass greens. Vertical mowing reduced the thatch accumulation but the reduction was substantially less than from topdressing. The turfgrass appearance and quality was highest if the vertical mowing was practiced on a regular basis of every two weeks. Less frequent vertical mowing removed excessive amounts of leaves which damaged the turf and slowed recovery. When the aerification operation included core removal, no effect on thatch accumulation was observed. However, when the aerification involved utilization of the cores as topdressing material, the rate of thatch accumulation was reduced and turfgrass quality and greenness was increased.

Comments: The recent advent of power topdressing equipment has greatly facilitated the topdressing operation. It is important to remember that the soil selected for topdressing should be similar to the underlying soil of the turf to be topdressed. The application of a soil of significantly different particle size results in layering. This is to be avoided because layering impairs water and air movement which, in turn, restricts rooting.

Some Effects of Supraoptimal Temperatures upon Creeping Bentgrass *(Agrostis Palustris Huds).*
D.T. Duff. 1967. Ph.D. Thesis. Michigan State University. pp. 1-61. (Department of Crop Science, Michigan State University, East Lansing, Michigan, 48823)

The effects of supraoptimal temperatures on Toronto creeping bentgrass were investigated. Sod pieces of the grass were grown at successive light-dark temperature regimes of 68-50, 77-59, 86-68, 95-77, and 104-86° F. utilizing a 16-8 hour cycle. Leaf clipping harvests were made once per week at a 0.5 inch cutting height for a four-week period under each temperature regime.

As the temperature was increased the (a) dry weight yield of clippings, (b) leaf length, (c) leaf width and (d) succulence were decreased. Clipping yield varied inversely with the water soluble carbohydrate content of the leaves. Leaf sheath, stem and stolon tissue contained as much carbohydrate of the leaf tissue. Thus, accumulation of carbohydrates in the leaves at high temperature levels could not be attributed to the disruption of translocation to lower portions of the plant. Also, the decrease in leaf dry matter production was not attributed to depletion of reserve carbohydrates within the leaf tissue. Bentgrass plants which had ceased leaf growth and had become chlorotic contained a carbohydrate level similar to plants which remained green and still produced

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Beard

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new leaves. Thus, the reduction of turfgrass density at the highest temperature treatment could not be attributed to carbohydrate depletion.

Measurements of the photosynthetic rate of bentgrass leaves showed that leaves produced at 104-86° F. have a greater photosythetic rate per unit area than leaves grown at 68r 50° F. when they were tested at 68, 86 and 104° F. Thus, adaptive mechanisms occur in the photosynthetic system of plants grown at high temperatures.

Comments: The above data questions the frequently stated hypothesis that high temperature growth stoppage of turfgrasses is due to carbohydrate depletion. Further studies are needed to clarify the specific causes of high temperature growth reduction of cool season turfgrasses. The above study is typical of a long term basic research project whose ultimate objective is to provide an efficient means of developing cool season turfgrasses which are more tolerant of high temperature stress.

Sod Webworm Control Trials.
H.T. Streu and L.M. Vasvary. 1966. Report on Turfgrass Research at Rutgers University. New Jersey Agricultural Experiment Station Bulletin 816. pp. 83-84. (Department of Entomology and Economic Zoology, Rutgers, the State University, New Brunswick, New Jersey).

Five insecticides were evaluated for sod webworm control on a Kentucky bluegrass-red fescue turf. The insecticides were formulated as emulsible concentrates and were applied as drenches with about three gallons of water per 100 square feet. Before and immediately after application of the insecticide treatments, about one half inch of water was applied. Evaluations of insecticide performance were made counting live sod webworm larvae per square foot.

The organophosphate materials diazinon, ethion, and Trithion gave satisfactory sod webworm control under New Jersey conditions while chlordane gave somewhat less control. The carbamate, Zectran, was not satisfactory. In terms of residual effectiveness and rate of application, diazinon was the most satisfactory insecticide of the five materials evaluated.

Effect of time of Thatch Removal on Survival and Earliness of Growth of Three Turf-type Bermudagrasses.
W.W. Huffine. 1968. Turfgrass Production and Management Research Progress Report, 1967. Oklahoma Agricultural Experiment Station Processed Series P-580. pp. 19. (Department of Agronomy, Oklahoma State University, Stillwater, Oklahoma, 74075).

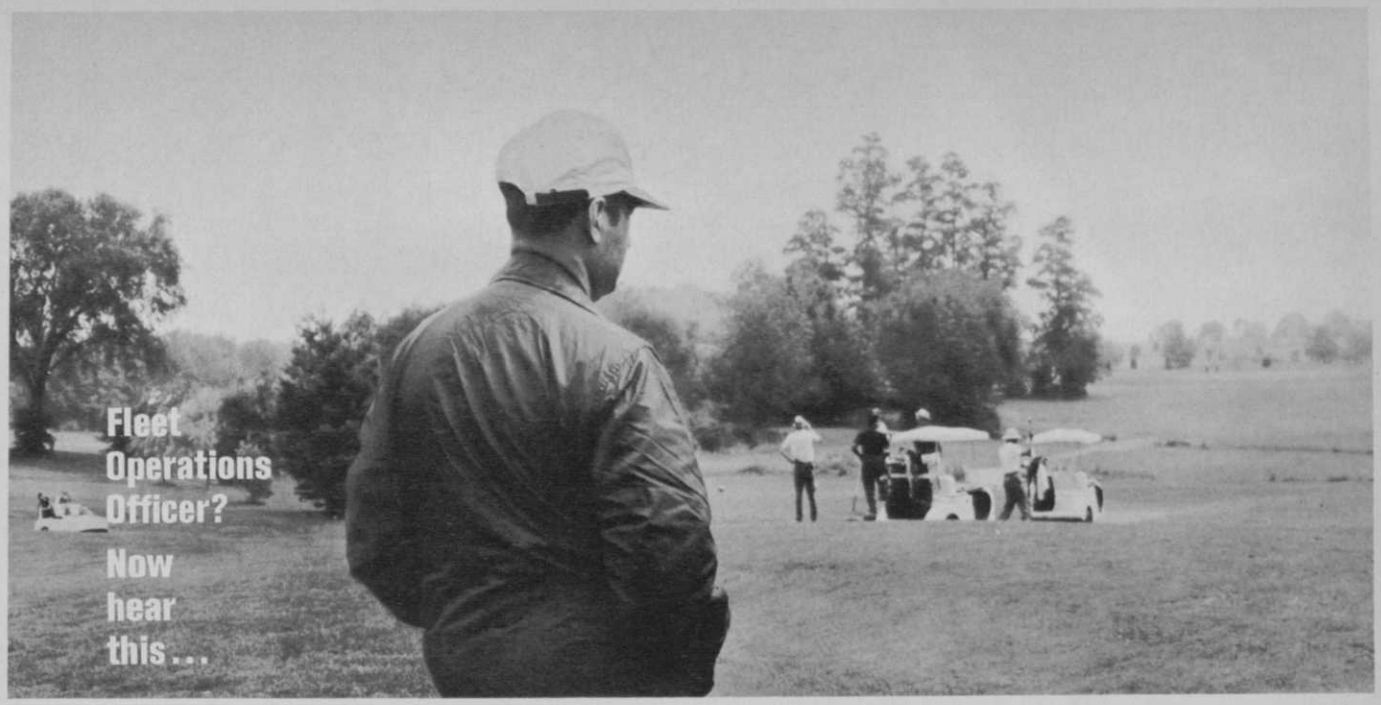
The proper time of thatch removal for early spring green up was investigated using three bermudagrasses: Sunturf, Tifgreen, and U-3. The thatch removal dates were: (a) February 15, 1967, (b) March 2, 1967, (c) March 18, 1967, and (d) April 5, 1967. The effect on survival and earliness of growth was rated in terms of percentage greenness on April 5 and 20, 1967.

Among the thatch removal dates tested under Oklahoma conditions, the data indicates that the earlier the thatch is removed the quicker Sunturf and Tifgreen bermudagrasses will green up in the spring. There appeared to be some differential in response between varieties. U-3 bermudagrass showed slightly more growth when the thatch was removed around mid-March when compared to the earlier dates.

Other References of Interest:

1. Fungi as agents of turfgrass disease. N. Jackson and F.L. Howard. Journal of the Sports Turf Research Institute. 42:9-16. 1966. (Department of Plant Pathology and Entomology, University of Rhode Island, Kingston, R.I.).

2. Control of summer blight in common bermuda. A.M. Boyle and A.D. Davison. Arizona Turfgrass Research Report 240. pp. 13-14. 1966. (Department of Plant Pathology, University of Arizona, Tucson, Arizona, 85721). □



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Accent on management

by Ken Emerson

Relinquishing the Non-profit exemption

Last month we discussed some of the activities which can affect a club's status as a non-profit, tax exempt organization as defined by Section 501 (c) 7 of the Internal Revenue Service Code.

Most club boards question, at one time or another, the value of retaining this non-profit status. This month we will discuss some of the possible long range consequences of relinquishing a club's non-profit exemption.

When a board of directors reviews its club's financial statement, it often reasons that since the club shows little or no profit, no tax would be due in any case, therefore retaining the exemption is hardly worth the effort.

Often, completely overlooked is the fact that if the exemption is lost ALL revenues become taxable. This means that initiation fees, stock transfer charges, and special and capital improvement assessments, not normally included in profit and loss statements, will be added to the club's revenues; an addition that could be costly in terms of taxes due.

Many clubs choose to charge off capital expenditures in the year of purchase, particularly when the financial statement shows that a net gain for the year will be forthcoming.

Loss of tax exemption will bring much more stringent depreciation scheduling requirements. An IRS agent would probably not approve writing off a new mower, or the purchase of ten golf carts, in a single year. Enforcement of strict depreciation schedules could easily add considerably to the club's profit . . . and taxes.

Upon the loss of exemption, income from a sale of club property would automatically become subject to income tax.

Normally, such transactions are isolated, one-time, sales. IRS considers them incidental to the general purpose of the exempt club, and therefore not subject to taxation.

When the same land is sold by a non-exempt club, it is immediately subject to capital gains tax. Conceivably, a $1 million sale could mean a tax bill of a quarter of that amount. Obviously, any change in non-profit status should be considered only after full consideration of the club's long range plans and prospects.

At many quarters it is a considered opinion that the final decision on exactly which departments will be considered exempt and which not exempt will not rest entirely with the club after it looses its non-profit status.

It is entirely possible that the Internal Revenue Service will rule that only a part of the club's operations will be subject to income tax when only part of it is open to the public.

Such a situation could easily arise if a club made its dining room available to the public and opened its banquet facilities to special functions, but limited the use of the golf course and swimming pool to members and their guests.

In this case the IRS *could* rule that food and beverage income was taxable, but that golf course and pool expenses could be deducted as operational expenses. A major portion of a club's income would then be subject to taxation without the advantage of any off-setting golf course or pool expenses.

Not the least of the considerations to be reviewed when thinking about relinquishing a non-profit status is the additional burden which will be placed on the accounting department. Most clubs with a non-profit exemption have little conception of the number of reports that tax paying organizations must file or the questionnaires that must be answered. Add to this the annual audit by the IRS and you have a big additional load to what is usually an already hard working department.

All of these factors will have some influence on any decision between profit and non-profit status. In the final analysis, however, it should be the club's basic philosophy that controls its policy.

It is what is best for the members, and how it can best be obtained, that should decide in the end.

Certainly, if a club is better off financially when it retains its non-profit exemptions, it should make every effort to do so. But it should also be prepared to accept the responsibilities that accompany the privileges of its non-profit status.

If the club can serve its members better by relinquishing its non-profit exemptions, then it should follow *that* course. There is a growing body in the club industry that feels that the tax paying club may well be the private club of the future.

Prestige is important in such a decision only insofar as it is important to the membership. For the club, in a very real sense, *is* the membership. An unwise decision that places unnecessary financial burdens, whether present or future, on the membership, or one which limits their use or enjoyment of the facilities is likely

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Emerson *Continued from page 26*

to have serious repercussions and could easily change the whole purpose of the club.

If a club losses its non-profit exemption either through deliberate choice or by some miscalculation, is the action irreversible?

The answer is no! Loss of non-profit exemption is not irreversible.

When a club is found not to be entitled to exemption it becomes subject to the regular rate of income tax and must file Form 1120 or 1065 for each taxable year of operation. This can be made retroactive to the date from which the club failed to act according to an established purpose.

In order to recover its exemption it must re-apply with a new application or Form 1025 and the necessary supporting documents required by the government.

Accordingly, a club should thoroughly investigate and carefully weigh the pros and cons of its particular position before relinquishing its non-profit status. Its decision may change its future. ☐

Turf students are wiser

Twenty five turf management students, each from a different university in the U.S. and Canada, recently graduated from a one-week course on equipment maintenance and handling.

The course was sponsored by Jacobsen Manufacturing Company, a major producer of turf care equipment, lawn and garden tractors and lawn mowers and snow throwers.

"Yeah, boss, probably a big fellow . . . should be on the 6th green by now."

Emerson *Continued from page 26*

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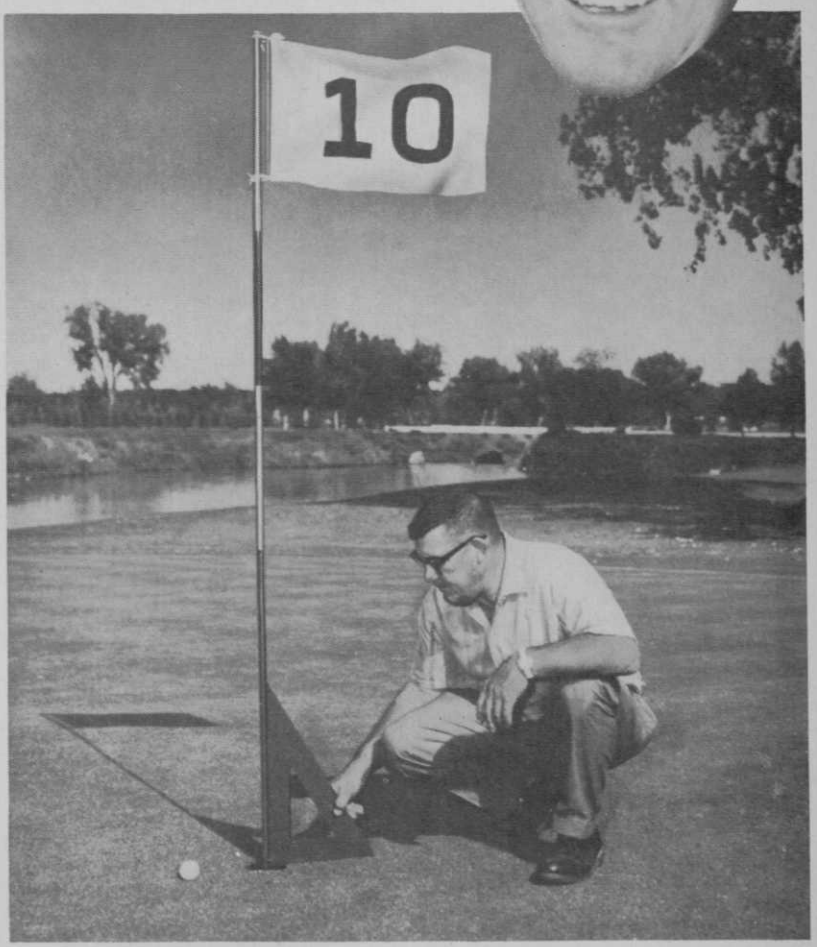

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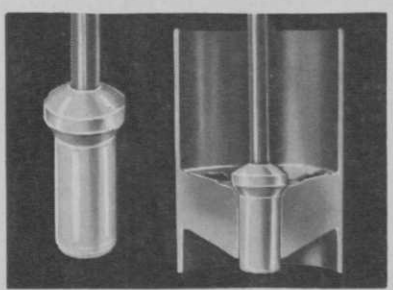

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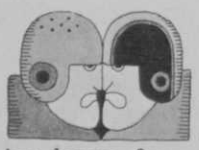
The coming of winter takes on two meanings in club managers' language. For the uninventive and unambitious club manager it means the end of the season. For the go-getter it means the arrival of additional revenues.

There are many ways the manager can boost off-season income. Following are some ways to do it in the food area. All these ideas, as you will see, are merely honest, "gimmicks" that serve to create a market.

Shortly after Labor Day you will find that your members' attention will turn from golf, tennis, swimming and chicken salad sandwiches to football, skeet, curling and heartier foods. The enterprising club manager will now begin to schedule, not only fall events and functions, but will give equal considerations to autumn menus and seasonal foods.

From the middle of September until late in January, America's attention turns to those 48 hours from Friday evening until Sunday night, which are dominated by football. To the alert club manager, this is a created market to capitalize on. All he has to do is give it a label and provide the right types of food (and drink). One obvious, but perfectly good description would be Fifth Quarter.

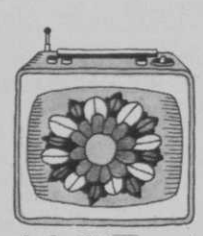


FIFTH QUARTER:
This dinner can be a hearty, fifth quarter buffet, available at 5:00 p.m. for those returning home from various locations. Try roast rounds of beef, prime ribs, sliced sirloin or possibly turkeys and hams. To this add the seasonal foods such as squash; in its endless varieties, egg plant, broiled tomatoes, plus potatoes. Whether they are baked, au gratin, lyonnaise, cottage fried, or mashed, potatoes will be consumed when appetites are hearty.

Don't forget items like soufléed sweet potatoes, carrot rings with fresh pea pods or creamed spinach. Colorful Jello moulds with fresh fruits, green and red cabbage, cole slaw, Waldorf salads, and fall melons might also be considered along with corn pudding and endless "casserole type" foods.

Desserts may now be larger, with items like hot apple pie with cheddar cheese, chocolate tortes, pumpkin pies, and old fashioned bread and rice puddings. Beverages can be "winterized" along about this time by serving *Viennese coffee* (½ hot coffee, ½ whipped cream), *coffee Mexicana* (½ hot coffee, ½ hot chocolate and piece of stick cinnamon).

Also, purchase some colorful tea pots and serve large pots of brisk tea at dinner. You might also take an electric coffee brewer and make "brewed" Sanka for your members.



SUNDAY BRUNCH:
Sunday brunches prior to pro football games or an afternoon before the TV set might include this type fare: Entrees—corned beef hash, poached egg; lamb chops with rasher of bacon, piece of link sausage; aided and abetted by broiled tomatoes Parmesan or oysters Florentine. Hash brown potatoes or thin julienne potatoes can be passed. Combine vegetables in marinated salads and serve cold. Desserts can include—coffee cakes, minature sweet rolls or those "last of the season" berries.

WORLD SERIES:
While football will consume most of the fall, don't overlook the mens' buffet luncheon with available TV sets for the "World Series Watchers." Right now I will go out on a limb and predict St. Louis and Detroit, and with it, early luncheon customers in the western time zones and extended luncheons on the east coast.

If I am right, the middle west can expect many diners using the club during the entire afternoon. But take advantage of the occasion and serve them buffets. Hot meat sandwiches carved on the buffet line and "custom made" will provide the major portion of selections, with salads, tomatoes, and cheeses rounding out this simple fare. Try serving *pitchers* of beer to save interruptions and try such things as re-naming a Bloody Mary the "St. Louis Cardinal" or taking a double Martini with a giant pearled onion and promoting it with the the slogan "put a tiger in your tank" and thereby let each side drink to his favorite.

HALLOWEEN EVE:
Most members prefer to stay home to welcome all the "trick or treaters." It is a real "trick" to get folks out on that evening, but "treat" them good if they use the club this evening.