Fertilizer Experiments at New Brunswick (N. J.) Summarized

By HOWARD B. SPRAGUE

I NTERPRETATION of fertilizer experiments conducted at any one location must be made in connection with the climatic conditions, the nature of the soil, and the kind of plants used. Fertilizer experiments at New Brunswick have been conducted on a heavy silt loam, medium in fertility, which is well drained but rather difficult to keep in good tilth. Twelve types of fertilization have been applied for two and one-half seasons on Virginia bent, and four types of fertilization have been applied to Metropolitan

*Paper at Rutgers University Greenkeepers' short course. bent for two seasons. Several additional treatments have been applied to Virginia bent for the season of 1928 only. Detailed results for these tests are given in tables which follow.

In general, any method of fertilization in which nitrogenous materials were used on Virginia bent reduced the abundance of weeds. Manure has increased the number of weeds considerably, probably because of weed seeds introduced. Ammonium sulfate was effective in making the soil acid; ammo-phos was nearly as effective; sulphur applications were also effective but injured the grass. Manure, alfalfa meal, a complete fertilizer, bone

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meal, and sodium nitrate, all tended to make the soil alkaline, the degree varying with the material. Lime was more effective than any of these in making the soil alkaline. Weeds were no more abundant on the plots made more alkaline than on those made more acid.

White clover was increased by organic fertilizers which contain phosphorous and potash in addition to nitrogen, but liming accompanied by nitrogen fertilizer alone did not increase clover. Annual bluegrass (Poa annua) was least troublesome where nitrogen only was added as a fertilizer. The soils made more alkaline by treatment, maintained vigorous turf for a longer period in the fall than those made more acid. Earthworm activities were far greater where organic fertilizers were used than where inorganic fertilizers were applied. Reducing the acidity also seemed beneficial to earthworms.

On Metropolitan bent grass, urea and cottonseed meal permitted more weed / growth than sulfate of ammonia. Urea was nearly as effective in making the soil acid as ammonium sulfate but cottonseed meal had no effect whatever. Ammonium sulfate also appeared to be more effective in controlling white clover and annual bluegrass than urea or cottonseed meal. Cottonseed meal greatly increased earthworm activity.

One year's results with castor pomace showed no control of earthworm. Nitrophoska and milorganite did not increase or decrease abundance of clover and annual bluegrass during the first year. Fifteen pounds of lead arsenate per 1000 square feet applied in the top-dressing on Virginia bent (receiving twelve types of fertilization) reduced weeds, clover and annual bluegrass but did not give complete control. Earthworms were completely controlled by the lead arsenate treatment.

Table 1-Summary of Conditions on Virginia Bent Fertilizer Plots, November, 1928, at New Brunswick, N. J. Treatments Continued for 21/2 Seasons.

Treatment.	Material applied per 1,000 sq. ft. per year. (Lbs.)	Nitrogen applied per 1,000 sq. ft. per year. (Lbs.)	Total dry weight of weeds per plot. (Gms.)	Acidity of soil.1 (Ph.)	White clover.	Pos annua.	Color and vigor on Nov. 19.2	Earth- worm casts Sept. 21, 1928. No. per 12 sq. ft
None	18.75 14.06 16.86	2.85 2.83 2.83 2.83 2.83	2.95 1.64 -58 .83 .78	6,2 6,8 5,4 5,7 6,4	28 11 6 8 3	33 17 16 20 32	m. to lt. m. to dk, m. to lt. light dk. to m.	39 43 28 26 47
Alfalfa meal Barnyard manure Bone meal Light sulfur	688.70 117.08	2.83	1.64 3.74 1.07	6.5 6.3 6.6	10 16 10	25 32 37	m. to dk. medium dk. to m.	91 34 64
Ammonium nitrate	8.77	2.83	1.36	5.3	10	20	medium	28
Heavy sulfur Ammonium nitrate. Light hydr. lime	8.77	2.83	.43	5.2	7	6	medium	18
Ammonium nitrate. Heavy hydr. lime	8.77	2.83	1.61	8.0	4	12	dark	4.3
Ammonium nitrate.	8.77	2.83	.64	8.1	3	18	dark	34

7.0 is the figure for the neutral condition. ¹pH. is a means of expressing soil acidity. ures lower than 7.0 indicate acidity, the lower the figure the greater the acidity. Figures above 7.0 indicate alkalinity, the higher the figure the greater the alkalinity.

2"Dark" means rich green color—vigor good. "Light" means brownish or grayish green color—vigor poor, "Medlum" indicates an intermediate condition.

Table 2-Summary of Conditions on Metropolitan Bent Fertilizer Plots, November, 1928, at New Brunswick, N. J. Treatments Continued for 21/2 Seasons.

Treatment.	Material applied per 1,000 sq. ft. per year. (Lbs.)	Nitrogen applied per 1,000 sq. ft. per year. (Lbs.)	Total dry weight of weeds per plot. (Gms.)	Acidity of soil. ¹ (Ph.)	White clover.	Poa annua.	Color and vigor on Nov. 10.2	Earth- worm casts Sept. 21, 1928. No. per 12 sq. ft.
None Ammonium sulfate. Urea Cottonseed meal	6.32	2,83 2,83 2,83	.41 .06 .29 .23	6.2 5.8 5.9 6.2	15 2 6 7	13 6 18 9	light m. to d. medium dark	33 36 32 81

³pH. is a means of expressing soil acidity. 7.0 is the figure for the neutral condition. ures lower than 7.0 indicate acidity, the lower the figure the greater the acidity. Figures above 7.0 indicate alkalinity, the higher the figure the greater the alkalinity.

*Dark" means rich green color—vigor good. "Light" means brownish or grayish green color—vigor poor. "Medium" indicates an intermediate condition.



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Table 4-Average Effect of Lead Arsenate on 12 Different Fertilizer Treatments, November, 1928, at New Brunswick, N. J.

	No lead arsenate.	Lead arsenate applied, 15 lbs. per 1,000 sq. ft. during the sea- son of 1928.
Weeds per plot. White clover Poa annua Color and vigor. Earthworm casts per 12 sq. ft.	3.51 grams 6.6 per cent 18.4 per cent medium 41	1.46 grams 5.4 per cent 12.6 per cent Medium

Table 3—Comparison of Miscellaneous Fertilizers on Virginia Bent, November, 1928, at New Brunswick, N. J. Treatment for One Season Only.

Treatment.	Nitrogen applied per 1,000 sq. ft. per season. (Lbs.)	White clover.	Poa annua. (%)	Color and vigor.	Earthworm casts, Sept. 21, 1928. No. per 12 sq. ft.
Nonė Ammonium sulfate Ammonium sulfate Ammonium sulfate	1.41 2.83 4.24	10 10 3 2	10 15 10 12	light medium medium dark	50 32 16 15
None Nitrophoska None Castor pomace	2,83	13 10 15	8 13 3 10	light med. to dk. light medium	20 8 41
None	2.83	10 15	2 5	light medium	40 37 25

Club Billing Methods and Policies Are Presented

Carl Truax leads off with conclusion of his article started in May GOLFDOM and Walter Adams puts up his idea

XPERIENCE and experiment indicate clearly that best collection results are obtained by mailing on the last day of the month or the first day following. postoffices are congested for several days after the first as every line of business is sending out statements. To get prompt delivery by carrier it is necessary to avoid the congestion by mailing ahead of it. At many postoffices this congestion is really serious. Inquiry at your postoffice will determine this situation for any manager. (In this connection we might add that your mailings should always be faced, cornered, sorted by postoffices, labelled and tied. It will pay to inquire about this. Some offices ask this-others do not care.)

Bills deposited in the postoffice not later that 5 p. m. of the first (it will be well to ascertain your postoffice's tying time) should reach the members ahead of most of their monthly bills and statements. Managers who have never mailed this early will be surprised at the result if such early mailing is followed up consistently.

Most by-laws provide for posting in 30 days after the bills are mailed. If bills are mailed the first, the manager has the collection situation well in hand as he is in position to post on the 1st. of the following month and the members realize that they cannot wait over and pay last month's club bill out of the following month's income. The late bill is a clear invitation to the members to hold the club bill over for payment out of cash receipts around the first of the following month.

Beware a change during the season! Any manager who has been mailing his members' bills late in the month—with collections dragging into the following month—and who wishes to advance his mailing date will do well to wait for the closed season when only dues are being billed—before this change is made—or else advance the date one or two days per month until the desired date has been attained. An abrupt change would have the effect of doubling up on the chronic laggards who will in such case complain loudly.

Return Envelopes

Addressed return envelopes are inexpensive: several dollars per thousand for manila envelopes. Return envelopes are a valuable collection adjunct. When used they should always be clipped to the back The return envelope should of the bill. be larger than the returnable portion of the bill, without folding. The large percentage of members actually using return envelopes to mail their checks is sufficient basis for using them regularly, whether the manager likes the idea or dislikes the extra work involved. who have never used return envelopes with their bills should try this out for three consecutive months. They will be surprised to learn that the private secretary of the wealthiest member and the wife of the poorest, will both use the cheap manila addressed envelopes and appreciate the slight convenience.

The Follow-up

Two weeks is plenty of time to allow for payment of the bills before sending a statement. Where the by-laws specify payment in ten days then a statement should go out in ten days. Most commercial collection systems call for follow-ups from the 15th to 20th—i. e. during the last half of the month. Where you are competing with the collection efforts of all the merchants in your vicinity, get the start on them and keep it. Find out what their customs are—and anticipate their efforts.

Character of First Follow-up

The first reminder should be very simple, merely a statement of the total amount A very simple card arranged for window envelopes will suffice. Cards of this character can be arranged so that they can be used for other purposes. It goes out on the fourteenth of the month. addressed return envelope is clipped to Uncle Sam's stamped window envelopes are used for mailing. These are much cheaper than commercial window envelopes and the employees will not pilfer them. The stamping operation is eliminated.

In all follow-up forms and letters be sure to state, in substance,—"If you have already forwarded your remittance, please disregard this notice,"—thus shutting off an occasional kick.

No member can possibly object to these statements. During the first season's use of the statement card illustrated only one open objection was made—from a physician who admitted he was easy in his own

collections. Even this objector agreed when it was explained to him that such firm methods—and only such methods—enabled the club to avoid bank interest and yet discount its accounts payable.

Perhaps there are cases where funds are available in such volume that no collection effort need be made—but the examination of forty representative annual reports (1928) from the Chicago district (including the "wealthy" clubs) failed to disclose a single case where prompt and firm billing and collecting could be dispensed with and still discount the purchase obligations.

It is all too well known to managers that if there be any surplus funds for which the manager cannot find use, or promote improvements, there will be directors with more ways of spending than the funds amount to.

The Second Follow-up

This should be marked "Second Notice." From seven to ten days, no more, should be allowed after the mid-month statement. Always clip a return addressed envelope to these follow-ups. This second follow-up may be the same form as the statement—just changing the title. The card illustrated is printed from the same type as the statement. Saves printing cost and does as well as a different card.

Third Follow-up

The third follow-up should be a personal individual letter sent out over the Treasurer's signature in seven days, no less, after the second follow-up. A form letter will do. Always call attention to the posting requirement well in advance of the actual posting date. Always clip an addressed return envelope, stamped, to form and individual collection letters. Be very brief. And most important of all-always ask that a check of certain definite amount (amount due or past due) be mailed to arrive on a certain specified date. on that date always take the next step. Let the delinquent know that you mean business.

Subsequent Follow-ups

The foregoing plan, properly carried out, will, within four weeks or less, collect all outstanding accounts except a very few, and with three or more days remaining before closing the books, these can be classified and dealt with individually. Take the member who is away. Perhaps he has arranged for his secretary, bookkeeper, or member of his family to pay his bills. Give a ring and find out. Or drop a line.

Then there is the thoughtless, careless member who is known to have funds—but is too neglectful. A phone call from the manager or treasurer will get the money. There are other cases—not important—to be dealt with individually. Then there is the main class—the chronic delinquents—which exist in every Club—the same delinquents right along. Let the treasurer deal with these.

A prominent investment banker, and able treasurer of a well known country club, once said to the writer, "I have very little use for the club member who won't pay his club bill, and I handle the delinquents pretty rough." Of course, in a new or weak club the treasurer may have to use considerable diplomacy. And where the member has no equity in the assets at stake-and is a doubtful collection risk -even more diplomacy is needed. manager should be careful to confine his collection activities to routine work "as prescribed by the treasurer" and should never directly "cross" a member with any individual collection efforts. Let the treasurer appear in the collection spot light and receive all the criticism if there be any, even though the manager operates the entire follow-up system.

Chronic Delinquents

The chronic slow pay members are known to every Club Manager and bookkeeper. Always put a signal or marking on their ledger cards or sheets, as soon as discovered to be chronic. These may be divided into two classes-those who fear posting and those who either do not care or cannot prevent posting. The first class is easily handled, especially if the followup matter is varied from month to month -as soon as they "get onto the system." The second class makes almost all the work for the treasurer. Start early on this class. Mark their ledger accounts. Give them special individual treatment. Change the system from time to time. Advance your mailings in this group. Bring this delinquency to a head before the regular time. Get their accounts into the hands of the treasurer very early-and then follow up on the treasurer.

Do the Members Object?

Why a hard boiled collection system? Won't the members object? Isn't such procedure "commercial?" Suppose it is "commercial." How else is the club management to get in the money? Send out the bills and wait? Add the unpaid balances

to the new bill each month—and wait some more? Depend on posting, according to the by-law if there be one. Ask the Board to enforce the suspension rule? No Board is going to enforce the suspension rule within any reasonable period. Posting is no remedy. A long posting list is a confession of collection incompetency. We might go farther and say that where any club of local membership under 500 has a long list of delinquents to post, the manager is either not competent or does not appreciate the relation between his collections and his discounts.

Suppose an occasional delinquent does kick. He is easily silenced. Suppose members who are good pay, slip once in a while and object to the notices they get. A simple explanation will win their approval. Apologies are fatal in any collection effort. Be firm. Stand your ground. Insist on payment. Lay your action onto your Board if you wish but don't hedge.

Is the system outlined "hard?" Certainly not, it is mild compared to the usual bylaw that requires posting in 30 days and automatic suspension for non-payment in 60 with expulsion and forfeiture in 90 days. Which shall it be? Shall the manager let his collections ride, doing nothing to collect the slow accounts, never crossing any members, leaving the worst delinquents to the treasurer, and letting the trade creditors wait, and losing discounts or paying bank interest, all the while giving the members the impression that the manager is easy with collections, and by inference, easy with the club's funds? Or shall the manager take the aggressive, educate members to prompt regular monthly payment, keep down his receivables, discount his purchases, be firm and systematic with his collections, and create in his members' minds respect for his care and watchfulness of the club's funds?

What's the Policy on Delinquents?

By Walter T. Adams, Mgr., Detroit C.C.

If I were to make a survey of the clubs in the country to determine the best method used in the collection of accounts, handling delinquents etc., it would disclose that many methods are used; that by-laws in this particular regard greatly vary.

By a closer analysis it would further show that each club has adopted a method



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to best suit its conditions, so that by-laws must necessarily be different when it is /evident that conditions are not identical.

One phase of this subject, where I believe there exists more uniformity in bylaws and actual practice, is in the matter of posting the name of delinquents. I am of the opinion that this general practice is fundamentally wrong and chaotic in method

Another plan used is to charge a penalty of from one to five per cent on the amount delinquent. This appears to me also very wrong as in the case of posting and is of a much worse character. There are other means used, suspension, expulsion, etc., all of which are invariably poorly applied, and some clubs seem to take pride in the severity of their rules and enjoy the opportu-

nity of putting them into use.

I do not take the position that by-laws or rules are not necessary; on the contrary, accounts must be collected and members should make payments as promptly as possible. Many clubs are functioning with limited cash resources, and it would be inequitable for a club to resort to bank loans to pay their obligations in the face of outstanding accounts due from members. There also comes a time when some definite and conclusive action is required. All of these factors treated briefly, require rules, board action, etc., but they can be sound. Discretion must be applied, and especially keep in mind that you are not dealing with strangers, but with members or brothers, who originally established their character, responsibility etc., when they became elected.

What sound reason can be offered, for an institution like a club to be more severe in the application of its laws or rules than any other business. Does a commercial house, for instance, post your name in their lobby or corridors when you do not pay your bill within ten days or thirty, or whatever the case may be? When they stop your credit or other action, do they cause to be known to your friends that you are in financial difficulties by advertising it? What business, big or small, can be cited, that seeks means of embarrassment not only to the man, but to his wife and perhaps family, who are innocent and have no knowledge of the matter, nor the ability to act.

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Uproar If Club Were Posted

If the reverse was applied, how many clubs owe obligations to purveyors or other creditors, beyond the customary period of paying? What would be our attitude were they to post the name of the club somewhere, conspicuously or charge us a penalty interest, stop deliveries, etc. I do not believe that it would be accepted very favorably. It brings to my recollection an old proverb.

"He who expects equity, must give equity in return."

In concluding, I am of the opinion that rules governing delinquents should be made as lenient as possible, and that all cases should be treated confidentially between the board and the member. I see no reason for advertising it to others on a bulletin board, who, after all, are not concerned.

The primary and only object is to collect accounts due, and this I believe can be accomplished without resorting to hard-boiled methods that serves no purpose if one is temporarily unable to pay.

Let us remember, and practice what is preached, that a club is a big home, created to promote golf or other athletics, closer relationship with one another, etc. Administration of the affairs of such an institution should be in a way and manner that conforms with the ideals of a club, and be in harmony with its noble purposes.

Posting Makes Them Pay Up

Editor, GOLFDOM.

Sir:

In reply to the article on page 82 May issue (What's the Policy on Delinquents?) wish to inform you of the policy of this club and its results.

Being a new club, in 1925 and '26 our treasurer was reluctant to post any delinquents, consequently at the close of the season a great deal of money was outstanding, much of which was not paid until the following year.

In 1927 a new treasurer was elected and thereafter a delinquent list was posted on the first of every month; also further credit and playing was suspended.

Today our delinquent list is very small, only two names being upon it.

P. A., New York.