

"Any fool can find mistakes to criticize But progress in this battling World is won By men too busy with constuctive work to satirize Their neighbors' faults while their own job's undone."

ATGUST

1934

This NEWSLETTER is published monthly by the Greenkeepers Club of New England, and sent free to its members and their Greens' Chairmen. Subscription price ten cents a copy, or a dollar a year.

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August,	1934	Vol.	6,	No.	8

If Ye Editor had nothing else to do, he would write each member asking for contributions of articles and news for the coming issues of the NEWS-LETTER; but, as he has other work at hand, all he can do is plead thru these columns for a little assistance, and hope that a few will take pity and desire to help. The NEWSLETTER and Ye Editor need your support. Why not help?

Each year brings some new contribution or new idea which is of especial interest or help to us all. It seems to us that the new idea of the result of volatile mercury on the soil microorganisms, and hence on the turf, is of great importance. This idea would explain that retardation often noticed for a few days on turf to which mercury has been applied. The fact that the effect on the soil which has a slightly acid to neutral reaction is not so marked as it is on a more acid soil would be another reason for not keeping greens so acid as has been the custom for several years.

As a result of the reduced income of most golf clubs the past several years, most greenkeepers are now forced to maintain their courses with less manpower than is really needed for good maintainence. It is certainly to be hoped that when better times come with more money with which to work, that greens committees will realize that more men are needed, and not try to get along with the present reduced manpower.

That the average golfer is a born gambler seems to be borne out by the fact that during this month's racing at the new Narragansett Track in Pawtucket, R. I., practically all the golf courses within twenty miles at least report a marked falling off in play during the afternoons. The golfers have gone to the races!

The annual Greenkeeper-Pro tournament is only a little over a month away. Get your pro lined up, and help to make this event as successful as the last two were. It will be held this year on October 1st at Braeburn.

More and more greenkeepers have learned the wisdom of keeping exact records of all fertilizers and chemicals applied to their greens, tees, etc. during the year. Records of this work should also include acidity readings of each area at the start of the season, and also near the end of the season, and records compared from year to year.

Most thinking greenkeepers these days are keeping their greens only slightly acid, in most cases, we believe, as near as possible to a pH of 6.0.

Is the nitrogen which you feed to your greens all from one source, or do you have several sources? Do you use a complete fertilizer occasionally?

The value of a good turf nursery was demonstrated this year with its large amount of Winter-kill, and the scald of the Summer. Those clubs which had good turf nurseries realized on their investment, and proved it wise.

Fall is nearly with us and with this season comes one of the best times for fairway fertilization. Have you decided what to use, and is your greens committee convinced that your fairways need the fertilizer?

The above are a few observations upon subjects which we believe to be important. Possibly one may start someone thinking a bit. Oftimes the perfectly evident subject is the one we forget. Anyone who disagrees with any of the above is invited to send along his comments. We shall be delighted to have them!

NEW BULLETIN BY DR. SPRAGUE

Recent work by Dr. Howard B. Sprague of the New Jersey Agri. Exp. Station is described in a recent bulletin by that station, No. 570, "Utilization of Nutrients by Colonial Bent (Agrostis Tenuis) and Kentucky Bluegrass (Poa Pratensis)". This bulletin describes the various experiments conducted and then goes on with the following:

Discussion

"These results are of considerable interest in view of the general practice of fertilizing heavily with sulfate of ammonia the turf on lawns, golf courses, parks, and similar areas. There is also an increase in the adoption of intensive fertilization of pastures with ammon-ium compounds. It is not uncommon for sulfate of ammonia to be applied at the rate of 500 to 600 pounds per acre yearly on such areas, irrespective of the types of vegetation present. Since these experiments indicate that bluegrass is much more sensitive to excess ammonium nitrogen that is bent grass, it is obvious that in preparing a rational system of fertilization, more attention might well be given to the species present in the sod. Moreover, strong evidence of failure of even bent grass to assimilate liberal supplies of ammonium nitrogen in strongly acid solutions, coupled with the positive injury to both tops and roots, points to the need for the careful use of ammonium fertilizers.

The inability of bent grass to utilize more than a portion of the ammonium nitrogen when supplied in abundance in mildly acid solutions, points to the possibility of uneconomical use of ammonium fertilizers by plants growing in mildly acid media. Under conditions permitting the utilization of nitrogen by the plant, liberal feeding with this element undoubtedly increases top growth at the expense of root development. Under field conditions, this means a less extensive occupation of soil by the roots of grasses, with consequent danger of injury or of reduced yield in summer resulting from failure to obtain adequate moisture in dry periods from the limited soil volume occupied. From the standpoint of either turf maintenance on playing and recreation areas or pasture management, the most desira-ble system of treatment is one which provides for a relatively uniform growth throughout the entire season. Heavy nitrogen fertilization during the seasons of new root development would thus defeat the purpose of the treatment even though the soil reaction were such that direct injury to the plants were avoided.

Summary

Kentucky bluegrass and Colonial bent grass showed similar growth responses in the optimum treatment of a series of sand cultures supplied regularly with various nutrient solutions of the modified Tottingham type. Colonial bent was considerably more tolerant of deviations from the optimum nutrient solution than Kentucky bluegrass, in both root and top growth.

The quantity of ammonium nitrogen contained in the nutrient solutions employed was the dominant factor controlling development of both grasses. Solutions containing the lowest amount of ammonium sulfate produced the most growth, and yields of dry matter fell with increasing amounts of this substance, even though the total osmotic concentration of the solutions was held constant. Variations in the supply of potassium phosphate and magnesium sulfate were of minor importance in controlling yields of dry matter.

Chemical analyses of tops and roots showed a higher percentage of nitrogen in both species when grown in solutions with larger amounts of ammonium sulfate. The content of nitrogen was inversely correlated with total growth, indicating that the absorbed nitrogen had accumulated sufficiently in the plant roots and tops to become toxic.

The relative amount of phosphorous was about 50 per cent. greater for plants grown in phosphate-rich solutions than for those supplied with phosphatepoor media, with both Colonial bent grass and bluegrass. The percentage of phosphorous was essentially the same in similar cultures of the two grasses.

The percentage of magnesium contained by roots and tops of the two grasses was very poorly correlated with the supply of this element in the nutrient solutions.

The calcium content of Colonial bent grass was consistently higher than that of bluegrass grown with identical solutions. The calcium content of both species varied greatly in the several cultures although the quantity of this element was constant in all nutrient solutions. Fluctuations in calcium content were more marked with bluegrass than with bent grass.

The greatest amount of nitrogen was absorbed in the entire growth period by grass supplied with the least ammonium sulfate in nutrient solution. Total growth was more important than percentage content of nitrogen in determining the total nitrogen recovered.

Nitrogen recovery by Kentucky bluegrass was equal to that of Colonial bent when both were grown in the most favorable nutrient solution, but bluegrass utilized 35 per cent less nitrogen than did bent when the least favorable medium was supplied to both grasses. Bluegrass appeared far less capable of utilizing ammonium nitrogen in these acid nutrient solutions (pH 4.8 to 5.1) than bent grass.

The total phosphorous removed varied from 0.280 to 0.575 gm. per culture of Colonial bent grass, and from 0.175 to 0.537 gm. for bluegrass. Yields of dry matter were closely correlated with total phosphorous recovered in both species. Apparently, Colonial bent may exhaust the supply of available phosphorous in the soil quite as rapidly as bluegrass.

Total absorption of calcium was consistently greater with Colonial bent than with Kentucky bluegrass. The wellknown tolerance of bent grass to acid soils is not proof of a smaller demand of this species for calcium.

In contrast with additions of ammonium sulfate, which inhibited growth, increasing the supply of nitrogen by adding sodium nitrate to the nutrient solution greatly stimulated growth of bent grass.

Ammonium chloride additions to the standard nutrient solution had essentially the same effect as ammonium sulfate in reducing growth of bent grass. The addition of Na2SO4 did not inhibit growth, but NaCl reduced growth to the same degree as did ammonium chloride.

Adjusting the reaction of the nutrient solutions to pH 6.5 with NaOH largely overcame the toxic effects of ammonium sulfate additions, but total growth of bent grass in such solutions was not augmented by additional nitrogen in this form.

Nitrate of soda produced greater growth responses in nutrient solutions with pH values of about 4.5 than in similar solutions with the pH adjusted to 6.5 with NaOH. However, nitrate of soda was superior to sulfate of ammonia in promoting growth, even at pH 6.5.

The ratio of roots to tops was greatly changed by adjusting the pH values of the solutions; roots were relatively more abundant in the strongly acid media. Nitrate additions to the acid solutions greatly stimulated top growth without markedly affecting root development, but when nitrate additions were made to similar solutions with pH 6.5, root growth was actually reduced 35 per cent. or more. Ammonium sulfate additions to nutrient solutions with pH 4.5 did not modify the root-top ratio, probably because of failure to assimilate the nitrogen under such conditions. Relative abundance of roots was reduced by ammonium sulfate additions to solutions with pH 6.5."

LAWN DAY AT MASSACHUSETTS STATE COLLEGE

The annual Lawn Day was held at the Mass. State College on July 25th, as part of Farm and Home Week. The program was presented under the direction of Prof. Lawrence S. Dickinson, and included talks and a trip to the various turf plots on the campus.

The first speaker was Mr. Arnold M. Davis of the Landscape Department. Mr. Davis spoke on "The Design and Use of a Lawn", and brought out that a good lawn is the greatest horticul-tural triumph which can be achieved. Any piece of property should be divided into three areas, public area, private area, and service area. In designing the public area, the house should stand out to its best advantage, the lawn serves as a setting for the house; should radiate an air of dignified hospitality. The lawn should be level or slope away from the house. The lawn has to be mowed. Any planting should be against house, around the edges or possibly a hedge in front of lawn area; keep front area as open as possible, except for a possible tree to add shade or a pattern of tracery.

The service area, where "laundry is dried" or "car is washed", etc., the "workshop" area, is screened out if possible. If space is too small, some form of a fence may be used, the possible use of grapes on a wire fence as a screen.

In the private area the one thing wanted is privacy. Possible background planting, the area should be as large as can be conveniently maintained. Lawn area which is level is much better than any other, a slope should be away from

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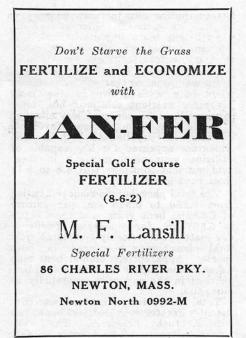
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house if possible. A lawn is the most refreshing type of a garden; if there are gardens, the lawn serves as their background.

Uses of lawns:

Entertainment: Lawn furniture should be of type which can stay out of doors, durable and comfortable. The lawn area should be the center of family life for Summer months. Should be the picnic area, the game area. As a picnic area, there is a place for a fireplace, also to be used possibly as an incinerator. Water should be available, pipe run out underground to which hose may be attached, should be laid at incline toward house, so that water may be drained in Winter.

Recreation on Lawn: Croquet, possible Lawn Tennis, Badminton. Horseshoes, etc.

A good reference book is "Games for Small Lawns" by Sid G. Hedges, published by J. P. Lippincott Company. In any plan for development of lawn area, remember that it must be cared for, should have ease of circulation.

Prof. Dickinson, speaking on the general subject "Varied Experiences With Turf", discussed the so-called Winter-kill, which has been prevalent this year. He said that 90% of this winter-kill has been due to one of three reasons, poor or sluggish surface drainage, acidity of the soil, or compaction of the top soil. A survey of many putting greens showed that where there was a slope of at least 15 inches to a hundred feet there was very little winterkill; lawns also followed this rule. Treatment for winter-kill, where patches were completely killed, lightly raking and brooming was best treatment. The object is to open the crowns of grass to air and to dry soil. Where there was organic matter, spiking and the application of a small amount of hydrated lime seemed effective. The grass was not killed by freezing.

Bare edges around an area usually caused by turning lawn mower in same place too much. Eliminate this by going around the edge a different number of times before going across. Prof. J. W. White of Penn. State

College gave an interesting talk on "Soils for Turf". Prof. White brought out that the soil is the source of all life and all wealth. The soil is very complex. One gram of soil contains some twelve million soil particles, the actual surface would spread out over three square feet, contains about thirtyfive minerals. Spread over these particles are colloids, a jelly-like substance, also crystaloids. The colloids hold the crystaloids, keep them from washing away. The organic part of the soil is called humus. There are also a hundred million soil micro-organisms, divided into various groups. Whatever grows above ground is dependent upon what goes on below ground. Pressure and water are two factors which govern the conduct of these micro-organisms.

The tendency in fighting turf diseases is to overdo rather than to underdo. Applications of mercury will kill diseases; it seems logical that it will affect organisms below the ground. Experiments seem to point out that three or four ounces of mercury per thousand square feet have a pronounced effect on organisms which are responsible for nitrification in soils. So far it has not been found that arsenate of lead has any effect on micro-organisms.

The most lasting effect was on soils which were acid; on soils between pH of 6 and 7 the effect didn't last long. There is a possibility of volatile mer-cury killing the plant or having an effect on it.

Soils in Kentucky luxuriant grass regions are high in phosphorous. This shows that it is necessary. Rake in at least a ton of superphosphate or its equivalent per acre before seeding. In the past, recommendations went

too far in controlling weeds by acidity. Bacteria disappear as acidity increases and fungi come in. Now the tendancy is to use too much lime. Soils between 5.8 and 6.5 are O. K.

There is competition in the soil for the nitrogen between the roots and the micro-organisms. There should be dif-ferent sources of nitrogen.

Important recommendations are to know the exact area of all areas such as greens, and to keep accurate notes of

all treatments, etc. Mr. R. D. Pryde of Orange, Conn. spoke on "Turf Tips by a Turf Grower". Mr. Pryde discussed his experiences over several years of maintaining turf. He belives that velvet bent is ideal, but very susceptible to disease and slow of

growth. Stolons are preferred. There are no set rules. Greater cooperation with experiment stations and colleges is urged. Arsenate of lead is not a positive control for earthworms in some cases. Cut with a sharp mower and leave the grass cuttings each day, do not use boxes.

In concluding the day's program, Prof. Dickinson noted various points which had been brought out during the program.

- 1. Use of lawn more.
- Preseeding fertilization unneces-2. sary except for superphosphate.
- 3. Use of lime to bring soil to more normal state.
- 4. Use of phosphorus.
- Effect of mercury on soil organ-5. isms.
- 6. Know the area.
- 7. Stolons correctly used make good turf.
- 8. Varying fertilizers as sources of nitrogen.
- 9. No guaranteeing results.
- 10. Cutting 50 inches of grass yearly.
- 11. Light frequent applications of fertilizer.
- 12. Clippings left on lawns, desirability on putting greens.

MARTINDALE COUNTRY CLUB Auburn, Maine

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AUGUST MEETING

The August meeting was held on the 6th at the Agawam Hunt Club, East Providence, R. I. Results of the golf tournament were as follows:

Class A R. W. Peckham and E. Phinney tied for first net with 65; Phinney won in playoff. H. C. Darling, 3rd net, 67.

- P. Hayden, 4th net, 70.
- A. Barney, 5th net, 71.

Class B H. Cottelle, 1st net, 65. C. O'Keefe, 2nd net, 69. E. Hansen, and M. Greene tied for 3rd net with 71; Hansen won in playoff. Special prize for players over 60, donated by Chairman of the Greens Committee Merriman was won by R. W. Peckham, after a playoff with H. Cot-telle, both having net of 65. During the day there were various

demonstrations, such as of the new spiker, the Porcupine; and of the Mc-Clain Barrel Pump Hydro-Mixer Shower Nozzle outfit, also various sprinklers.

The July meeting of the Rhode Island

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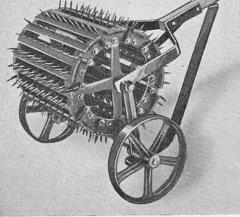
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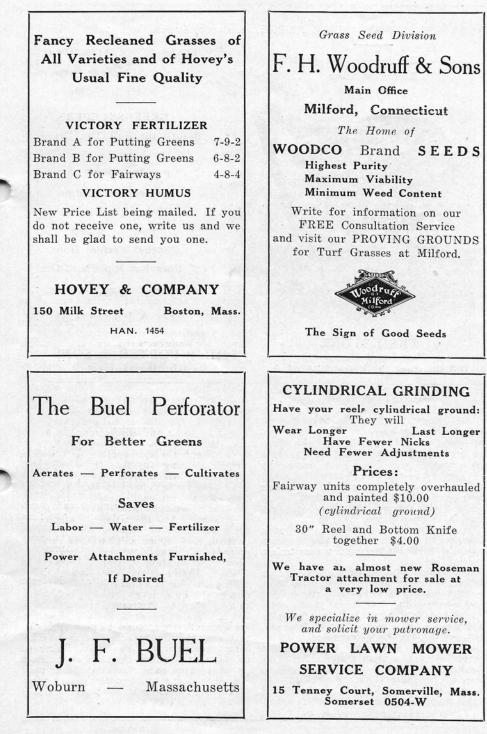
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Greenkeepers Association was held at the Wannamoisett Country Club on July 24th. An educational program consisted of talks and discussions on vari-ous turf diseases. Dr. Howard of the R. I. State College spoke on "Fairy Ring", pointing out that there are two types, one which kills the grass, the dead area being caused by lack of water due to the compact mass of mycelia, and the other type where area is stimulated due to the liberation of ammonia from digestion of organic matter. For control, use copper sulphate solution, 4 pounds to 100 gallons used as a drench, or a 10% solution of iron sulphate.

Prof. Erwin spoke on brown-patch, telling of the susceptibility of various strains to both large brown-patch and to dollar spot. Minimum temperatures are being studied around the state this season, and there seems to be a correlation between the attacks and minimum temperature. The dollar spot will come in on much lower temperatures. Organic vs. inorganic mercury was discussed.

A golf tournament was held following the educational program.





EVERYTHING NOT BROWN PATCH

By Ernest Law

Reprinted from

"The Pacific Greenkeeper"

During all the furor this season in regard to brown patch it would be well for all greenkeepers on the Pacific coast to take care that their enthusiasm for combatting this one disease does not obscure to them some of the most vital considerations in maintaining good greens. Some few years ago Shake-speare in his play, "The Merchant of Venice," voiced the eternal verity that "all that glitters is not gold" which currently may be paraphased into "all that is brown is not brown patch." Brown patch is certainly prevalent and for that reason greenkeepers only too frequently have been willing to blame discolorations on their greens to this ailment and treating accordingly rather than investigating the true cause of the difficulty.

Occasionally the earnest efforts of greenkeepers to prevent brown patch themselves have led to patches of turf being burned out by the chemicals that have been applied. Others who have seen their grass yellowing under the glare of the midsummer sun have prescribed a tonic in the form of sundry topdressings and fertilizers which also have served to burn unsightly patches on the best of greens. Still other greensmen have been scared into frenzied application of preventatives by the sight of one or two brown spots the size of a dollar which may have been caused by nothing more than a discarded cigaret. The presence of cutworms in the green may account for other brown spots which have raised the hue and cry against brown patch.

A good rule to follow is to give the greens nothing during the warmest weather except plenty of water unless careful investigation has proved beyond the shadow of a doubt that the green is inflicted with brown patch, and even in this extremity proceed in treatments with extreme moderation and care. Grasses do not need building foods in hot weather any more than do humans, but grasses not being supplied with bicarbonate of soda and other human remedies express their distaste for force feeding by burning up. Any application of fertilizer slight or mild enough as not to burn the grass plants is not great enough to have any effect what-

soever and most of it will be leached away at the first irrigation, or washed into hollows where it will burn the grass. So beware; it is also economically unwise to apply fertilizers in extremely warm weather.

Something else to watch out for in connection with the brown patch season is the visits of salesmen of spurious remedies. The cry has been pretty well broadcast that greenkeepers would bartive of the disease and there are plenty of unscrupulous salesmen out of employment just now who would sieze upon the opportunity to peddle rattlesnake oil if they thought they could persuade someone to buy it as a cure for brown patch. So beware again.

It is of interest to note that the disease found by Dr. L. E. Erwin of the R. I. Experiment Station last year, the fungus Corticum fuciforme, which is distinguished by the tufts of bright coral pink which stand out from the leaves and stem of the grass, has been found on five Rhode Island golf courses this season. Among others was R. Wallace Peckham's Sachuest, and Wallace has at last found out what real disease is! Dr. Erwin is conducting experiments with this disease at Louisquisset Golf Club in North Providence.

The August meeting of the Rhode Island Greenkeepers Association was held on August 20th at Kingston. A trip to the experimental plots and to the new football field where Prof. North is conducting an experiment with various grasses and mixtures, was the first part of the program. Golf followed lunch, some twenty endeavoring to come even close to par at tricky Annaquatucket in Wickford, where Colonel Milton is genial host. Golf prizes were won by Oscar Chapman and Everett Pyele.

There recently reached our desk the "Results of Turf Experiments at Milford, Connecticut" by C. W. Baker of F. H. Woodruff & Sons. This bulletin is of interest as it shows what one seed house is doing to show its buyers what various grasses will do under various conditions.

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Judicious fertilization, including the generous use of nitrogen, is the effective and economical way to overcome both faults. Nitrogen, besides being the element responsible for clover suppression, encourages existing grass plants to spread and thus obliterate the cuppy lies.

Fall and spring are the logical seasons for fairway fertilization, because of more abundant rainfall and moderate temperatures.

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