What They Told the Greenmasters

You're Big Time—You Need Better Publicity

By MERRELL WHITTLESEY
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Every supt. I know of has to be his own public relations man. Very few clubs have employees who specialize in this kind of work. If they do, their p. r. man probably plays up news that is considered more glamorous than the kind the supt. makes.

So you're on your own! How do you go about getting publicity or recognition? I suggest getting to know the local golf writers, reading their columns to find out what they're interested in and asking them when they prefer to be contacted for column notes. It also doesn't hurt to get acquainted with editors of your paper's garden section, rotogravure and real estate dept. All these people are looking for ideas and stories that you can supply.

I'd be around where people can see me when tournaments are played at your club. You should be there to take bows when golfers comment about the fine condition of the course. They say that no more than 25 per cent of club members know their supt. Whose fault is that? I say it's yours and you should do something about it.

What makes news from the supt's standpoint? Your meetings, elections, tournaments you hold among your association members, recognition that you get from local, state or national groups. Also changes you make in your course such as rebuilding tees, greens, etc. Don't overlook any research work you may be a part of or testing you may carry on for researchers. There are many things you do every day that make news if you only stop to realize it.

Suggests Informed Publicist

I think your national organization needs a publicity man. As I see it, you fellows are big time. You don't need a man in a gray flannel suit but someone who knows something about golf. It's apparent from the stuff that hits a golf writer's desk that 99 per cent of it is written by people who never see a golf course. So, if you take my suggestion on this one, make sure your publicity man knows the game.

Finally, I'd like to see you change the title of your occupation. Supt. is unromantic. You need something shorter and snappier that will fit more readily into newspaper heads. Also, the name of your organization is too long. I don't mean to be critical. I want to see you get all the publicity that is coming to you, but you make it tough for newspapers because that word, 'superintendent,' takes up too much space. Furthermore, it doesn't tell what you're superintending.

Poa Annua Control in New Jersey

By RALPH E. ENGEL
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Experiences of a supt. with sodium arsenite and promising chemicals led us to study chemical control of poa annua. Two years were spent screening materials at different seasons and rates. At the close of this period, we selected sodium arsenite, maleic hydrazide, and endothal as worthy of further study.

These chemicals were sprayed on test plots across a fairway of the Canoe Brook CC through four seasons. At the close of the past season, we concluded that endothal can produce a significant reduction of poa annua in bentgrass fairways of our area. We shall recommend that its use be restricted to two or three applications in early spring at a rate of 1/2 lb. per acre. It must not be used on fairways that have solid areas of poa. The endothal treatment, as used, gave nearly 100 per cent control of white clover.

Sodium arsenite, at one lb. per acre (plus 1/4 lb. of 2,4-D), gave a measurable reduction in poa annua. Since discoloration was scarcely noticeable, it is possible that a slightly higher rate of sodium arsenite could have been used safely.

Caused Summer Injury

Maleic hydrazide treatments were discontinued before the end of the test. While this chemical checked poa seedheads effectively, it resulted in summer injury and reduced grass competition to the extent that severe clover infestation occurred.

At Louisville, I stressed that a new material or procedure should be tried conservatively. We suggest this for endothal in New Jersey and we would be far more emphatic in recommending it for other areas.

A study of nitrogen carriers in 1957 compared soluble and insoluble carriers at differing rates and patterns of treatment. Treatments were made on 1/4 in. creeping bent. Clipping weights and color ratings were made throughout the season. (1) The insoluble materials gave steadier nitrogen stimulation. (2) a single application of ureaform gave higher stimulation at the start of season and lower stimulation at the end of the season than an equivalent amount of ureaform in repeated applications; and (3) an activated sewerage sludge gave more stimulation and growth, especially later in the season, than a processed tankage or a ureaform. This test will be repeated in 1958.

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Sand As Framework of the Green

By O. R. LUNT
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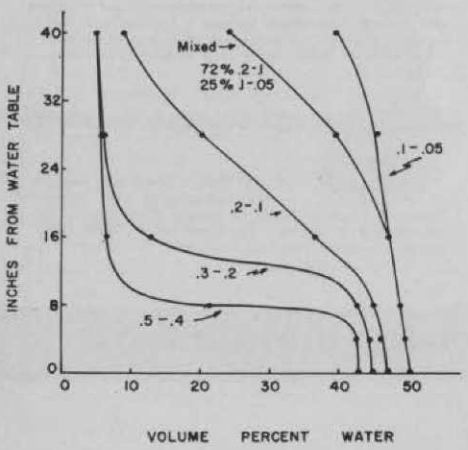
physical properties required in putting green soil appear to be a free porosity of 10 to 15 per cent developing after irrigation, a relatively high infiltration rate so that this amount of free porosity is developed soon and a retention of about 10 per cent or more available water on a volume basis. This last figure is quite arbitrary — lower values of available water may necessitate too frequent watering. A high sand content mix of proper grade of sand can be made to meet these requirements and, as will be pointed out, it is also possible to have a high water holding capacity with sand under shallow soil conditions. Sandy soil mixes do not have high retentive capacities for many plant nutrients. Fortunately, there are available many special purpose fertilizers (Nitrogen, phosphorus, potassium, calcium, magnesium and sulphate (97 gypsite and gypsum) which should make fertility management of sandy greens relatively easy.

Use of calcined (structurally stable) clay aggregates offers an alternative approach to the use of sand in putting greens. Theoretically, calcined clay aggregates could be prepared which would have a high waterholding capacity, adequate free porosity, high infiltration rates and high retentive capacity for plant nutrients.

Selection of proper grade of sand is all important if sand is to be the skeletal material in a green. The best way of properly selecting and preparing a green mix is with the aid of laboratory tests. Supts. would be saved much grief if greens were constructed to specifications. The type of tests necessary are not difficult to perform.

Fig. 1: Volume per cent moisture retained by various grades of sand as determined by height above a water table.



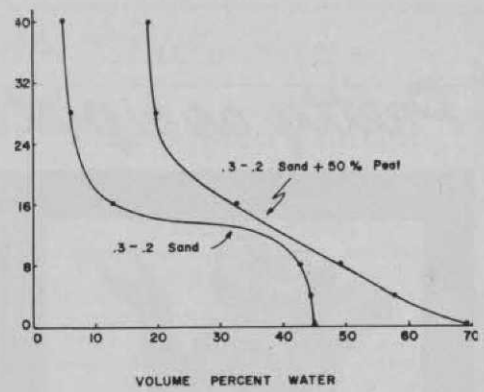


Fig. 2: Moisture cointent of 0.3-0.2 mm dia. sand and sand plus 50 per cent by volume of coarse spagnum peat as determined by height above water table.

If sand is to form the framework of the soil mix and constitute about 85 per cent of the mix, water and air relations of the mix will be strongly influenced by texture of the sand. *Fig.* 1 summarizes water retention of various grades of sand. If columns of sand were placed in a pan and wetted thoroughly at the surface so that water passed all the way through, and the bottom of the column were standing in water, the curves trace out the equilibrium moisture content of the sand at various distances from the water surface. Air space in the soil is the difference between the moisture content at water level and moisture content at any particular distance above water level. Thus, in a sand of .5 to.4 mm diameter range at about 7 to 9 ins. above water level, moisture content suddenly decreases and percentage of air space suddenly increases. Sand in the range .1 to .05 remains practically saturated with water even 40 ins. above the water table.

If soil underlying sand were impervious and excess water had to be removed by tile drainage, moisture content of the sand, after drainage ceased, would be very different than in the case where drainage occurred through the soil.

Some Important Facts

These important facts emerge from the data: Water and air proportions in sands will depend very much on whether the soil drains well or poorly under the sand. If tile drainage is used, and depth of the sand layer is about 20 ins. or less, shallow soil conditions exist and water retention of the sand is greatly increased. If shallow soil conditions prevail, water and air relations which exist following an irrigation (when drainage ceases) depend on the texture of the sand and the distance above the water table which is at tile depth.

It is apparent that proper size of sand to be used in a green mix will be dependent on depth of sand, drainage in the underlying soil as well as other considerations such as frequency o

rainfall or intensity of irrigation.

The practice of purposly making subsoil underlying a green impermeable and depending upon tile drainage for excess water removal has considerable appeal. This technique would greatly increase the water-holding capactiy of the sand. If the sand depth were 15 to 20 ins. it would not be difficult to prepare mixes having 10 or more ins. of favorable air and water relations.

Air Space Factors

Fig. 2 shows that incorporation of coarse organic material such as horticultural grade peat affects soil structure principally in the range of pore sizes which drain in the range of about 0 to 10 ins. from water level. Thus, *Fig.* 2 shows that an 0.3-0.2 mm sand would have about five per cent air space 10 ins. from a water table. If 50 per cent peat by volume had been incorporated, the air space at 10 ins. from the water table would be about 24 per cent.

Incorporation of moderate amounts of clay in sand-soil mixes will increase capacity of the mix to retain most fertilizer elements. It will increase water-holding capacity of the soil somewhat, especially if deep soil conditions exist (i. e., drainage is satisfactory underneath the sand).

Stabilize Clay Aggregates

This can be done by blending well aggregated, structurally stable clay soil in the proper amount. Use of krilium to stabilize clay aggregates is recommended. Kunze et al. consider clay contents in excess of about four per cent undesirable. In lab. tests Lunt reported infiltration rates could be maintained in excess of 1 in. per hour after compaction treatments, even if as much as 7.5 per cent krilium treated clay were present. Probably one of the principal reasons for the unsatisfactory performance of some high sand content greens has been inclusion of too much silt or clay, particularly when these fine fractions are not aggregated.

Kunze Green Mix

Kunze et al. (2) reported success with green mixtures of 8-1-1 or 8 1/2-1/2-1 sand-soil-peat mixtures. Soil used was Houston black clay. Clay contents by weight exceeding about four per cent appeared to be undesirable. This is in reasonably close agreement with other proposals. Kunze et al. also reported best growth of grass when the sand-soil-mix was composed of particles in the range of 1 to .05 mm. It is my opinion that under most conditions slightly finer grades of sand would be more desirable. The data in *Fig.* 1 show that if the subsoil is impermeable, a sand layer 16 to 20 ins. deep will provide 6 to 10 ins. of soil well aerified if sand is in the range of 0.4-0.2. If the sand layer is shallower (subsoil drainage poor, tile drained), sand should be coarser. If subsoil drainage is good, then an increase in the sand fraction from 0.2 – 0.1 mm. would be desirable. The precaution previously urged that sand mix contain not more than about 6 to 10 per cent sand, silt, or unaggregated clay in the range smaller than 0.1 mm, still applies.

Growing Turfgrass the Hard Way

By TOM MASCARO
Pres., West Point Products Corp.

If I were asked what the major turf problems were, I would say that they are problems over which the supt. has little or no control. They are problems created by employees, committees and nature.

Problems created by employees would perhaps take the No. 1 place. There are many cases of improper mowing practices, improper use of equipment and improper use of fertilizers and chemicals. Most all of these are caused by misinformation or lack of competent help.

Take, for instance a golf green: Incorrect mowing can upset the most perfect greens program. Green design is changed by workmen who, rather than follow original contours, will chop straight lines in order to get done faster. Turning of the mowers is done on the green rather than on the collars, creating problems. Poorly adjusted and dull mowers on both greens and fairways create many problems.

Then we have the misuse of fertilizer. Spreaders may be incorrectly calibrated or get out of adjustment. Too much or too little fertilizer may be applied. The misuse of chemicals is quite evident, especially the weed control chemicals. Workmen who are not familiar with the potency of some of these products are left to apply them without regard to their effect on the good grasses.

The supt also is faced with watering problems. Workmen who receive careful instructions suddenly decide they know better than anyone else and apply water their own way. Areas that badly need irrigation sometimes are skipped because the man happens to be just too tired to do it.

The supt. who grows grass the hard way also is faced with players and committees. Each, in turn, has his own theory as to what is best for grass and is constantly badgering the supt. with ideas. Trees are to be planted and trees are to be removed; traps should be dug and traps should be filled; benches should be constructed and benches are an eyesore. If a club has 350 members then the supt. should mow turf at 350 different heights.

Then to top it off, the supt. is faced by acts of nature: things such as floods, lightning, wind storms, skunks and gophers, to name a few. Sometimes it's a wonder to me that about 75 per cent of the supts. don't go over the hill. They'd be justified in doing so.

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Great Lakes Bantam Tourney

The second Great Lakes Invitation Bantam tournament will be held Aug. 27-28 at the Barberton (O.) Brookside CC. Competition for both boys and girls will be held in the 10-12 and 13-15 year age brackets.

Nitrogen Application in Brown Patch Control

By HOUSTON B. COUCH
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Recent work conducted under controlled greenhouse conditions at the Pennsylvania State University has revealed that while large brown patch (Rhizoctonia solani) on Seaside bentgrass responds very readily to different levels of nitrogen fertility, these reactions can be offset by varying additions of phosporous and potassium. Plants grown under low nitrogen fertility, with normal phosphorous and potassium levels, were definitely less susceptible to large brown patch than those grown at normal balanced fertility.

However, when phosphorous and potassium levels were reduced in conjunction with nitrogen, susceptibility to large brown patch increased. High nitrogen, with normal levels of phosphorous and potassium, brought about a definite increase in susceptibility to disease. When phosphorous and potassium were increased concurrently with nitrogen, however, the increased susceptibility to large brown patch was offset.

There was no alteration in disease reaction when plants were grown under balanced nutrition from pH 4.0 to 7.0. However, at pH 8.5, and above, bentgrass plants became less susceptible to disease. Under conditions of high nitrogen, with normal phosphorous levels, the plants were less susceptible to large brown patch at pH 7.0 than at pH 4.0 or 5.6.

Soil moisture in the readily available range (field capacity to permanent wilting percentage) had no influence on disease development.

In Washington State, more red thread disease (Corticium fuciforme) was observed in poorly nourished lawns during the winter of 1956-1957 than in well nourished ones. Field tests, under naturally occurring disease conditions, revealed that an increase in overall fertility gave a decrease in disease severity. Heavy nitrogen applications were particularly beneficial in disease reduction.

South Converting Greens to Fine Leaf Bermuda

By J. R. WATSON, JR.
Chief Agronomist, Toro Mfg. Corp.

Probably the advent of improved strains of fine leaf Bermudagrass has been responsible for more greens renovation than any other single factor during the past few years. Throughout the South greens are being converted from common to fine leaved Bermudagrass. Conversion, in some cases, is accomplished in connection with a rebuilding program; in others it is strictly a renovation process. Conversion to improved strains of Bermuda in the southern areas, and to improved strains of bentgrass in the northern areas is a clear indication of progress.

A. W. Crain, agronomist for Goldthwaite's Texas Toro, reports that during 1957 several Texas clubs converted all or some of their greens to an improved strain of Bermudagrass. Strains used were Tifgreen, Gene Tift and Sunturf. The basic reason for renovation was, in all cases, to replace the existing Bermuda with an improved strain. No soil or design changes were made.

Techniques employed in the renovation program were as follows: The greens were severely verticut, thoroughly aerated and sterilized. A temporary soil sterilent, Vapam, was used. After the proper waiting period, the greens were stolonized, (sprigs spread over the surface), topdressed and fertilized (heavy application of a 10-5-5 organic base fertilizer).

Results: within six weeks (including the two week waiting period) most of the greens were back in play.

Necessity for Fertilizer

Previous work on these and other courses in the area indicated that the procedure outlined was the most desirable method of converting to an improved variety of Bermudagrass. Sprigging into aerator holes, and the use of 4-in. plugs on 12-in. centers had proved to be unsatisfactory under their conditions. Experience had also shown the necessity of adequate fertilization at the time of renovation.

Crain also reported that during the past four years, courses at Weimar, Eagle Lake, Navasota and Yoakum, all located in South Texas, converted from sand to grass greens. Sub-grades were established, stone and pea gravel spread, seedbed prepared, and Gene Tift Bermuda established. The conversion of these courses to grass greens is a milestone of progress worthy of note — there are no courses left with sand greens in the south Texas area.

The work of Carl Anderson, supt. of Woodhill CC in Minneapolis, during late 1956 and 1957 serves to illustrate two other types of renovation.

Anderson's Renovation

The No. 4 green was shaped similar to an inverted saucer — high in the middle and sloping to all sides. The membership wanted the back raised and the green sloped to the front so that shots pitched to the front would hold.

Techniques employed were as follows: The sod was cut from the center of the green back, rolled and stacked. A sandy type topsoil was applied to the depth necessary to acquire the desired grade. The seedbed was then graded and firmed. A 1- to 2-in. layer of compost consisting of 1/2 soil, 1/4 sand and 1/4 peat was spread over the surface and the sod laid. The job was completed in November of 1956. When the season opened in 1957, the green was topdressed and put in play. Carl reports if he were doing the job over he would remove sod from the entire green and rework the soil.

An interesting aside to this project was the removal and utilization of a series of "chocolate drops" as a source of topsoil. These were erected near the green during an earlier period of construction and the surrounding topsoil had been

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Watson-Green Renovation

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used. Their removal reduced specialized maintenance.

A second renovation program undertaken by Anderson was removal of tree roots from seven greens. Because of the severe root infestation, considerable hand watering was required in recent years. These greens were circled with a trench 18 ins. deep adjacent to elm trees, and 24 ins. deep adjacent to white ash trees, roofing paper placed on the smooth outside face and the trenches refilled. A reduction in hand watering is anticipated as a result of this renovation program.

More GCSA convention speeches will appear in the May issue of GOLFDOM.

Connecticut PGA Recap

Connecticut Section of the PGA recently mailed to all its members a pamphlet that recapped the important pro accomplishments, nationwide and sectionwide, for 1957. Highlights of the year from a sectional standpoint were the golf show staged at Norwich and the fact that the Connecticut pros competed for more section tourney prize money than ever before.