on the other hand are not available until natural nitrification of the soil has commenced. By that I mean the soil has to be warmed up to a certain temperature until the soil bacteria which converts fertilizers into an available state for plant food become active. Greenkeepers often make the remark that nitrate of soda will "burn" a green.

This is due to using too heavy an application and not having the nitrate ground fine enough. It should always be pulverized very finely and should always be washed in with the sprinkler. Small application should always be used as better results are got with small applications at regular intervals.

I have introduced a system to our course which was in a very impoverished state when I took it over and I find I get good results.

As early as possible in the spring we apply nitrate of soda to the greens at the rate of 5 lbs. per 1,000 sq. ft. As soon as the weather gets warm and natural nitrification has commenced we give the greens their first top dressing of sifted compost, sulphate of ammonia and bone meal. This is well raked in and lightly rolled. After the green has become established again and fit for play, we use nitrate of soda every two weeks till midsummer. The greens then get another dressing of sifted compost, sulphate of ammonia and bone meal.

The nitrate of soda is then discontinued for the rest of the season. In the early fall the greens are again top dressed with compost mixture and after the ground has frozen and the greens out of play we give them a dressing of clean sharp sand of a fairly rough texture.

Fertilizers on a farm were never intended to take the place of stable manure and on a golf course were never intended to take the place of compost, but to be used in conjunction.

The secret of greenkeeping today may be summed up in a few words—good compost, nitrogen, air, water,
Examine Low Bids for New Course Carefully

During a recent heart-to-heart talk with two golf architects and a fertilizer salesman, one of Golfdom’s staff listened in on one of the problems of those who want to do business with new golf clubs. The architects were complaining that the lowest bid so generally got the job that golf architecture was being handicapped by too much emphasis on skimping vital details in order to land the job.

The fertilizer salesman came to bat with his O. K. on the conclusion. He said, in substance, “Practically every new course needs soil conditioning if it is to get started right. The architect who takes cognizance of this necessity and puts fertilization into his bid runs the risk of getting beaten out. I suggest that the wise architect submit two bids, one with these necessary items like fertilization, properly accounted for, and another for the bare work of design and construction.

“Even if the officials of the new course do come back at the architect and constructor a year or so later and land on him with ‘why in ‘ell didn’t you do this, that and the other thing,’ the course builder then will have a legitimate and complete ‘out’ by reminding the officials of his battle in trying to get them to do the job thoroughly at the start and being ruled against on the matter of cost.”

How and Why Right Ball Marking Pays

Some impressive evidence of the value of proper identification of golf balls, both in its direct benefit to the members and in direct and indirect benefit to the pro, has come to light as a result of some inquiries made by Golfdom.

Charles R. Murray, pro at the Royal Montreal Golf club and at the Gulf Stream Golf club during the winter, is one of the notables in professional golf who gives testimony to the benefits of ball marking in telling of the practice established by him. Charley states:

“I have been boosting the Fulfname marker for the past six years, as I feel it is a great help to the pro, and also to the members of his clubs. It helps the members in this way: it prevents the stealing of golf balls by caddies, as a marked ball is very hard to re-sell. It also does away with the danger of being disqualified by playing the wrong ball. It also keeps down the cost of
Real Saving Shown.
Smith's comment is:
"There is a probability that the pros of the medium size and bigger clubs will immediately class my statements as 'small town' stuff. However, in my own mind, I feel that what has been done here at Alderbrook and what is being done at Westmost at Bandon-by-the-Sea can be done in almost any golf club in the country.
"My assumption on starting a return ball system was that the boys of
modest means would be able to play more and would be bigger boosters for the game if this saving was put into effect. At one time I put a special mark on the ball of one of our members and in one year and a half the ball was returned twenty-six times, still in good condition. This was a seventy-five-cent ball and thus saved $19.50 to the player had it been necessary for him to purchase a new ball each time it was lost.

"The thought will immediately strike the average pro that this will cut down his ball sales, but I do not believe this is true, as it gives him practically 100 per cent of all the ball business of the club, as a golfer who is having his balls returned to him each time he comes to play hesitates to lay down a dozen balls for you to mark which have been bought wholesale.

"A little word of explanation regarding both courses before going into details as to how this is done is that both Alderbrook and Westmost are what would be termed semi-public courses and most of the play is from beach visitors while a few local people play on a yearly basis.

"As to the system that we use, it is hard to say which one rule makes this return ball system a success, but we believe it is because we assume that all men are honest in regard to turning in found balls. Posted near the door of the lounge room with other rules, is a small sign stating that balls must be turned in to the owners. Stamped across the face of our score cards is this: 'Found balls are property of the course and must be turned in to the office. Do not play them.'

"The rules for caddies is that they shall not return any ball to any player unless they are personally acquainted with the player and know positively they are returning him his own ball whether marked or otherwise.

"They receive no caddy fee for any ball marked 'practice ball.' They shall not play any ball unless marked 'practice ball' and must so mark any ball given them by a player before playing it themselves.

"Caddies are allowed to play any time in the morning when the course is not crowded provided they stay within calling distance — a whistle being used for this. We make it a point to give the caddies a little picnic each Monday morning through the busy season — taking them to the beach or nata- torium, as a reward for the work for the past week. Each month I try to arrange some sort of a little prize for the two boys turning in the most balls. This is usually a reconditioned club.

---

**Grass Seed of Known Quality**

**Tested for Purity and Germination**

- South German Bent
- Colonial Bent
- Rhode Island Bent (Washington Green)
- Cocos Bent (Bent Stolons)
- Special Putting Green Bent Formula
- Superfine Fairway Formula (With Bent)
- Chewing's N. Z. Fescue
- Fancy Red Top
- Kentucky Blue

**Prices and Information on Request**

---

**STAUDE GENERAL UTILITY GOLF COURSE TRACTOR**

**ONLY $420 f. o. b.**

The lowest priced and most efficient golf course tractor on the market. Used by over 1000 clubs who find that its light weight and great power make it ideal for golf course maintenance. Write for full information and list of clubs using one or more Staude Tractors.

E. G. STAUDE

MAK-A-TRACTOR CO.

2696 University Ave., St. Paul, Minn.

---

**Please mention GOLFDOM when writing advertisers**
or something of the sort which is very inexpensive. In all probability, some may say this is not enough compensation for the boys. However, we keep two boys on the bench and the rest are allowed to hunt balls and a good caddy will usually bring in from twenty to twenty-five balls when not otherwise employed in caddying.

"When a caddy violates any of the rules he is sternly reproved and given a little time off to think the matter over and if the offense is too serious is prohibited from ever coming on the course again. We have had only about four cases of this kind during the three years of operation of Alderbrook.

"I would say that 60 per cent of our visitors are from the better clubs and play Fulname marked balls. We take these balls from the caddies the same as from our local people and mail them to the owners taking the owner's name and address from our register. We lose the caddy fee and postage on these return balls and charge the same to advertising."

Letters received from visitors who have lost balls returned to them from Alderbrook and Westmont give strong evidence that the mailing of these balls is great advertising.

The marked ball matter is so stressed by Smith on a basis of honest sportsman-ship and an unyielding insistence that the marked ball continues to be the property of its rightful owner, even if someone else did find it, that a near-Arcadian status in this respect prevails at the Smith courses.

---

**Turf Nursery Operating Methods That Pay**

**By HIRAM F. GODWIN**

Greenkeeper, Redford, (Mich.) Country Club

Digest of address at Greenkeepers' National Convention.

Nurseries might be classed as two kinds, one for growing sod or stolons of some particular strain which you have decided on investigation is the one you wish to use. I would suggest putting this on as true a piece of land and free of stones as you can; it will enable you to do a more even job of sod lifting. An experimental nursery can properly be on quite rolling ground, so that it will have slopes at least equal to your greens, as some strains of bent apparently give a true surface when flat but on rolls or slopes they have a tendency to form a nap or grain.

My early trial plots taught me a few things about preparing ground for a nur-

---

**WASHINGTON**

The only strain recommended by any recognized authority—we grow it exclusively. Our improved WASHINGTON—your eventual choice when the facts are known.

*Ask us for the facts*

**BENT GRASS CO.**

**HOOPESTON, ILL.**

---

**FEATHEREDGE Shower Mats**

Meet your need

Featheredge Sponge Rubber Shower mats are non-skid, easy on the feet, sanitary and wear long. They are available in five colors and are truly economical. Many well managed clubs of every size highly endorse the Featheredge mat as ideal for shower bath use.

Big demand due to ideal satisfaction of Featheredge shower bath mats brings a 25% price reduction this year. Featheredge price NOW is 95¢ a square foot.

Write for samples today so you can have Featheredge mats in your showers this year.

**FEATHEREDGE RUBBER CO.**

346 West Huron St.

Chicago, Ill.

---

**ORR Irrigation Co.**

299-301 N. Allen Ave.

Pasadena, Calif.

---

Please mention GOLFDOM when writing advertisers
For Golf Courses, Lawns, Etc.
Utilizes Soluble Plant Food
Simple... Economical
No Adjustments
Dealers Wanted

Free Folder
PLANT FOOD CO.
MONTGOMERY, ALABAMA
FREE + 5lbs PLANT FOOD WITH EACH SPRINKLER

BELL-PLANT-FOOD-SPRINKLER

For Golf Courses, Lawns, Etc.
Utilizes Soluble Plant Food
Simple... Economical
No Adjustments
Dealers Wanted

Free Folder
PLANT FOOD CO.
MONTGOMERY, ALABAMA
FREE + 5lbs PLANT FOOD WITH EACH SPRINKLER

sery. If a well worked piece of ground is not available, do not try to plow and work under old sod; it is surprising how persistent and almost impossible to weed out are the rootstocks of bluegrass, red top, etc., when you are watering and fertilizing a nursery as it should be. Taking old sod off to the depth of two inches will eliminate the bulk of grass roots and weeds. It is not necessary to work the soil up; in fact, I think that leaving the soil firm is better.

It is preferable to start a nursery in the fall. Then by the following fall you are sure of plenty of stolons; but good results are obtainable from spring planting.

Make straight trenches about an inch or two deep. In fall planting, three feet apart; in the spring, two feet. String your stolons along this trench and cover with soil scraped from trench; or, if you want to hurry the growth, cover with compost.

Watering Practice

Right here, it might be well to speak a word of caution about allowing stolons to dry out. Some drying does not necessarily kill, but it slows up germination and affects the vitality materially. Stolons that are kept fresh hardly stop growing; it seems as though the leaves keep right on developing, but on stolons where the leaves are badly wilted or dried, the nodes are slow to root and send out new shoots. It is necessary to plant stolons near the surface and to keep them moist; during hot, dry weather the surface of ground must be kept wet. Anyone who has tried this knows that it is not so easy to do, as to prevent washing, only a small amount of water can be put on at a time.

After nodes root, the grass is more able to take care of itself. If the rooting period is long drawn out, there is just that much more chance for an accident and weeds have a better chance to get started. As soon as rows show, begin to cultivate; use care not to chop off or cover up ends of runners, as it checks the growth.

Another thing that checks growth very materially is allowing seed heads to form. This can best be prevented by using plenty of water and fertilizer. Grass that is forced shows very little tendency to seed. While hoeing or weeding, eliminate any grass that shows a variation from type you have selected; difference of growth shows up readily in rows. If you do not use your nursery rows for stolons the first fall or following spring, I think it pays...
to turn them into a sod bed by mowing and top-dressing, and start new rows for stolons.

A stolon nursery need not be over one-fifth the area you wish to plant with stolons. Usually, after the first year, when sod has formed, some clover, bluegrass and other weeds work in; these weeds, along with the bunchy way sod comes up, require more weeding and top-dressing to produce a good turf than where year old nursery stolons are used.

Before starting any nursery be sure that you can give it regular care. Sod from a neglected nursery is not desirable for a green and experimental plot would give you no real information. Nurseries can be useful or only a matter of expense. Do not try to have a sod bed so large that it would be three or four years before you could use it. Have just about what you will use in a year; it saves a good deal in the cost of mowing, weeding, etc. Keep renewing your nursery where sod has been removed; you will find that after the first crop of sod, the successive plantings are much more free of weeds. Sod is formed quicker and at less expense by broadcasting stolons.

Use of Sod

On an established course, I should always rely on a sod nursery for the material to replace a green. A few years ago I took the mixed sod off of nine greens and replanted by the stolon method. Although I did not begin the work until after September 15th I had them playing on better greens than the old ones by the following May 30th; there was plenty of complaint about being off the regular greens. My greens chairman and his committee certainly stood behind me, but I knew from occasional anxious inquiries as to how the greens were coming that they were recipients of complaints that I never heard about.

Since then I have found that I could grow sod, transfer it to the greens during the latter part of November or the first part of December, and the players generally are not inconvenienced. Some sod, of the same strain as the greens, comes in very handy for patching. Early last spring some vandals; that is, caddies not busy caddying, found a can of oil which they poured on a portion of a green and then set fire to it. On discovery, I immediately had the oiled patches replaced with nur-
GOLF WHEELS

Equip your Fordson tractor with the R. H. Golf Wheels. Better traction; easier steering; stronger and rounder edges to protect the turf.

R. S. HORNER, Geneva, Ohio
(If your dealer cannot supply, write direct)

CLUB MANAGEMENT MADE PROFITABLE

"If a club needs a thing in its business, it is likely to cost more NOT to supply the need than the thing itself would cost!"

To foster healthy club management and profitable growth or expansion, and to prevent failures due to lack of system, this organization renders a complete service to club managers and executives throughout the United States.

Write for Free Details

Business Systems Corporation
210 Transportation Bldg., Los Angeles, Calif.
Specialists and Designers of Accounting Systems for any line of business.

WATERWEEDS removed easily and effectively from any lake, pond or river. Write for particulars. Aschert Bros., 309 East 36th St., Los Angeles, Calif.

USE SNAPPY sport cuts in your club magazine and other literature. Proofs of hundreds, some on golf, and other activities, free to club executives. Wellman, Montvale, N. J.

POSITION WANTED — Greenkeeper with extensive and successful experience with first class clubs in central states, desires eastern position. Best of references. Address M. C. Care of GOLFDOM, 236 North Clark street, Chicago.

POSITION WANTED: Greenkeeper with fourteen years' experience desires position on an eighteen hole course. Best of references. Address: H. H., care of GOLFDOM, 236 N. Clark St., Chicago.

sery sod and after two weeks of growing weather you could not tell where the patches were. Knowing that he can replace destroyed turf immediately relieves a greenkeeper of just that much worry.

Use sod for plugging where large weed patches are removed; although with a good strain of bent on a green, I do not think large patches should be allowed to form. One thing I would not attempt to do; that is, to change the character of turf on a green by plugging with sod.

Here Nursery Pays

A few years ago I heard a greenkeeper say that they had several acres of "Washington" bent sod that they would not use because it turned brown over winter. I did not know what kind of turf he had on his greens; I doubt very much if it was as fine putting and as easily taken care of as the "Washington" would have been.

Now, there was an expense that could have been avoided by the use of an experimental nursery, as a plat 10 feet by 10 feet would have shown that club the characteristics of "Washington" bent.

For testing strains, I should plant in rows. One piece of sod I received from Washington, supposedly of a particular strain, showed on being planted in a row that it was composed of at least five distinct strains.

A nursery is just the place to try out that chemical that you have been told will kill chickweed and not hurt the grass, or that acid that clover doesn't like. If you think that watering in the sunlight hurts the grass and night watering is better, try the two ways on different spots in the nursery.

I would say that if you have never handled bent, it would pay you to try some experimental plots for a couple of years to find out which strain you like and how to take care of it; while a sod bed, properly cared for, offers a means to change permanent greens over into the finest kind of turf, at no inconvenience to the players.

Nitrogen in the Compost Pile

By GUY C. WEST

Supt., Fall River C. C., Fall River, Mass.

The vast amount of compost used on the average golf course today makes it imperative that all compost shall be prepared as efficiently as possible. The nitrogen in the compost pile is very important, and large quantities of it may easily be lost. These facts are often lost sight of by the average builder and user of compost.
Composting produces a concentrated fertilizing material in convenient form for use on the golf course, much more easily handled than fresh manure. The processes which take place in a compost pile are fermentative in nature, and are produced by bacteria. The regulation of these processes and the conservation of the products formed are essential to the economical use of the process.

During the process of fermentation, ammonia is formed, and this is lost easily. Thus the compost pile should be kept wet while fermentation is taking place, as this ammonia is soluble in water. To prevent loss of this through drainage, it is essential that the material used with the manure should be a good absorbent. Many materials are used for this purpose: straw, loam, sod, muck, peat, etc. Of these, peat is the best, absorbing both liquids and gases. It is also a powerful deodorizer, and hence garbage, etc., may be added to the compost, if peat is used, without danger of creating a nuisance. In addition, peat added to a compost pile furnishes a large amount of nitrogen.

While in the raw state the nitrogen compounds in peat are quite unavailable for plant use: the fermentative processes in the compost pile convert a large proportion of them into readily soluble form.

If the source of the manure used can be controlled, a further saving of nitrogen can probably be effected. Where the manure used comes from club stables, the loss of nitrogen can be easily prevented. Where it is bought fresh, it can be treated at once to prevent loss of nitrogen.

The New York Agricultural Experiment Station in a series of experiments have shown that the loss of ammonia from manure may be prevented by adding acid phosphate, gypsum, or peat. Their use, however, does not mean necessarily that they absorb the ammonia, but may mean that they conserve the ammonia by suppressing the organisms which ordinarily cause its volatilization.

Here again then is a use of peat. Great quantities of this substance are found in many sections of the country. Any club which has available a cheap source of supply can use it to advantage for mixing with manure as a preservative wherever possible, and for mixing in compost for use as absorbent and deodorizer, and as a further source of nitrogen.

Testing Acidity

One often wishes to know easily whether the compost used is acid or alkaline. The
Ontario Experiment Station has suggested a simple test for acidity in black soils which can be used for compost. Place a teaspoonful of compost in each of two glasses, fill both with water, place in one a tablespoonful of liquid ammonia. Stir each glass thoroughly with a separate spoon. After standing for an hour, if the water which contains the ammonia is colored quite dark, and the other settles clear, then the soil is acid.

As the nitrogen present in the compost pile is the most important element, and as it may be easily lost in quantity, care should be taken to prevent this loss. A preservative for fresh manure, keeping the compost pile wet while the fermentative processes are taking place, and the addition of absorbents when building the compost, all mean efficiency, and prevention of loss. Care taken in preparing the compost pile will mean more nitrogen in the compost.

Westbury Gives Its Pro Business Boost

"OLD Westbury News," a mimeographed one sheet weekly house-organ of the Westbury Country club on Long Island, is a first class example of a club news sheet that is lively helpful and progressive. Clever sketches illustrate each issue. One of the issues in late April devoted the left-hand column of the first and only page to some publicity for Bill Noon, the club's pro. The yarn follows because it is the sort of copy that a club can put out to give its pro a good "break" in his sales work.

The story appears under the head:

WESTBURY'S "PRO" HAS COMPLETE LINE OF GOLF MATERIALS AT STANDARD PRICES—SEE THEM.

The copy reads:

The only way a storekeeper can keep a complete line of goods is to have a call for those goods.

Our "Pro Shop" is a store, a golf Store, and our "Pro" the storekeeper, "Bill Noon," wants to keep on hand everything that you are likely to want.

But he can't afford to stock up with golf materials unless he tinkles the cash register occasionally.

"Bill" will treat you right and sell you right. He has everything from matched clubs to garter tee garages.

One of the first customers that strolled into Bill Noon's emporium after his new stock arrived, was President Vincent X. McGuire.