
Turfgrass Questions Answered by Grau

INTEREST in grass and sod nurseries is on the increase. The need for nurseries is greater than ever before. It is encouraging to find chmn. who encourage the supt. to provide good nursery areas for the club. A good nursery represents inexpensive insurance. It keeps club personnel ahead of the crowd on new grasses, new equipment and the effect a new chemical has on grasses.

Area: Plant at least one full size putting green in two or more of the most promising grasses for your area. Plant at least one full size tee in tough grasses adapted to your area. Don't be afraid to try a new grass even though someone says it may not work. If you have not had first hand experience with it you can't honestly say whether or not it will succeed. But do not put water-loving grass right next to grass that will die if it gets too much water. Keep complete control over the amount of water applied.

Soil preparation: Well drained soil is essential along with lime as needed to bring pH to about 6.5 to 7.0. Complete fertilizer to supply about 2 pounds each, N, P, K - to 1,000 sq. ft. (equivalent to 20 pounds 10-10-10). Seedbed should be firm but capable of being loosened without becoming cloddy. Preplanting treatment is a must. You have a choice of Cyanamid or Dowfume, or perhaps one of the newer ones like Vapam or liquid Cyanamid. Freedom from weeds and contaminating grasses can reduce expenses and increase confidence in results.

Solid sod or rows of stolons (or sprigs): We suggest both so as to gain the fullest measure of information from trials. One sq. ft. of full bodied sod or nursery row stolons, pulled apart carefully by hand, can plant about 100 running (linear) ft. of nursery row, laying the sprigs or stolons about end-to-end. One bu. of sprigs or stolons should plant from 500 to 1,000 linear ft. of row, depending upon several

If you've got a question you want Dr. Fred V. Grau to help you answer in this department, please address it to Grau Q&A, Golfdom, 407 S. Dearborn, Chicago 5, Ill.

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factors such as "plumpness" of the bu., care in planting, condition of material. One bu. should plant from 100 to 500 sq. ft. when material is pulled apart and scattered uniformly over the seed bed for solid sod such as in planting a stolon bent green. Fast growing, vigorous grasses need smaller quantities of planting material.

Management: No two grasses thrive under exactly the same management. Make an honest attempt to learn and study the MR (management requirement) of each grass and to provide what is most likely to bring out the best in the grass.

Records: Don't let detailed notes rob the nursery project of the fun that's in it. At the same time, record enough information so that you will have an authentic background. Performance counts! During a season, you probably won't need many notes to know that one grass is easier to handle than another. When the conference chmn. asks you to present a paper, you'll be very glad to have notes ready.

Publicity: Let the rest of the club know about the nursery. It belongs to them. Encourage them to walk over the plots and to learn the grasses from the signs you put up.

Some nurseries are five acres in extent. Some of the most interesting nurseries are only a few hundred sq. ft. in size. A high level of maintenance is essential. Poorly kept plots are worse than none at all.

This may sound strange but I offer it at the risk of offending a few. Warm-season grasses (Bermudas, Zoysias) should be planted at the beginning of or during hot weather. Cool-season grasses are best planted in spring or fall. Fertilizers for maintenance should be applied during the active growing period of the grass and not during a dormant period. This is elementary but significant for planting of new grass for the first time.

* * * *

Q. Will you please explain thoroughly what you mean by vertical mowing? (Mich.)

A. Reel-type and rotary mowers are designed to cut on a horizontal plane (parallel to the

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soil surface). Grass that stands erect is cut off. Creeping grass and many other turfgrasses grow in such a way that many of their stems and leaves do not stand upright but are parallel to the ground. At first they develop what we know as "grain." Reel and rotary mowers can not cut these prostrate stems. They accumulate, causing the mower to continually ride higher on the developing thatch and mat.

Vertical mowers are built so that cutting blades revolve in a perpendicular (vertical or upright) plane — like a rolling wheel. Adjusting the height of the spinning blades in relation to the turf, they can be made to cut the flat blades and stems of grass at the surface, thus removing, at the source, much of the trouble (grain, thatch, mat, and accompanying trouble from diseases which flourish in the "moist incubator" of matted grass) that we find with creeping bent greens. Vertical mowing of greens need not be done more often than once a week or once every two weeks as compared to daily mowing with the greensmower. Use of the vertical mower actually improves the putting surface by removing unseen irregularities which destroy accuracy in putting. Development of vertical mowing ranks high on the list of accomplishments in turfgrass maintenance.

Q. Please explain the apparent difference in recommendations between 50 lbs. to 1,000 sq. ft. of Aero Cyanamide and 13 lbs. of calcium-cyanamide per cu. yd. of top dressing. Are these two different names for the same product?

A. Sometimes we become careless in use of familiar terms. The correct name of the product to which you refer is Aero Cyanamid Granular. The chemical symbol is CaCN_2 — calcium cyanamid. The rate of 50 lbs. (sometimes 75 lbs.) to 1,000 sq. ft. is recommended for treating the surface of seed beds prior to planting. The rate of 13 lbs. to a cu. yd. is recommended for killing weed seeds in compost or topdressing prior to use. Pamphlets on the best ways to use this material may be obtained from American Cyanamid Co., 30 Rockefeller Plaza, New York, N. Y.

Q. A large percentage of the grass on the greens at our course is composed of Poa Annua and Seaside bentgrass. Will the application of 10 lbs. of lead arsenate to 1,000 sq. ft. prevent germination of Seaside bent seed, both proposed to be used this fall on the greens? (N.J.)

A. Yes, the germination of bent seed will be affected and retarded if 10 lbs. of arsenate of lead are used at the time of seeding the bent. I assume that your intention probably is to retard germination of the Poa.

Seaside bent is not one of the best putting grasses in your area. I'm sure that if you stay with bent, Cohansy (C-7) will prove much more satisfactory. If you want a grass that will give maximum satisfaction throughout the summer with minimum care and will allow Poa to come in to give you winter color, you might devote some of your test nursery area

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to one of the improved Bermuda grasses. Two that I would suggest for you to try side by side are Tifgreen and Ugandagrass. Both are fine in texture, the latter like bent. Ugandagrass is proven winter hardy in New York and central Pennsylvania. Tifgreen is undergoing hardiness tests.

Q. Can you advise as to one or two good sources of information on Bermuda grasses? We want books giving details on planting, care, fertilizing, disease control, etc. (Maryland)

A. The best reference we know of on the subject is the 1948 U.S.D.A. Yearbook GRASS. There is no book on the subject that we know of. A good source of current information is the U.S.D.A. Plant Industry Station, Beltsville, Md. Another source of current data is Georgia Coastal Plain Exp. Station, Tifton, Ga. This department of Golfdom can help you with specific problems. The current issue of "Southern California Turfgrass Culture" carries an "Evaluation of Bermuda Grasses." This is available from University of California, Dept. of Horticulture, Los Angeles 14, Calif.

Q. The pH on my greens is up around 7.5 to 7.6. I'm afraid it is getting too high. What can I do to lower it? (Ill.)

A. My advice is to do nothing about your pH — just let the grass enjoy it. Bentgrass will thrive over a very wide range of pH values — even up to pH 8.5.

Light, periodic applications of sulfate of ammonia will tend to hold the reaction steady

or lower it slightly. I favor an acid-forming fertilizer such as sulfate when soil pH is high, not so much to change the reaction but for beneficial effects from the sulfur in the fertilizer.

Q. Please examine the samples of soil and sand I am sending you and give me your opinion of the best mixture for topdressing my bent greens. (Pa.)

The soil appears to be clay loam with good physical structure. The sand is graded from coarse to fine but most of it is what I would call coarse. This is good. With a good grade of peat or well decomposed sawdust on hand, I would suggest this mixture:

Sand	7 parts by volume
Clay loam	2 parts by volume
Organic Material	1 part by volume

I'm sure that you will be much better satisfied with this mixture if you can make it up a year ahead, treat it for weed seeds (sterilize with cyanamid or methyl bromide), and let it develop a "bond" between particles. This will give the micro-organisms a chance to operate and develop some aggregates before you use it. It will be best if you continue to use the same mixture year after year.

Q. I am considering introducing Certified Meyer (Z-52) Zoysia into my fairways. We have recently installed a complete fairway watering system on 9 old fairways (carpet grass and Bermuda) and 9 new fairways which are seeded with Bermuda. I want your advice regard-

ing Zoysia for fairways. I intend to start a small nursery, then plug and sprig small portions of the fairways from the nursery. (La.)

A. Meyer Zoysia does not appear to me to be one of the better fairway grasses because of a tendency to become a "deep cushion." This quality may be wonderful in a lawn but, if allowed to develop it would give golfers an insecure stance and footing. A heavy cushion of turf makes tiresome walking. Zoysia clippings decay slowly and build up an undesirable mat.

By all means start a small nursery. When you have solid turf, have your members play from it and walk on it. But remember a few steps on a small plot is not the same as walking several miles.

Had you planned to start a similar nursery with improved Bermuda grasses? It should be very worthwhile. Renovation will be less costly and much faster with the right Bermuda.

Q. What are other reasons in addition to disease control in favor of early morning watering over night watering? The only standard I have to go by for swishing greens is when the temp. is above 88-92 degs., there is high humidity, and the green feels hot to touch. Are there more things to look for? How often should a green be swished during hot weather? 10 minutes per time is about standard isn't it? What are other factors to consider in watering beside puddling and runoff? What are the symp-



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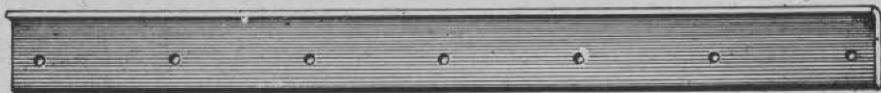
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toms of different types of wilt? (Ky.)

A. Early morning watering helps grass to dry more quickly for pleasurable play and for machinery operation. Disease reduction still is the big reason. There is no standard for "swishing" (syndring, showering-off). This largely is a case of judgment and constant watching. The cold water cools the grass, brings dissolved oxygen to the suffocating grass. Hot water contains very little oxygen.

The differences between "wet wilt" and "dry wilt" are subtle and difficult to describe. Dry wilt occurs on hard soil that lacks moisture. Wet wilt might look the same (footprinting) but the soil is wet, may even be "squishy." In the former it is the water that corrects the wilt; in the latter it is the oxygen in the water that once more permits the wilting grass to absorb some of the excess water.

Q. I believe it is generally agreed that it is a poor practice to feed bent greens with nitrogen in warm humid weather, or when we know such weather is approaching. If this is so, then wouldn't a spring application of one of the urea-formaldehyde fertilizers, (such as Uramite) in sufficient quantity to last all sea-

son be injurious to the extent that you would lose control of nitrogen feeding in hot weather? I realize this form of nitrogen is released gradually all season, but in warm, humid weather there would be no way to stop nitrogen release, thus increasing the chance of more rapid spread of disease. (Wis.)

A. It does not appear that the U-F fertilizers (Uramite, for example) release nitrogen "explosively" when hot weather comes as we have observed at times with natural organics under conditions of high heat and humidity. Release rate appears to be nearly constant and is not dependent upon temperature and humidity. Research data do not indicate any loss of control of nitrogen or any additional disease with the season's supply of N being applied at one time in the spring. It helps, naturally, to have a good sturdy strain of grass to start with. To date, it appears that we can say with assurance that the U-F fertilizers tested thus far are equal to the best organics in performance and N release is more constant.

Q. With winds of 35-45 m.p.h. I have trouble keeping sand in my traps in spite of steeply
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Turfgrass Questions

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banking them to the limit for "good golf's sake." I use sand finer than "sharp" or concrete sand. I do this out of consideration for my greens mowers which wear very fast with coarse sand. What grade or density sand do you recommend to meet these conditions?

A. Your's is a difficult problem. It is useless to go to a coarse sand because of your mowers, and for player reasons. Pebbles on the green do not help the ball to roll true.

Have you considered planting a few clumps of bunch grasses in or near the traps to break the force of the wind? I have seen this done to good advantage. Broom sedge (*Andropogon virginicus*) is a native and grows well under poverty conditions. Another grass is Indian grass (*Sorghastrum nutans*) also a native.

Groups of bunch grasses can be very attractive, break the monotony of an expanse of sand and reduce wind erosion. Occasionally, a ball will come to rest in or near a clump which may not please the player but if you explain your problem to the membership I feel reasonably certain members will understand and will go along with you.

Q. At what height should fairways be cut in Apr.-June, and July-Sept.? (Ky)

A. Height of cut on fairways will vary slightly according to the kind(s) of grass present. For creeping bent and Bermuda — 1/2 in.; for bluegrass fescue — 3/8 to 1 1/4 in.

These suggested heights mean little because

the type of mower used will affect the way the grass is cut, even when all are set the same. Well fed grass will tolerate closer mowing than starved turf. Terrain will affect height if cut. Longer grass often is demanded on steeply sloping fairways to reduce roll of ball. Generally speaking, the height of cut should be the same the year around.

Q. We have three greens which are very hard, full of clay, and fine sand. Is there any way to repair them without rebuilding? (Ky.)

A. It is a long slow process to repair and change soil in a green without rebuilding, but it can be done. It will take regular aerifying and the use of a suitable topdressing material used generously and frequently. This does not mean that the green will be as satisfactory as though it had been rebuilt. It keeps it in play and minimizes annoyance of temporary greens. A change of grass during the process might be in order. This should be carefully considered.

Q. October, 1955, Golfdom stated that 2-4-D will weaken bent grass. For what types of weeds and when can 2-4-D be used on greens? What is a good herbicide for crowfoot? Craig Herbicide #1 for crowfoot and crabgrass has been suggested. What is its potential? (Ky.)

A. 2,4-D has little or no place on greens except under very unusual circumstances. From what I have seen my advice is to use disodium methyl arsonate for crowfoot and crabgrass on greens. DSMA has good potential. Phenyl mercury plus 2,4-D has been used but it must be handled with care and precision. Pre-emergence chemicals are not recommended on greens.