
Turfgrass Questions Answered by Grau

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.

COMES now the season when golf is the heaviest, temperatures are highest, humidity possibly greatest, diseases the "spreadingest" — when grasses and supts. get their most severe test. This is the period during which better grasses, adapted to severe summer weather, provide nearly care-free maintenance. Quite the opposite are weak, poorly-adapted grasses that require 24-hour days (and sleepless nights) on the part of supts. to try to "hold the turf".

**Poa Annua —
Friend
or
Foe**

For the moment, let us consider *Poa annua*. *Poa* is either a blessing or a pesky weed depending upon where you are and what you have under it to take over when the *Poa* leaves. Florida threatens to banish forever anyone who sends *Poa* into the state knowingly or otherwise. In parts of Canada and some of our northern states there wouldn't be much golf if it were not for the rugged character of *Poa*. Many are in between depending upon a number of factors.

Poa has been receiving well-deserved attention as a cool-season companion to warm-season grasses. Evidence is growing as to the desirability of the combination when the turf is managed correctly! The answers to correct management have not been written as yet, but experience has given a lot of good leads.

First of all, we need a strong perennial summer grass (warm-season grass) under *Poa*. This may be a bentgrass or a strain of bermuda. Among the bents, Washington strain is a good hot-weather grass, yielding gracefully to *Poa* during cool seasons. In general, evaluation of bents has been given little or no prominence in research studies. In practical use this is a major consideration. Whether base grass is bent or bermuda, it is important that it be sturdy, disease-resistant and tolerant of being cov-

ered during its dormant period. Since *poa* fades and "disappears", sometimes "explosively", it is equally important that base grass thrives and be ready to assume complete charge of the situation. Some progress has been made in this direction.

"How to hold what we've got" is a real need because only a few have achieved care-free maintenance. The answer lies in doing the right things at the right times — and the book hasn't been written that will tell you what and when. It is a case of understanding principles of plant growth, water and soil, knowing why certain things happen, and living with your problems.

It seems to me that all the successful hot-weather practices — syringing, showering-off, spiking, etc.—accomplish one thing in common. They supply life-giving oxygen to suffocating root systems. As temperatures soar, water in the soil surface gets hot and then hotter. Hot water contains little oxygen. This is the time when growth rates, and thus oxygen requirements, are highest. Heavy traffic and watering seal the surfaces and reduce air movement into and out of the root zone. Spiking, a great invention, helps to achieve air circulation. Sprinkling refreshes the grass by bringing needed oxygen. Cold water contains much more dissolved oxygen than hot water. The grass actually may have an excess of water and yet be in a state of wilt (wet wilt). Additional water is not needed, but its oxygen is vitally important.

We deprecate the need for summer mid-day syringing, yet we know that it's absolutely necessary to save grass during severe spells of weather. We believe that a better day is coming as we learn how to use the better strains of grass and improved techniques of soil and water management in relation to soil physics.

Q—We are experiencing our first real siege of *Poa Annua* in some of our greens, especially ones on which we had some brown patch last season. What can we do to check or stop this infestation? We had the good fortune last

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year of being one of two clubs in the city to withstand the summer with almost perfect greens, but we did use about twice as much fungicide as in other years. Could this have caused our greens to be weak and subject to Poa Annua? I attribute a lot of our trouble to the cool, wet spring. Please answer at once so we can check or stop this siege of Poa Annua. (O.)

A—It is my fervent hope that research workers soon will learn how Poa Annua can be eliminated. For discussion on Poa, we refer you to this department in GOLFDOM's past issues. See also USGA Journal, July 1951 page 27. Read also Turfgrass Conference Proceedings at Purdue where Poa was thoroughly discussed. There is no one answer to Poa control but if it were my course, I would learn how to use sodium arsenite in a sprayer and I would do a lot of spraying.

Regardless of the reasons for grass being weakened, Poa invasion is a natural result where large quantities of water are used. Diseases and insects rate high for giving Poa a foothold. Compaction helps also. Weak strains of grass lack aggressiveness to keep Poa out. You did not say what kind of bent you started with.

Arsenic (lead arsenate or sodium arsenite) seems to be of great value in fighting Poa. Dr. Wm. Daniel at Purdue has done some classic work on the problem and his papers are very much worth serious study.

Cool wet weather is conducive to growth of Poa. Unless we have a desirable grass that grows better than Poa under these conditions maybe we should not expect too much. Where Poa is out of control you would do well to have a turfgrass specialist from your State University give you a hand.

Q—Poa annua is our No. 1 problem. Is there any chemical formula available for elimination of this pest in bentgrass greens? (Ky.)

A—There is no simple formula, chemical or otherwise, for eliminating Poa annua from greens. It is considered a pest in Florida, California, New England and other places, too. Keeping greens free of this pest probably is the high mark of the art and science of green-keeping. The best chemicals to keep Poa annua in check are arsenate of lead and sodium arsenite. Both may be applied as a spray solution, or dry mixed with topdressing. Lead arsenate usually is used at 5-lbs. to 1,000 sq. ft. starting in early spring and applied monthly except in hot weather. It is more effective when soil phosphorus is low.

Sodium arsenite is much more potent and requires more skill because it is essentially a contact herbicide, affecting leaves and seed stalks. It usually is applied ½-oz. to 1,000 sq. ft. as a spray in 2 or 3 gals. of water; or 1-oz. to 1,000 sq. ft. in the dry form mixed with sand or topdressing. Bentgrasses may get a slight tipburn but they quickly recover, generally after the new mowing. Repeat sodium

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arsenite treatments every 10 days to two weeks except in hot weather. Try it out in the nursery first to get the "feel" of sodium arsenite. Don't look for quick spectacular results because they will be gradual.

As we have said before, you can help give Poa annua the "bum's rush" by introducing more vigorous grasses, by keeping greens on the dry side, and by applying principles of aerating and vertical mowing.

Q—What is your opinion of the new Uramite fertilizer? Would you recommend it? If so, at what rate? (Wisc.)

A—Experimental evidence to date shows that Uramite produces results comparable to those developed from natural organics such as Mil-organic, Agrinite and seed meals. We do not yet have evidence that could warrant a statement that it is better than natural organics. Slow steady release of nitrogen is one feature —non-burning characteristics another. To offset this, natural organics carry phosphorus, potash and certain trace or minor elements. Uramite contains nitrogen only.

In some cases the lasting effect is only half as great as claimed, probably affected by compact soil, lack of aeration, excess water, and other factors. Some users attempt to correct by doubling the recommended quantity.

My last recommendation for any fertilizer is to follow manufacturer's directions. We have observed good results when fertilizer is applied following aeration.

Q—We want your advice on using sewage sludge on golf greens, such as in topdressing mixture; using it straight as topdressing; and using it in mixture in building a new green in place of peat. We may try this. (Ill.)

A—Raw or partially digested sewage sludge is not recommended to be used straight as topdressing on greens. I have seen bad burns on bentgrass from using sludge straight. If you were to spread the sludge out on a soil bed, disc it into the soil and let it compost for a year, you'd find it an excellent addition to the topdressing mixture. It can be used this way to replace part of the peat.

Sludge decomposes so rapidly that it would not be wise to depend upon this source alone for organic matter. In building a new green it would be very beneficial if sludge were used as composted material, disced and blended a year in advance into the topsoil that is to be used for the top 8-10 ins. on the green. A generous application of complete fertilizer high in P & K is recommended to be added to the soil bed in which the sludge is to be composted. Properly used, sludge can be a good material for supplementing the topdressing used on greens.

Q—Why is it better to apply all-organic fertilizer in the fall instead of the spring? (N. Y.)

A—Your query is reminiscent of the trick question asked by the prosecuting attorney—"Have you stopped beating your wife?" Any way you answer you are wrong.

Where did you get the idea that applying all

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Q—The organic fertilizer in the fall is best? I am not aware of any data to support that procedure. We have seen many good results from heavy late fall application, especially in the way grass starts strong early in the spring and recovers from injuries.

Regular applications of organics right through the season have become routine procedure. It's possible the practice to which you refer may have been done on some basis with which I'm not familiar. Further discussion would be most helpful, but you neglected to sign your letter and gave no address.

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

A—The soil appears to be dry 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 am 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 the particles. This will give the micro-organisms a chance to oper-

ate and develop some aggregates before you use it. It will be best if you continue to use the same mixture year after year.

Q—Would you give us your solution to hard greens? Our greens will not hold a shot unless they have been soaked with water. It is the opinion of several members that an aerifier would solve our problem. (Ala.)

A—Your members who believe in aerifying are to be commended. It will help in a large way but it is not an end in itself. You need also to grow roots so as to have a cushion of turf which will hold a shot. To grow grass it takes regular adequate feeding and sensible watering. Aerifying helps in several ways; it loosens soil mechanically, thus making it softer and better able to hold a shot without being soaking wet all the time; it lets air, water and fertilizer deep into the root zone, thus helping to grow roots and well cushioned turf.

If you would send me a sample of the soil in your greens I could give you a more accurate answer on how and when to aerify and what to add after aerifying. Please tell me something of your fertilizing program and the kind of grass you have on the greens. You should know by now that I am a staunch advocate of using the right grass and feeding it adequately.

I might add that the excess moisture in the soil, designed to help soften the soil to hold a shot, actually works just the other way, making the soil harder. Grass roots need lots

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of air. Without air (drowned) they suffocate and can absorb neither water nor fertilizer. Not only do the roots drown but they starve and die of thirst.

My suggestion is to aerify in four directions to get thorough cultivation. Revamp your fertilizer and water program and repeat the four-way aerifying each month until you can let the greens go a week in dry weather with no irrigation and have them hold a shot perfectly. We can go into details when I see some of the records of your operations. A soil analysis report also will help.

Q—Do you think our club should finance trips to turf conferences for its supt.? (Va.)

A—The best answer I can give is a direct quote from the Mid-Atlantic News Letter for May, 1956:

"Any supt. who misses these conferences is not doing justice to his club; and any club that does not send its supt. to the conference is not doing the right thing in the best interests of its members!"

Q—We have inherited a large supply of dinitro-sec-butyl-phenyl (dinitro-ortho-secondary-butyl-phenyl) (DNSOBD) 6.9 per cent petroleum oil, 79.7 per cent, remainder, inert. What is the recommended dosage and usage?

A—The answer to this one comes from John Gallagher, American Chemical Paint Co., Ambler, Pa.:

This combination can be used safely only where complete kill of all vegetation is de-

sired, such as driveways, sand traps, etc. There would be no selectivity. It is recommended that it be used just as it comes from the can the same as you would use an oil spray.

Byes to Low Qualifiers

Orville Chapin, pro at Ft. Wayne (Ind.) CC, remarks that the customary method of allotting byes isn't logical — and there are many golfers who will agree with him and approve a change.

Chapin says:

"A qualifying round is a process of elimination; the weaker players are thrown out. My idea of the present method is that the better player is at a distinct disadvantage. For instance in a flight of 32 where only 28 players compete the four lowest qualifiers have to play two rounds to get to the quarter finals whereas the 13th, 14th, 15th, and 16th qualifiers only have to play one round to enter the quarter finals. In such a case four of the higher qualifiers have an advantage because of inferior play in qualifying.

"My idea is that any byes should be distributed to the lowest qualifiers. That is, if there should be four byes they should be allocated to the four lowest qualifiers."