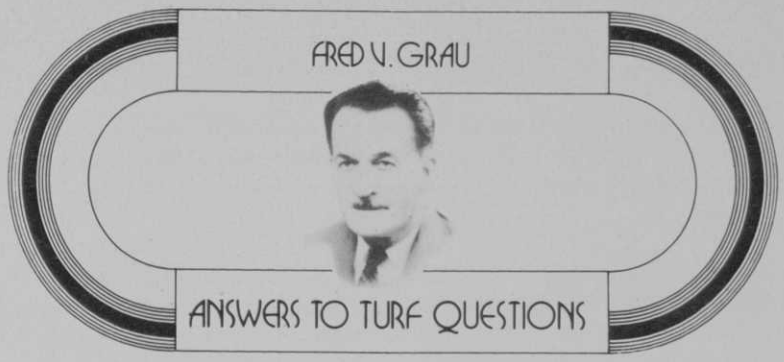

Random thoughts

For some unknown reason I could discover no dominant theme for the editorial in this issue. Recent events, conferences, field days and visits have covered so many facets of turf that it seems best to record thoughts as they have come to my mind.

At the field days that I attended there seemed to be a drop in attendance among golf course superintendents. One factor was the weather which kept many at home. *Pythium* was rampant in many areas and *Poa* was dying by the yard. There was a scarcity of golf course architects at field days. It may be that they are depending on their consulting agronomists to bring the technical information back to them—as needed. Perhaps they are all so busy building new courses that field days are difficult to fit into their schedules. One superintendent suggested that their appearance would do much to build confidence among the golf course superintendents. I sense that they miss the chance to chat with the architects and to get "gripes" off their collective chests.

Sod field days are growing in popularity. This is a burgeoning segment of the turfgrass industry that merits a great deal of attention. Sod growers use only the purest Certified seed to meet rigorous standards, thus effectively marrying seed and sod. Not to be left out are those sod types that are produced vegetatively. Hopefully sod producers might come up with a self-imposed assessment to build a fund that could be devoted to research and education. The public would support a surcharge that would insure continued improvement of sod products.

Many young people in the turfgrass field profess to be deeply interested in the historical sketches that I've been invited to present at various functions. Hopefully I will have the time to develop the theme, A Sense of History, but I may need encouragement.

Cutbacks in money for turf at colleges and universities seem to be the order of the day in spite of the growing economic importance of turf. This puts pressure on turfgrass councils and foundations to generate financial support or to see the plow put to at least a part of the experimental plots. This is a point in time when we need all the technical help we can get to learn how to produce top notch turf with some of our most reliable turfgrass protectants denied us. Then, too, with evidence mounting in favor of real turf and with the four-day work week staring us in the face, we must do a better job in amending soils and in selecting and managing our grasses. The public is learning how good *good* turf can be and the turfgrass managers will have to produce results.

Communications among the various components of the turfgrass industry continue to improve. Newsletters have made tremendous strides in effectiveness, in informing readers, in composition and in format. Also, I believe that there is a complete exchange among the various publications. The public relations angle is much better than it used to be, thanks to some very astute writers and to some understanding newspapers and magazines. But as one writer put it, "If you have something that you want me to say in my paper get it to me. I'm not coming to you to get it!"

Leadership is a quality that we are seeking constantly. We see aggressive leadership developing particularly in graduates from university courses where the student is taught how to think. We are thankful for the guidance and counsel of those who have had rich experiences and who are ready and willing to share their wealth.

In looking back over my 44 years

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of deep personal involvement in almost every facet of turfgrass, all I can say is, "We've come a long, long way!" The finest development of all is the host of friends I've made around the globe—all of whom are dedicated to developing better turf.

Q—*The soil-less mixture for our new greens is 80 per cent sand, 20 per cent peat. The pH value is 7.6. In preparing to seed the greens to Penncross shouldn't we omit limestone altogether? We don't want to see the pH get too high. (Wisconsin)*

A—I would reserve judgement on the decision to use (or not to use) limestone in the seedbed until "soil" tests are completed for Ca and Mg levels. The buffering capacity (ability to resist change due to added materials) of sand-peat mixtures tends to be low. We need Ca and Mg for good nutrition. With low buffering capacity rather large changes in soil pH can be produced with rather small additions of materials; pH values do not tell the whole story as related to the need for limestone. Do you know if the sand you used carries calcium?

Q—*Our club has an application blank from the Pennsylvania Turfgrass Council wherein golf clubs are invited to join as Sustaining Members at $100 a year. Would you consider this to be a good investment? What might we expect in return for our membership? Isn't this something new? (Pennsylvania)*

A—Yes this is something new, and I consider it a good investment. In return for $100 a year, each Sustaining Member club will have the privilege of: 1) receiving periodic news releases in the Keynoter, the official publication of the P.T.C.; 2) supporting scholarships at Penn State wherein top-notch students are rewarded for their scholastic proficiency in their efforts to become turfgrass managers; 3) compensating in part for years of free advice and service from the staff at Penn State; 4) insuring the continuance of high-quality programs of research, teaching and extension and the training of replacement golf course superintendents and 5) making possible another authentic Turfgrass Survey to assess the true scope and value of the turfgrass industry.

These are a few of the important elements that can be accomplished with money from a one-year Sustaining Membership in P.T.C. Already 15 commercial firms have indicated their support of the goals by joining the council. Several hundred golf course superintendents have dug into their pockets for individual memberships to support its progress.

Q—*How can I increase the cold tolerance of my bermudagrass turf? I have mostly Tifgreen on the greens and tees and Tifway on the fairways. (Alabama)*

A—Without getting into specific recommendations on quantities, there have been some excellent studies on N-P-K ratios with respect to cold tolerance and killing of grass. A 4-1-5 ratio resulted in increased winter hardiness in Texas. High levels of P reduced cold hardiness as did high levels of N. Potash seems to hold the key to improving cold tolerance; N and K in equal quantities, with low P, seems to be a sound policy.

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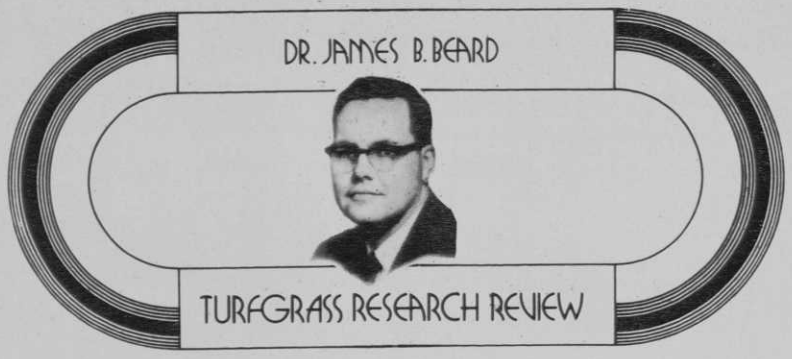

Nematode control

Developments in nematode control. *G.C. Smart Jr. 1970. Proceedings of the Florida Turfgrass Management Conference. 18:91-93. (from the Department of Entomology and Nematology, University of Florida, Gainsville, Fla. 32603).*

The author reports that when the commonly used nematicides are applied there is a temporary recovery from nematode injury followed by a subsequent deterioration caused by additional nematode activity. The author suggests that when the initially high population of sting nematodes is controlled, the lance nematode population builds up, causing serious injury. The lance nematode does not thrive in the presence of the sting nematode, however. Evidently, the commonly used nematicides are not effective in controlling the lance nematodes.

Consequently, the authors initiated investigations concerning some newer nematicides for control of the lance nematode on bermudagrass turfs. Two experiments were conducted on Ormond bermudagrass turfs in two different locations. Application dates at each of two locations were May 5 and May 27 with four replications of each nematicide in both studies. Subsequently, lance nematode counts were made in June, July, August and September.

The nematicides and application rates per acre included in the first study were Nemacur (15 pounds), Tirpate (15 pounds), Furadan (20 pounds), Sarolex (30 pounds) and DuPont 1410 (12 pounds). Only Nemacur at eight and 16 pounds per acre and Tirpate at six and eight pounds per acre were included in the second study initiated May 27.

The results of these studies reveal that Nemacur provides good control of the lance nematode along with excellent control of the sting and ring nematodes under the conditions of this study. Tirpate was also promising, but its duration of effective control was somewhat shorter than Nemacur. The maximun nematode population reduction occurred two months after application.

Comments: The sting nematode *(Belonolaimus* spp.), referred to in the article, has been proven to be a parasitic nematode only on the warm season species, including bermudagrass, St. Augustinegrass and centipedegrass. It is an external parasite causing root lesions and stunting of the root system along with chlorotic, stunted shoots.

The author of the article indicates that four nematicides are effective in controlling the sting nematode under Florida conditions. They are (a) DBCP (1, 2-dibromo-3-chloroprophane), (b) Sarolex (0, 0-diethyl 0-(2-isopropyl-4-methyl-6-pyrimidinyl) posophorothioate), (c) Dasanit (0, 0-diethyl 0-p-(methyl-sulfinyl) phenyl phosphorothioate and (d) Mocap (0-ethyl S,S-dipropyl phosphorodithioate).

The lance nematode (*Hoplolaimus* ssp.) has been proven to be a parasitic nematode only on bermudagrass species. It causes browning and swelling of the roots and restricted shoot growth. The two nematicides showing the best potential for controlling the lance nematode on bermudagrass in Florida are identified by the following chemical names: (a) Nemacur (Ethyl 4-(methylthio)-m-toly isopropylphosphoramidate) and (b) Tirpate (2,4-dimethyl-2-formyl-1, 3-dithiolane oxime N-methylcarbamate).

When attempting to control nematode populations through the use of nematicides, remember that the available materials provide a substantial reduction in the population of parasitic nematodes, but that eradication is seldom achieved. Thus, re-

(Continued on page 26)

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peat applications are usually necessary whenever injurious effects from the parasitic nematodes occur. Where nematode problems persist, a minimum of one nematicide application per year is usually required.

***Typhula* snow mold control.** *J.M. Vargas Jr. and J.B. Beard. 1970. Michigan Turfgrass Report. pp.4-6. (from the Department of Botany and Plant Pathology, Michigan State University, East Lansing, Mich. 48823).*

The paper involves a progress report covering (a) the third year of a fungicide evaluation study for the control of *Typhula* snow mold and (b) the first year of a study to determine the optimum time of application for snow mold fungicides. The plot area was located on a Penncross creeping bentgrass turf maintained at a cutting height of 0.5 inch with clippings returned. The site was located in northern Michigan where the turf was covered with deep snow from mid-November through mid-April. Consequently a very uniform *Typhula* snow mold infestation was assured. Materials and rates per 1,000 square feet included in the study were Cadmium (three and five ounces), Calo-clor (four ounces), Calo-gran (eight pounds), Demosan granular (2.5 and 3.75 pounds), Panogen (three ounces), PMAS (two ounces), T.B.Z. (four ounces) and Tersan O.M. (eight ounces).

The third year's results of the fungicide evaluations for *Typhula* snow mold control revealed that Calogran, Demosan and Calo-clor continue to rank superior in terms of *Typhula* snow mold control. Most of the other materials failed to give satisfactory control under the severe *Typhula* snow mold infestations occurring at this experimental site during the past three years.

In the time of application study several of the better *Typhula* blight fungicides were applied on three dates: September 15, October 15 and November 7. Results from the first year of this study reveal that equally effective control was achieved from the October 15 application in comparison to the November 7 application date, which is most commonly practiced. The authors indicate that the

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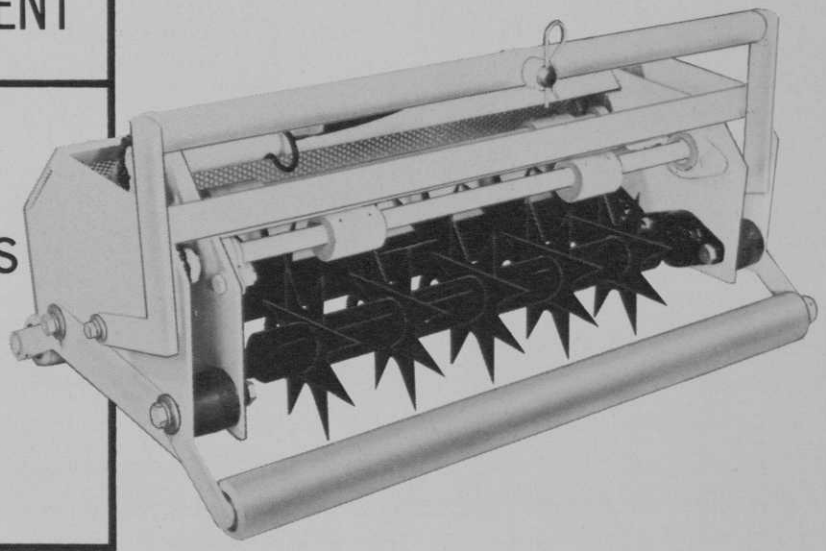
TURFGRASS MANAGEMENT

Answers to your questions about SPIKING



Aren't spiking and aerifying basically the same thing?

Not really, except that both operations open the soil to let moisture and nutrients get to the root zone more easily. Aerifying uses a "spoon," or hollow tine, to extract soil cores out of the ground, leaving openings the roots can grow into... so it relieves soil compaction. Spiking simply opens small slits into the turf, to allow it to breathe better, absorb more easily, relieve surface compaction, and prune roots. But because spiking is not as severe a procedure as aerifying, it can be done as often as desired, even after the vigorous growing season has ended, and does not affect the play of a golf course.

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ENJOY THE GOOD, GOOD LIFE!

Golf course construction: only for the expert

A rather new organization to which I wish lots of luck is the **Golf Course Builders of America**. Robert Vincent Jr. is president this year. I have seen many contractors, who didn't know course building, go broke and ruin what might have been a fine course. There have been too many cases of extravagant, wretched jobs being done by well-meaning local people using their own equipment and untold time and money being lost because the badly built course had to be virtually remade by the superintendent.

The importance of a competent and experienced golf course builder cannot be undervalued.

From what I've heard I believe that the first of the really great golf course builders in this country was the father of the Tull brothers, Al and Frank. He built courses for Devereaux Emmett, who was an artist in golf design, but who didn't know how to build a course. **Tull** Sr. was a genius with cute little ideas about drainage and bunkers that looked natural. His son Al became noted as an architect of well-finished courses and son Frank became a superintendent distinguished by beautifully-groomed courses.

Donald Ross spread good ideas about building courses from his Pinehurst experience. He almost drove builders balmy trying to do with clay and hard, dirty stoney soil what had been done with the Pinehurst sand.

Old timers have told me about some of the great works of art that **A.W. Tillinghast** built as greens, which as targets for shots and for variety and fairness of putting problems and interesting cup locations, rarely have been excelled.

Toomey and **Flynn**, a notable team of course builders, were in the road contracting business and knew how to handle earth. So when the golf architect member of the team had an idea of how he thought the Lord would make a golf hole in a few hundred thousand years, the road contractor partner got the idea and handled the earth accordingly.

The great **Dick Wilson** learned, when he was working for Toomey and Flynn, how to create masterpieces of sculpture with earth. Earth sculpture and landscaping are primarily what a golf course is.

The finest tribute I ever heard paid to a golf course contractor was delivered at a superintendents meeting to **Chuck Maddox**, a midwestern pioneer who made sense out of golf course building and established a reputation that his son is nicely embellishing.

The superintendents were talking about troubles in drainage, erosion, green contours for mowing, bunker construction, the water system, the road work, and other things about new courses that can cost superintendents their jobs in the first few years of operation as well as force members to pay heavily for getting, when they do, a satisfactory course.

The answer came from a superintendent who said, "For a few bucks more than they spent, they could have had Maddox, who is the guy who finishes a golf course so it can be turned over for play and maintenance."

There are others besides Maddox who can do that, of course, but not enough of them. Maddox made architects famous by doing what they forgot to do to get a course ready for satisfactory play a few years ahead of the customary time.

Golf course construction is a specialist's job now. They've learned a lot from everybody. **Sil Paulinie**, the New England course builder says, "What was learned from the Seebees in World War II about handling earth makes it possible to build any kind of a course now without throwing away money. The soil experts, the pump and water and drainage specialists, the electricians, the seed geniuses, the fertilizer boys, the equipment salesmen and the rest of the fellows who know what can be done to make a golf course into a fine building job have to be used by the course architect, and that costs money."

Too many contractors who don't know about golf course building have gone broke on golf jobs. That's their tough luck, but the golf club officials who thought they were being thrifty probably cost their clubs more than the contractors lost.

New club or fee course officials rarely seem to appreciate that the time they save on an expertly done, actually finished job of course construction means money coming in instead of going out.

In the 40-some years I've been covering golf, I've seen hundreds of new courses, but I doubt if I've seen a dozen that really were ready for play when they were opened. That shows what golf course builders are up against.

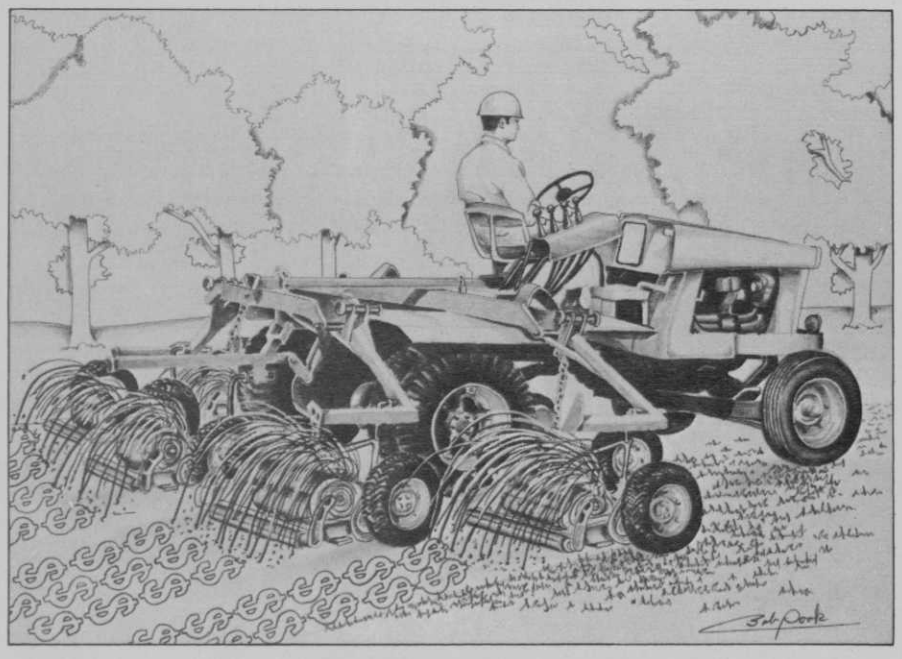
Pythium hit a lot of midwestern fairways and tees last mid-summer. Damage was severe in the Chicago district. In comparing notes with other superintendents on possible causes, prevention and cure **Fred Opperman**, superintendent, Glen Oaks CC, noted that *Pythium* attacked sunny portions of his tees and left the shaded areas untouched.

Orville Clapper was honored by GCSA of New England for his valuable services to superintendents and golf in general in that part of the country. In 1922 Orville went to Newton, Mass., from Philadelphia where he and the late T.L. Gustin had formed the Philadelphia Toro Company, the first of the Toro distributor organizations. Orville's father, Sam, was a founder of the Toro Company in Minneapolis. In developing the New England Toro Company, which later became the Clapper Company, Orville inaugurated many of the equipment and supply practices of stocking, delivery, demonstration, service, repair and consultation that later was extensively adopted in working with superintendents to improve course maintenance standards. Orville's son, Sam, is active head of the company now, but don't think Orville is inactive. At 76 he's looking ahead and making some intriguing forecasts. □

The Superintendent's Budget: Predictions 1972

By Charles G. Baskin

What increases should superintendents expect regarding costs of labor, supplies, chemicals, repairs and new equipment? Author Charles Baskin estimates cost increases and offers some suggestions on budget preparation



President Richard Nixon's wage-price freeze is designed to stem the rising tide of inflation. Superintendents should not be lulled into planning next year's budget based on 1971 figures, hoping that costs of labor, chemicals, equipment repairs and supplies will not increase. All indications point toward 3 to 11 per cent increases in costs of labor, chemicals, supplies, repairs and equipment. Based on a $100,000 budget, these percentages can mean increases of from $3,000 to $11,000.

Labor

The cost of labor, which traditionally takes up between 60 and 65 per cent of the superintendent's budget, continues to climb in spite of the high rate of unemployment. Labor settlements now are in the 8 to 11 per cent range. Golf course management must, for the club's own good, be competitive with the surrounding labor picture in the wages and benefits they offer employees. Most maintenance crews are made up of year-round employees and seasonal help. Priority should always be given to the needs of the year-round employees because they are the backbone of the crew. By being able to retain these key personnel, training time can be reduced and the quality of workmanship increased.

Before finalizing labor budget figures, a check should be made with the state and Federal departments of labor to determine if new laws and regulations will affect the club's wage policies. If the maintenance crew is unionized, or could be unionized, then the club should consider pay increases and work regulations which might arise out of next year's contract. Consideration in the budget should also be given if different or improved management practices (improved hiring practices, training, supervision or more efficient uses of men and materials) will be used, because this could effectively lower labor costs for the coming year.

One example of lower labor costs because of better management is in the chemicals area. Systemic fungicides and new, sophisticated spraying techniques have greatly reduced the number of man hours required to maintain turf, yet the quality of turf continues to improve. The amount of time spent in moving crews from one work area to another can be decreased by the use of transport vehicles. An improved communications system, utilizing walkie-talkies, also cuts down on wasted effort and time. Multi-purpose mowing equipment enables more acreage to be maintained per man hour. The triplex putting green mowers are examples of how the productivity of a worker can be increased through mechanization.

New and improved machines are now available for applying fertilizers and chemicals, topdressing, cutting sod, seeding, raking sand traps, leaf and debris removal. Probably the most important area in which labor cost has been reduced is in golf course irrigation. Automatic irrigation has decreased considerably the number of man hours needed to irrigate the golf course, and more importantly, has increased the quality of irrigation and turf.

Equipment

A sampling of manufacturers indicates they expect anywhere from a 3 to 7 per cent price increase in the cost of new equipment. Rising steel prices could force the increase even higher. Most manufacturers will not be putting on an across-the-board increase but will, instead, be evaluating each of their products and pricing them on an individual basis.

Two very important items that must be included in the cost of new equipment are freight, if the delivered price is not quoted, and sales taxes. Each of these items add many dollars to the cost of equipment from year to year.

The leasing of equipment may be desirable for many clubs, depending