involved in criticism. If you need a sake of the construction. You still have to consider for any problem with compaction with the trucks pulling out on the green. With any kind of luck you can fill three greens in a twelve-hour day. Remember those grade stakes that you put in earlier? Once you have reached grade line on them, they can be pulled. It will be necessary to have a transit set up to check the final contours on the green and you can expect to take about four hours for the first green putting in the final contours using the tract type high lift and a tractor with a grade box. Once the contours have been established, then get the committee together to make sure that everybody involved agrees with the final shape of the greens. I have experienced a situation where we had seed germinated and changes had to be made because "someone" didn’t approve of the architect's design. This, however, shouldn’t be a problem if everyone on the committee knows anything at all about reading blueprints.

The next step is to incorporate the starter fertilizer and seed the putting surface. We used Penncoast Bent at two pounds per thousand. Knowing the size of each green, the seed was weighed out and applied in three directions to insure good coverage. We have had our best results with lightly raking the surface after seeding and then rolling it. The green and sandtraps are then rimmed with sod, two rolls wide. This helps to define both and helps keep the proper design of the green.

We have been involved with constructing the U.S.G.A. type of green for four years and are more than satisfied with the results. If you plan this type of construction as far in advance as possible, it will eliminate a lot of problems. It can be done smoothly and rapidly. The last four greens that we built took twenty work days from start to finish, which averages out to five days per green at a cost of $1.10 per square foot with thirteen greens now completed. This cost figure includes everything except the white sand for the traps. If you are going to take the time to build a green, then do it right from the first time.

Answers to turfgrass insect identification quiz


Golf Business/May 21
PESTICIDES

United Kingdom says 2,4,5-T does no harm

The December, 1980 report from the United Kingdom's Advisory Committee on Pesticides stated that it found no sound medical or scientific evidence that humans or the environment would be harmed by continued use of 2,4,5-T for recommended purposes in recommended ways. The Committee's 1980 report echoed its 1979, although the '80 reviews included evidence which was not available in '79.

The report also stated, in assessing the risk of 2,4,5-T alone, with strict controls on dioxin contamination levels, that 2,4,5-T has "not been shown to cause cancer in experimental animals; that its teratogenic effects in rodents have not been demonstrated in other larger animals, or in the course of long-term studies on humans; and that in the unlikely event that it was a mutagen it could only be a very weak one, so that any possibility that this could affect any user would be negligible even if he or she neglected recommended precautions".

STATISTICS

NGF survey shows play rose 4.14 percent

Paul Spadafora, National Golf Foundation (NGF) Marketing Director, said in the February issue of Golf Market Report, that golf participation in the last quarter of 1980 rose significantly over a similar period in 1979 despite adverse weather and economic conditions in the country." Reporting further, Spadafora wrote that five of the seven geographic regions in the U.S. reported fourth quarter increases, with strong surges in the West, North Central and South Central regions. Total rounds increased 4.14 percent for October through December.

On a nation-wide basis, 63 percent of the golf courses survey reported an increase in play, 33 percent showed a decrease and four percent reported no change. Analyzing 1980, Spadafora projected that total play increased by 3.8 percent to an estimated 359,000,000 rounds, or 13,000,000 more than 1979. Only one region, the Pacific, registered a decrease (one percent).

Participation at private clubs showed the largest increase among the three major types of courses. Play by private golfers comprises 33.9 percent of the U.S. total. Daily fee play was second in terms of rate of increase, although it comprises 43.7 percent of the total. Municipal golf represents about 22.4 percent of total play in the U.S.
environment. Do your golfers know that golf courses are now in the forefront of green-belt planning? Conservation and ecology groups are giving increased recognition to the importance of golf course acreage. Golf courses offer no pollution problems and have a beneficial effect on air purification. If you’re still stuck for something to say, look through copies of your local association’s newsletters for ideas. Most associations encourage such “plagiarism”.

Too often, the club bulletin board is void of information relating to maintenance operations personnel. Like the newsletter, this is an excellent way to keep you and “what’s going on” in front of your golfers. There are a myriad of ways to use the bulletin board to your advantage. Soliciting suggestions can come from the bulletin board, or, recognizing the accomplishments of your crew members. Once again, the purpose is not to win a writer’s award, but to keep you and the importance of your activities in front of the golfer.

There are constant complaints and concerns that the golf course superintendent doesn’t receive enough recognition for his efforts and professionalism. Such problems will undoubtedly continue, unless more superintendents take it upon themselves, individually, to better inform the golfers who play their course. With better informed golfers comes more visibility and better recognition of the important role played by professional golf course superintendents. The trade journals and superintendent associations can help to enhance the image of the superintendent, but the major gains will come, collectively, as each superintendent does more in his own behalf.

I’m not going to ask my standard question on any business flights until next year. When I ask, “Who’s your golf course superintendent?” for the 23rd time, I hope the answer will be the superintendent’s name.

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Sharing ideas will help everyone cope with a water shortage

In the January/February, 1981 issue of Tee to Green, the monthly newsletter of the Metropolitan Golf Course Superintendents Association, Editor Pat Lucas called for "ideas to share" on the serious water shortage that is affecting the Northeast. In the March issue, a list of 50 suggestions was printed, contributed by 15 superintendents and concerned industry officials. The issue also contained a letter from "Old Timer" Ed Worthington, The Ed Worthington Co., whose report was "based upon years of experience coping with droughts".

In this issue of Golf Business, we would like to share those 50 ideas and Ed Worthington's letter, which reinforces many of the points.

We would like to extend a special thank you to Editor Pat Lucas of the Innis Arden Golf Club, for sharing this material with us so that we may share it with you. Thank you also, to the following, for contributing their ideas and expertise: Bob Alonzi, Fairview CC, W. Andy Androsko, Pratt-Gabriel Div., Miller Chemical & Fertilizer Corp., Mike Bavier, CGCS, Inverness Golf Club, Ted Horton, CGCS, Westchester CC, Joseph Lach, Bruce Memorial Golf Club, Frank Lamphier, Aspetuck Valley CC, Melvin B. Lucas, Jr., CGCS, Piping Rock Club, Jay Mottola, Metropolitan Golf Association, Peter Rappoccio, Silver Spring CC, Bill Smart, The Powelton Club, James Snow, USGA Green Section, John Sundhold, The Greenrock Corp., John Wistrand, Metromilorganite, Inc., and Ed Worthington.

Golf Business invites all of our readers to participate in this water forum. If you have questions about how to cope with aspects of a drought, now is the time to ask. If you have developed methods of coping, now is the time to share them. It is a time to unify, for it will surely reflect upon superintendents whose professionalism sees them through yet another adversity. Contact me, Managing Editor Ron Morris at the harvest Publishing Co., 7500 Old Oak Blvd., Middleburg Hts., OH 44130, or phone 216/243-8100, extension 370. We will endeavor to answer all questions and share all ideas.

MGCSAA survey results

1. Minimum nitrogen, higher potash.
2. Higher cut on greens, tees, fairways.
3. Hold back on first watering to harden turf.
4. Establish priorities on watering, i.e., greens, tees, approaches, landing areas, etc.
5. Use anti-transpirants on grass and shrubs. (Experiment)
6. Advise membership now concerning water problems we will be facing. (Emphasis added. Ed.)
7. Watch herbicide-fertilizer application. Use less amounts if water availability is in question.
8. More hand watering, less sprinkler use on greens.
9. Determine how much water you have to work with (capacities of lakes, ponds, etc.). Adjust watering program to possibility of not having any rainfall to replenish these amounts.
10. Omit fairway watering if necessary.
11. Capture rain water from roof gutters, club buildings for filling spray rigs, cleaning, etc.
12. Get back to old time basics of golf course management, i.e. old courses in Scotland, no water but still beautiful.
13. Consider sprigging zoysia grass in fairway areas prone to wilt and moisture loss.
14. Use wetting agents for more uniform water profile. (Experiment)
15. Keep nitrogen at the 3-4 pound rate per year.
16. Program or apply irrigation in dawn to early a.m. hours.
17. Use soil probe to determine water need.
18. Cut less area as fairway — shorter and narrower.
19. Insist on water person timing all moves.
20. Cut down nozzle size if possible.
21. Educate water person as to desirability of "skipping" low fairway areas.
22. Use herbicides only if needed (can reduce roots).
23. Educate your membership, write a special newsletter and follow up articles laying it on the table as to what will happen. (Emphasis added. Ed.)
24. Re-evaluate all your water re-Continues on page 28

Turfgrass maintenance during the water crisis

Ed Worthington, Ed Worthington Corporation

1. Raise height of cut on all mowers to obtain additional shade, provided by the longer grass blades which will help to conserve soil moisture.
a. On golf courses, notify the membership that SLOW greens are the order of the day until the crisis is past.
b. Adjust mowing schedules so that no more than 1/3 of the length of the grass blade is removed at every mowing. This will reduce shock to the plant.
c. Adjust mowing schedules so that no more than 1/3 of the length of the grass blade is removed at every mowing. This will reduce shock to the plant.
d. Your long range problem will be to retain as much soil moisture as possible under your turfgrass areas. In a water crisis, a good long SOIL PROBE can be an important piece of test equipment. Use it daily to check localized dry spots and to find how far down is your drought zone. Start as soon as you can in the spring and try and keep it at least one foot from the surface. Dry soil works up towards the surface—reducing your ground moisture reservoir. When it reaches the root zone, your grass is in trouble. Water applied to a turfgrass area tends to move horizontally with very little vertical penetration until the thatch and ground is thoroughly wet and surface tension is reduced. Methods by which this can be accomplished are as follows: Continues on page 26.
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3. At the turfgrass or playing surface, we have already listed mowing practices to reduce stress and shock at the beginning of this article. To reduce transpiration or evaporation loss, the following suggestions may be helpful:

a. Spray the turfgrass area with a liquid hydrostatic sticker which inhibits water loss and protects against desiccation. It also retards moisture loss on trees, shrubs, etc. Also, it guards against summer scald and winterkill. If this material or a green turfgrass paint is used, be sure and remove all screens in your sprayer; use tepid water in your tank solution and clean your sprayer, thoroughly, immediately after use.

b. To repair or not to repair machine damage, localized dry spots under drought stress is a good question. Instead of chewing up the area and reseeding, it may be better to spray the area with a green turfgrass paint and wait until late summer for renovation. On par 3 golf tees, reseed as needed with a fine-leaved ryegrass until late summer when a good tee mix should be substituted to form a permanent sod.

c. Mulches on non-playing turfgrass areas can provide additional shade to reduce moisture loss. However, what you use and how much can be.
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a tricky business. Hay mulches may introduce undesirable weed seeds. If applied too thickly, lack of sufficient light will kill the turfgrass underneath or cause disease problems. The right amount of straw would be better, as all you want to do is to provide some additional shade, keep weeds down and to let light, air and water down to the turfgrass. Still better, may be plastic netting or woven materials that will accomplish the same purpose but make sure they don’t cause more problems than they are worth.

d. Watch your fertilization program carefully. Keep your potash levels up but be careful about your nitrogen. If you have been using slow release products, remember that will be released from this type of fertilizer of the ureaform type that was applied up to several years ago. So go easy. If in doubt, use a water soluble type in a sprayer and keep checking your bucket clippings on greens. It may even help to not use your buckets on your greenmowers on a water crisis.

e. In high altitude areas, look out for spring kill (wet wilt) in late April and May. Beautiful sunny days with a breeze from the North, together with low humidity and a cold wet soil, can spell disaster. Again, a hydrostatic sticker that retards moisture loss can be very useful during this period. Otherwise, if your pipes are connected, syringe your greens from noon to 3 p.m., just as the fellows down in the valleys must do with their Poa annua in July and August. No water? Get your sprayer or tank truck and fill up somewheres. Then apply to those greens exposed to the northern, low humidity breezes as a syringing operation. Follow the same procedure for syringing Poa annua if water is curtailed in your area.

4. Chemical applications of pesticides during stress periods requires planning. Here are some suggestions in a water crisis:

a. Fungus diseases can be a problem during any stress period. Maintain your fungicide schedule even though heights of cut on your mowers have been raised. Use only enough N to help control dollar spot. Check your pH readings and try to stay around 6.5.

b. Insects may become a real problem. Start early on an insecticide program and keep at it. For hard to wet insects, use a spreader-sticker with your insecticide.

c. Herbicides—personally, I never would use them during any stress period.

5. If your water supply may be cut off or reduced, now is the time to think about where you can get water that is safe for turfgrass and how to get it where you want it. Keep your eyes open for any items that might be useful. An old abandoned sprayer might be repaired to hold water. Make sure you have a small pump with suction hose, strainer and discharge hose—long enough to reach from your lake, pond, stream, etc., to your water carrier, should your irrigation system be cut off.

6. Finally, keep up on long range weather reports for your area, keep a daily weather diary, and record soil probe moisture depths around the course. Good luck and if all else fails, gather together some good Indian friends and hold a Rain Dance.
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