

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 Motola, 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, Metromil-organite, 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 credit 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 zoysiagrass 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-

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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.

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.

2. 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:

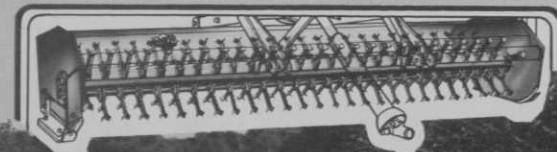
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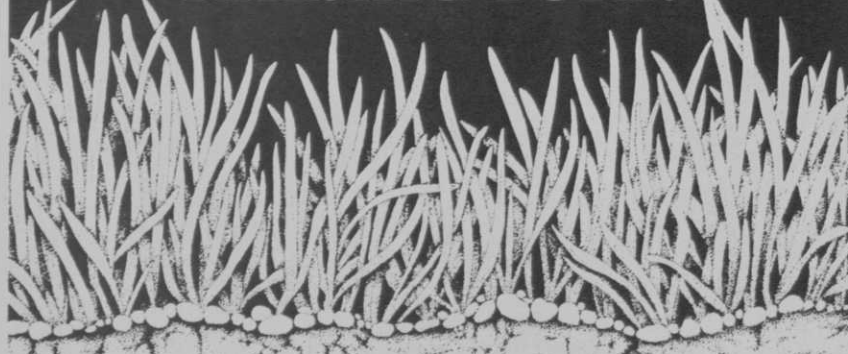
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Crises from page 24

a. Use a spiker at least once a week just before a rain or set up your sprinkler and use it right after spiking. The water will find a path down the spike slits through the thatch zone and charge up the ground underneath with moisture.

b. For real problem areas, use an aerifier and work the water into the holes with a hose or sprinkler. Another method would be to use a verticutting machine with 1-inch spacing on the knives and soak thoroughly with your sprinkler. Check with your soil probe on all operations.

c. Use a soil penetrant (wetting agent) to help your vertical movement of water through the mat or thatch and ground. Start early and use as directed. Chemical wetting agents, by reducing surface tension, enable water to work down in the soil, increasing the soil water reservoir or help the water work up to the grass root zone as needed.

d. Useful tools for working on localized dry spots include an aerifier with two tines about 8-inches apart and a handle to hold on to while your foot pushes the tines about 3-1/2 inches into the sod. The same idea is an air water aerifier connected to a garden hose with pointed tines that have a couple of holes in them for the water. Finally, a tree root irrigator used by arborists which is connected to high pressure sprayer hose can be useful to force water into compacted soil or for deep penetration of water or solutions.

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 somewhere. 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

quirements.

25. Reduce number of rounds of golf allowed on days of stress.
26. Allow for the maximum recovery time of a turf area before use again.
27. Develop a crisis management program.
28. Water 5-10 minutes daily between 5 and 7 a.m.
29. Use sewage effluent for water source.
30. Night watering only.
31. Less frequent mowings.
32. Begin watering as late as possible in 1981. Consider mowing at night to reduce stress.
34. Water in daytime to be able to supervise and observe better.
35. Conserve, adjust watering down to base minimum.
36. Use mulches on plant materials.
37. Erect wind barriers where needed.
38. Seek additional water sources (drains, ditches, wells, ponds, marginal water, roof systems, air conditioner water, etc.).
39. Meter usage.
40. Improve efficiency of system (fix leaks, relocate heads, check nozzles, train waterman).
41. Minimize spring nitrogen applications.
42. Aerate turf areas this spring to establish good roots and ensure good water infiltration.
43. Keep turf "hardened" prior to summer by irrigation as infrequently as possible during the spring.
44. Irrigate at night when possible—less wind, lower temperature, less evaporation.
45. Check soil moisture and depth of roots before deciding to irrigate and then irrigate only to depth of roots.
46. Reduce or avoid other stress factors (insects, diseases, weeds, good traffic control and good drainage).
47. Consider using more organic fertilizers and less inorganic fertilizers to lower salt index and reduce need for frequent and copious watering.
48. If watering is prohibited, consider pump house renovations and improvements.
49. Communicate with and inform local golf associations, such as PGA, MGA, etc., on what effect altered maintenance programs will have on playing conditions.
50. Pray for frequent rains.



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