THE BULL SHEET, official publication of the MIDWEST ASSOCIATION OF GOLF COURSE SUPERINTENDENTS.

1989 Board of Directors

President	Bruce Williams (Roxane) Bob O'Link G.C.	Home: 680-1074 Office: 432-0088
Vice-Pres.	Ray Schmitz (Jan) Flossmoor C.C.	Home: 815-469-2773 Office: 798-2498
Sect'yTreas.	Timothy Kelly (Linda) Vill. Links of Glen Ellyn	Home: 858-8174 Office: 469-2077
Exec. Sec.	Penny Meyer (Dave) Office: 820-8181 MAGCS (Mailing Address) P. O. Box 248, Eola, IL 60519	
Board	Michael Bavier Inverness G.C.	Home: 382-7654 Office: 358-7030
	Ed Braunsky (Sue) Geneva Golf Club	Home: 879-8536 Office: 232-0627
	Donald Cross Bryn Mawr C.C.	Home: 965-3435 Office: 677-4112
	Alan Fierst Oak Park C.C.	Home: 456-7815 Office: 453-7525
	Joel Purpur (Debbie) River Forest C.C.	Home: 832-6763 Office: 941-1651
	Dennis Wilson (Pat) Sunset Ridge C.C.	Home: 441-8387 Office: 446-5222
Pres. Emeritus Offic	Dave Meyer (Penny) Prestbury G.C. ial Photographer Raymo	Home: 820-1040 Office: 466-4177 ond Schmitz
Dr. Randy T. K	Kane, Turfgrass Advisor University of Illinois & C	(708) 954-2753 CDGA

ECKHOFF AWARD

For Excellence In Golf Journalism



We are not copyrighted and would like to share our articles with any who would like to use them, but please give the author and "The Bull Sheet" credit.

Editor -

Fred D. Opperman, CGCS 1022 Shady Lane Glen Ellyn, IL 60137 Phone (708) 858-0601

Bull Sheet printed by Ever-Redi Printing, 5100 East Ave., Countryside, IL 60525.

The **Bull Sheet** is published once a month. All articles are required by the 10th of the month to make the next issue. Advertising is sold by the column inch, by the quarter page, half page, and by the full page. All artwork to be finished and in black and white. Circulation is over 600 issues per month.

-2-



President's Message by Bruce R. Williams, CGCS President, MAGCS

There seems to be differing opinions as to whether or not winter was too short or too long this year. Ready or not spring is here and it is time to gear up for the golfing and growing seasons. One of the things I like most about Chicago is the changing of the seasons. As the ice and snow of winter melt away the chirping of birds and swelling of buds mark the early signs of spring.

I am more excited about this upcoming golf season than ever before. I know that there will be many challenges ahead and I am eager to have the opportunity to solve whatever problems arise. It is nice to start off the year with a positive attitude and a renewed enthusiasm for our profession. Over the winter I hope you have all taken the time to re-charge your own batteries.

Winter affords us the opportunity to catch up on those things we were too busy to accomplish during the stress of summer. The main tasks we undertake during the winter are planning and organizing. Most of our time in the off-season is spent with setting up a strategy or game plan to achieve the goals at our golf courses for the upcoming season. The goals of each golf facility should be clearly defined and each operation should have it's own mission statement, philosophy, and set of objectives. Once the goals are established, then the Golf Course Superintendent can develop and implement the programs to achieve those desired objectives. This may involve equipment purchases, staffing, training, pesticide & fertility programs, course construction, etc. We work in a wonderful but complex industry.

I hope that all of the members of the MAGCS took the time to plan and organize for the upcoming season. A failure to plan is a plan that will surely fail. Let's start the season off with a positive attitude. This is something that can be quite contagious and might even spread throughout your staff and to the other departments of the club. Every day can be a special one if you set your mind to it.

by Timothy Kelly Village Links of Glen Ellyn

The new decade is upon all of us and the game of golf continues to expand at a very healthy rate of growth. Superintendents will have increased opportunities and very important roles to play in the future. All golfers today are very demanding!

Our counterparts Golf Professionals, and Club Managers have also strived to provide the services and amenities that golfers and club members desire. In the 1990's how do: Superintendents, Professionals, and Managers enhance their opportunities to succeed? COOPERATION!

A total quality experience, for all golfers depends on each of the individual staff efforts being coordinated and directed to a common goal. A cooperative effort will improve the golf course, or golf club's ability to provide its clientele with an enhanced golfing experience on any day.

In my own experience, I have been fortunate to be working together with Roger Warren. Roger is the Director of Golf at the Village Links. Since 1986 when Roger came to the Village Links we have been able to forge a successful cooperative working relationship. We have tried to work on mutual and individual operational problems, by working together. We both have respect for the other person's efforts, ideas, and opinions. Roger has been a true professional, and I really enjoy working with him.

In my opinion, this type of working relationship is much more workable and productive than an indifferent, or adversarial relationship. Our main focus at the Village Links is to provide our golfing customers the best golf experience every day. We do not spend time trying to out maneuver or "best" each other. We do try to provide each other with constructive criticism, and helpful feedback. We easily coordinate activities and work together as a team. This helps our staff members to also cooperate and work together. We each have a good understanding of the other's needs, goals, and problems. We are able to adapt or adjust as needed.

If you have not tried COOPERATION at your golf course, or club yet, give it a try, I highly recommend it!

• --- • --- • -

He is the happiest, be he king or peasant, who finds peace in his home.

Prediction

Dr. Roscoe Randall at our last MAGCS meeting in March predicted that the return of the Cicadas would happen on June 12 at 3 a.m. There were 84 in attendance to verify this prediction that occurs every 17 years. The following article goes into greater detail.

Periodical Cicadas Due in 1990

by Philip L. Nixon, Ext. Entomologist University of Ill. Cooperative Ext. Service

Periodical cicadas will emerge during the last few days of May and continue to emerge in early June in downstate Illinois, spreading to the Chicago metropolitan area and most of the northern half of the state. Emergences are expected to be spotty, with large numbers in areas that experienced large numbers at the last emergence of this 17-year brood in 1973. By the end of June, most of the eggs will have been laid and most of the cicadas will have died.

What to look for

Periodical cicadas (incorrectly called locusts by many people) are black with red eyes and orange wing veins. Their total length is about 1¹/₄^{''}. Periodical cicadas emerge from the soil during May and June as one-inch-long brown nymphs that have spent the last 13 or 17 years feeding on the sap of tree roots. Annual, or "dogday," cicadas are larger (over 1¹/₂" long), green or brown and black, and appear each year from July to September. Their nymphs are also brown, but are over an inch long and usually feed on the sap of tree roots for two years. **How they behave**

After 13 or 17 years, the inch-long brown nymphs emerge from the soil and climb up the sides of houses, trees or other plants, where they stay until their skin splits down the back and the winged adult emerges.

After drying for awhile, the adult climbs or flies up into the trees. The males then begin singing to attract females for mating. The brown shell of the nymph remains for several days before falling to the ground, where it eventually breaks apart.

The mated females lay their eggs in neat rows inside pockets they have cut into small branches and twigs. The eggs hatch in six or seven weeks. The newly hatched nymphs fall to the ground, where they burrow down to suck sap from plant roots for the next 13 or 17 years.

Damage they cause

Cicadas feed by sucking juices out of plants, but this is not the cause of damage. The adult periodical cicada feeds very little, if at all. And the root-feeding nymphs rarely cause harm. But it is the egg-laying the adults do into the twigs and small branches of trees that causes the damage. Twigs are weakened from the egg laying and are more likely to die later in the summer, and break during storms. Very young trees, with trunk and major branches yet very small, may be severely damaged or killed.

To avoid damage by periodical cicadas, do not plant trees just before emergence if all of the following conditions exist: • The trees to be planted have a trunk diameter of less than $1\frac{1}{2}$ ".

• The planting site has trees and shrubs that have been there at least 13 or 17 years.

• The planting site was heavily infested with cicadas during the last emergence.

Larger trees are not likely to be damaged enough to warrant postponing planting because the cicadas do not emerge in large enough numbers in many areas to be a problem.

Very small trees can be protected from injury by enclosing them in screening, cheesecloth or mesh bags like those used to ship onions. Tie the mesh around the base of the trunk to (cont'd. page 4)



We dug into the tall fescue control problem. So now you don't have to.



(Cicadas cont'd.)

keep the cicadas from crawling up the trunk and underneath the mesh.

Chemical control

Homeowners as well as commercial applicators can apply carbaryl (sold as Sevin) to protect young trees. Other insecticides available to the commercial pesticide applicator that should be effective include bifenthrin (Talstar), cyfluthrin (Tempo), and permethrin (Ambush, Pounce). Permethrin can only be used in nurseries. Generally, pyrethroids provide effective control for a week to ten days. Carbaryl will probably be effective for five days or less.

Orange Lines in the Roughs

by Timothy Kelly, Grounds Supt. Village Links of Glen Ellyn

In 1988 the Village Links began painting orange lines to help control and manage motorized cart wear on the golf courses. Most of this severe wear is on the long collars, approaches, around the greens, and in the roughs adjacent to greens and tees. This wear is especially evident from the green to the next tee. Golfers like all people take the shortest distance to their next destination, even when riding in motorized golf carts. This wear on the turfgrass has a very detrimental effect on the playability of the golf course. I and the grounds staff have tried to deal with this wear in a proactive approach. This problem had been discussed with the golf staff numerous times without a solution being discovered.

This changed suddenly in early 1988. Mr. Roger Warren, Director of Golf, suggested the use of our current orange line program. He had seen this utilized at other golf courses, especially in Florida. The program has a policy to not allow any motorized golf cart users to drive inside, or past the orange lines. These orange lines are painted in either full circles, or part circles around greens and tees where concentrated wear existed. I was skeptical at first, but I agreed to try it on a trial basis. The program was utilized throughout all of the 1988, and 1989 playing seasons. The orange lines are moved each week and are never left in a permanent spot, unless it is along a paved cart path.

The results so far are: I feel that the orange line program has been successful. Turf areas that were worn around the greens have been improved dramatically, and preserved for enhanced playability. Golfers have cooperated remarkably well to comply with the orange line system.

In the future, the grounds staff needs to learn how to better utilize the orange line program. This orange line program will be continued in the future, and will be combined with other wear fighting systems:

1) The continued utilization of strategically located white control fences (wickets) to evenly distribute wear from traffic.

2) Increased fertilization in roughs and collars so turfgrass can cope better with traffic and wear.

3) Aerification of rough wear areas and of collars, again to help turfgrass be tolerant of wear and traffic.

4) Addition of new paved cart paths were needed.

 Addition of sprinklers in strategically located wear areas in the roughs to help the turf survive wear stress during drought.

Schroeder's Nursery, Inc.



TREES

EVERGREENS

RICHARD A. SCHROEDER DON VIRGENS CARL DRAVIS

SHRUBS

Specializing in Large Caliper Trees We offer complete installation

TELEPHONE: 708-546-9444

23379 W. Route 60 - Gravslake, Illinois 60030 Located on Route 60 between Rt. 12 (VOLO) & Rt. 83 (IVANHOE)

JAMES R. BURDETT Grounds Maintenance Supplies

Post Office Box 52 Lombard, Illinois 60148 (708) 620-5558 Car Phone 710-5656

Nels J. Johnson, Tree Experts, Inc. SINCE 1930

Nels J. Johnson, Sr. Nels J. Johnson, Jr. - Karl G. Johnson Complete, economical tree service for Private Estates, Parks, Municipalities, Golf Courses, Cemeteries, Schools, Industrial Areas.

All phases of Arboriculture, Diagnosing, Pruning, Treating, Transplanting, Fertilization, Hydraulic and Mist Spraying. Removals. Stump Routing. Municipal Forestry. Chemotherapy for elms, and other trees.

FULLY INSURED .

Graduate -- Licensed Arborists MAIN OFFICE - 912 Pitner Avenue, Evanston, Illinois 60202 Phones: GReenleaf 5-1877 - GR 5-5255 Hinsdale, Illinois - FA 5-0970



Predicting and Reducing Drought-Related Plant Problems

by Kris R. Bachtell & Charles A. Lewis DROUGHT AND PLANTS

In August 1987, the Arboretum experienced extremely heavy rains, which resulted in flooding reaching 100-year levels twice within a two-week period. The summer of the following year goes on record as one of severe drought. Other recent drought years include 1983 and 1985. Such extreme variations in rainfall are not only sensed by people, but also by plants. Since water is so essential to plants, we need to be aware of its availability and methods for conservation.

THE ROLE OF WATER IN PLANTS

The woody structure of trees and shrubs serves as a framework and conduit for a water continuum which permeates the entire plant, connecting all parts from the farthest root hair in the soil to the topmost leaf. This continuous liquid environment, found largely within cells, is the site for all the complex chemical and physical processes which characterize life. It transports life-giving substances throughout the plant.

Hydrostatic pressure helps to maintain the turgid shape of nonwoody parts, such as leaves, flowers, and fruit. Water pressure in leaves maintains turgidity of guard cells, which allow minute pores on the leaf surfaces called stomata to open and release water vapor (transpiration) and at the same time take in carbon dioxide. Only a small amount of the water passing through green leaves is utilized directly in the process of photosynthesis. Most water taken in by plants is released to the air through transpiration.

Each cell of the plant is made up primarily of water. Water moves from cell to cell by osmotic action. Rapidly growing shoots, young succulent leaves, and root tips are composed of 90-95% water. The woodier parts of plants comprised mainly of dead cells may be as much as 50% water.

THE WATER CYCLE

The water cycle can be said to begin with precipitation, rain or snow, which soaks into the soil, where it may be absorbed by plant roots. The amount of soil moisture available to roots is affected by the amount of precipitation, soil composition, exposure of site to sun and wind, the slope of the site, and the genetics and structure of the plant itself.

Water that moves downward through a moist soil is called gravitational water. Depending upon the structure of the soil, it can percolate below the reach of roots in a few days, except when showers follow one another in rapid succession. Soils vary greatly in composition from coarse sand and gravel to fine clay. Loam contains a mixture of soil particle sizes. Water passes quickly through sand and gravel, rapidly becoming unavailable to plants. On the other hand, clay particles bind water so tightly that little of it is available to plants. Of the soil types, loam holds water more readily in a state where it is available to plants.

Some water is held as a film around the soil particles and in the pore spaces between them. This is known as capillary water. As long as it is present, the soil atmosphere is almost saturated with water vapor. Roots grow into these pore spaces and absorb the water for plant growth. When capillary water is depleted, the water that remains is held so tightly against soil particle surfaces (hygroscopic water) that it is largely unavailable to plants.

(cont'd. page 8)

Irrigation Engineering Co.

...SOUND ENGINEERING and QUALITY MATERIALS





-6-





Adding organic matter, such as decayed manure or compost, will increase the water-holding capacity of sandy soils and the available water in clay soils. (See *The Morton Arboretum Plant Information Bulletin* Number 35, Autumn 1987, for a more comprehensive discussion of soils.)

A water deficit impacts on the entire plant, leaves become less turgid and wilt, stomata close, and vital plant processes dependent on water and gas exchange slow down. The closed stomata cut off the supply of carbon dioxide, which reduces photosynthesis and the amount of carbohydrates and other substances available for growth and storage. The plant lacks both water and carbohydrates which are no longer being produced. Respiration, the process which releases the energy of stored foods to fuel growth, is not quite as sensitive to water shortage and continues day and night, further depleting the food reserves of the plant. Indeed, high temperature accelerates the rate of respiration and depletion of food reserves in the plant.

When a plant is subjected to prolonged drought stress, these changes often make the plant more susceptible to certain kinds of insects and diseases. A weakened plant possesses less natural resistance to these potentially harmful organisms than does a healthily growing plant, which can more likely withstand insect and disease attacks. This situation is analogous to an elderly person who falls and, breaking his pelvis, becomes prone to serious respiratory infection.

STRATEGIES USEFUL IN REDUCING THE EFFECTS OF DROUGHT

PROPER PLANT SELECTION AND USE

Planting well-adapted landscape plants is the most effective way to reduce the direct and indirect effects of drought. Plants proven to be susceptible to chronic stress-related insect or disease problems in our region should not be used without providing specialized care in siting, planting, and maintenance. Consideration should be given to: supplemental irrigation, special soil modifications, and careful siting of plants. The continued use of canoe or paper birch (Betula papyrifera) is a good example of improper plant selection. Locally, this species occurs spontaneously only on north-facing ravine slopes along the shore of Lake Michigan north of Chicago, and in sand barrens around Gary, Indiana. The soil in these locations typically remains moist and has excellent drainage. Under these conditions, paper birch grows well and is naturally quite resistant to bronze birch borer. Under more typical landscape conditions in the Chicago area, plants are subjected to higher soil temperatures and reduced soil moisture and aeration. This situation predisposes paper birches to borer attack. Several other commonly planted trees and shrubs have proven sensitive to drought and should not be used unless special care is taken. These include:

Japanese maple Red maple Sugar maple Alders Birches Katsura tree Pagoda dogwood Flowering dogwood Winged Euonymus Acer palmatum Acer rubrum Acer saccharum Alnus spp. Betula (most species) Cercidiphyllum japonicum Cornus alternifolia Cornus florida Euonymus alatus and cultivars (cont'd. on page 10)





Build your Pythium control program on a firm foundation. Chipco[°] Aliette[°]



P. O. Box 12014, 2 T. W. Alexander Drive Research Triangle Park, NC 27709 919/549-2000 Carolina silverbell Larches Shrubby cinquefoil Douglas fir Pin oak Currants Rhododendron

Willows Mountain ash Cut-leaved Stephanandra

Arborvitae or White cedar Canadian hemlock

For these plants to survive during a drought, they need special care. Irrigation equipment such as sprinklers or drip irrigation should be installed at the construction and/or planting phase of the landscape project. For some of these plants, modification of the existing soil may be necessary. Through the addition of soil amendments such as compost, peat moss, sand, Perlite, and others, the plants may become established more readily and be more drought tolerant. A word of caution — incorporating these materials often increases the drainage and aeration of soil, making the use of supplmental irrigation even more important.

Carefully siting plants in protected locations is perhaps the simplest, least expensive method of drought protection. For example, siting a plant on the north or east side of a building so that the root zone is shaded during the hottest part of the day reduces the plant's need for water. Simarily, siting a plant where it is protected from sweeping, dry winds reduces the need for water by reducing the rate of transpiration.

Many plants that have proven to be more tolerant of drought have been selected from native habitats where sparse or erratic rainfall is common. These plants have evolved to be more dorught tolerant. The Black Hills white spruce (*Picea glauca* var. *densata*) is a good example. This white spruce selection occurs spontaneously in the Black Hills region of South Dakota and possesses greater drought and heat tolerance than plants from more easterly and northerly regions where the precipitation is more evenly distributed. Other plants that have proven to possess good drought tolerance include:

Amur maple Black maple Silver maple Legacy sugar maple Tatarian maple Whitespire birch

Common hackberry Gray dogwood Drummond's dogwood American smoketree Green ash

Thornless honey locust

Junipers

Halesia carolina Larix spp. Potentilla fruticosa Pseudotsuga menziesii Quercus palustris Ribes spp. Rhododendron (various hybrids and cultivars) Salix spp. Sorbus aucuparia Stephanandra incisa and cultivars Thuja occidentalis and cultivars Tsuga canadensis



Unique FullJet[®] spray tips reduce drift with larger more uniform droplets.

Fighting turf chemical drift is easy: switch to FullJet spray tips. With FullJet spray tips, droplets are larger and more uniform than droplets produced by ordinary tips. So just in case the wind picks up, go pick up a set of precision-machined



FullJet spray tips.....only at your TeeJet[®] dealer.



-10-

Acer ginnala

Acer tataricum

Acer nigrum and cultivars Acer saccharinum and cultivars

Acer saccharium 'Legacy'

Betula platyphylla var.

japonica 'Whitespire'

Celtis occidentalis

Cornus racemosa

Cornus drummondii

Fraxinus pennsylvanica

Gleditsia triacanthos f. inermis and cultivars

Continus obovatus

and cultivars

Juniperus spp.

(cont'd. page 15)