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MARKING TREES TO SPEED UP PLAY

an idea from
Tony Meyer, Supt. Woodrige G C

After seeing the slides from Hawaii, where the Golf Course Superintendents use colored glass to point out to the golfer where his ball enters or lies in a group of trees, believe my idea, which we have used at Woodridge, works just as well or possibly better.

I stood on the tee and had a man paint numbers on the trees, beginning with No. 1, that are visible from the tee, at various points, and at places 100 to 250 yards from the tee, and beginning at the fairway to a depth of 20 yards or so into the woods.

Each Superintendent may have individual cases, as one must familiarize himself with areas where balls are lost, and mark the trees accordingly. At Woodridge it certainly has speeded up play. While observing golfers on the tees, I have heard one say to his partner, "your ball is by No. 7 tree," so I do know that this idea does work.

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ISSUE



The President's Message

Now that winter is over and spring is finally coming, and it looks as if we're not going to have any more snow, the golf season is upon us. Now that all of the fear of winter desiccation is over, we can set our sights on getting our courses ready for the season. This means that we finally have to go to work.

All of those plans that have been made during the idle hours of the long winter months, must be put to use. Those projects that were left undone can now be started again, along with our regular maintenance program.

I sincerely hope that every superintendent will have a successful season.

C. E. (Scotty) Stewart's many friends will be pleased to know that he has recently been elected as Vice-Chairman of the Board of Directors of the Homewood Savings and Loan Association which has assets in excess of 32 million dollars. This puts Scotty in an ideal position to advise superintendents, who might plan on mortgaging a home on the south side of Chicago, in the method of securing favorable terms.



Editorial

YE GODS, WHAT HAVE WE DONE

Survival of the human race, what is it worth? In the March editorial I suggested that there are several topics which are worthy of discussion. Survival would seem to be a good place to start.

At conferences in the past few years it has been considered timely to give projections of what our field will be like in the future, say 15 years from now. The predictions are very optimistic; better machines, new—more potent chemicals, fancy watering systems, etc. Some might go so far as to predict "Computer Controlled Turf"! But, before we go off the deep end, perhaps we had better get our heads out of the sand about what is going on in this world of ours.

"If things continue as they have," is the basis for most of the wild predictions we have heard. LET'S MAKE IT PERFECTLY CLEAR that things cannot go on as in the past. We live in a finite world (the mathematical approach) and eventually we will run out. Of what? Natural resources! We also live in a world that is being devastated by our dual-god, growth and technology. Progress means to have it wrapped in a package.

One does not have to go far to find statistics on the pollution problem these days. A good sign! People pollution—overpopulation is being talked about more and more. It of course, is the most deadly.

Put aside survival for a moment. What is going to be the effect on our field in the future. The following are some of my predictions. Pessimistic? Yes! Drastic? Yes! Unfounded? No!

Fairway watering will be a thing of the past because of a lack of water. Green watering might be **tolerated**, however, because it is necessary to the game. We will see a sharp cutback in fertilization as we know it since it will be needed for food producing. Most of our pesticides will be outlawed due to ecological effects. The use of internal combustion engines will be severely limited. And finally, I differ with most in that I think labor will be abundant and cheap, this includes superintendents.

All of the above paints a grim picture but as I stated, it is not unfounded. Listed below are several publications which I suggest you read.

It is important to view the entire picture of human survival and then place yourself and your interests in the proper perspective. When this is done, it is easy to see that turf management is not exactly on the top of the list. When survival is at issue, most personal interests become trivial. However, to be more

optimistic, I think that we (as people working with nature) are more suited than most for the future due to our common sense, manual dexterity, and "green thumb" abilities.

Any Thoughts?

Borgstrom, G., "Too Many, A Study of Earth's Biological Limitations." — New York: Macmillan, 1969. \$7.95.

Ehrlich, P., "The Population Bomb". — New York: Ballantine, 1968. 95¢.

"The Environmental Handbook". Edited by Garrett De Bell, 95¢.

This book has a fine bibliography.

Footnote:

Since this editorial was written, the Daily News ran a front page story on the impending "water war" in the Chicago suburbs. It was in the Saturday, April 4 edition. Since then, more articles have followed.

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SAY IT WITH SLIDES

A picture is worth ten thousand words according to a trite old Chinese proverb. Those of you attending any of the recent conferences have seen that pictures are worth at least that, as many of the presentations would have been nearly meaningless without the accompanying slides.

Why take pictures? The primary reason, of course, is so you can look back and see how things used to be. Think back... you should have gotten a shot of #5 green before you built that sand trap, or #12 dogleg before you planted those trees, or the way you used to fertilize greens, or ...

These pictures could become very valuable to you in a short slide presentation at a Green Committee meeting, at one of our monthly meetings, or even through an informal discussion right in your own office! Of course if you haven't made any changes in your course or updated any of your methods, maybe you don't need a camera... you may soon need a job... but not necessarily a camera.

A few years ago everyone had an excuse not to take slide pictures; cameras were either expensive and difficult to operate or they were cheap and produced poor quality pictures. Today there are a number of cameras on the market for \$10 that are capable of producing good slides. For around \$15 for film and processing, you can shoot 100 pictures a year.

Thanks to Roy Nelson for being so observant in finding the above in the Rocky Mountain GCS "Reporter." Roy suggests that we have an idea session of slides at our fall clinic.

BORERS IN BIRCH

by Stanley Rachesky
Entomologist, University of Illinois

What's new for 1970 in the insecticide world? I think the Birch trees are in trouble. With DDT off the market our only recommendation is to wrap newly set trees with paper for the first two years, fertilize, water and pray—especially if it's your tree.

The bronze birch borer is a very widely distributed geographical pest of birch trees, especially white birch. It will infest all parts of the tree. It burrows under the bark causing the bark to loosen and ooze sap. The insect overwinters in the grub stage and emerges in the spring as an adult bronze beetle. The adult female then mates and lays eggs in the crevice of the bark. The birch tree starts to appear ragged looking then dieback at the top of the tree is typical. Lumpy, oozing branches is also typical. Some trees recover but generally the borer wins.

Enough about borers. All other control measures look real good. Following is a chart on the control of tree and shrub insects for the coming year. Add two weeks in timing your application for northern Illinois and subtract two weeks for southern Illinois.

TREE AND SHRUB INSECTS

Insects	Insecticide	Suggestions ¹
Aphids (NHE-7)	diazinon malathion	Spray foliage thoroughly with force. Repeat as needed.
Bagworms (NHE-6)	carbaryl diazinon malathion	Spray foliage thoroughly. Apply June 15. Later sprays are less effective.
Catalpa sphinx	carbaryl malathion	Spray foliage when feeding or worms are first noticed.
Eastern tent caterpillars	Same as for catalpa sphinx	Spray when nests are first noticed.
Elm leaf beetle (NHE-82)	carbaryl	Spray as soon as damage is noticed.
European pine shoot moths and Nantucket pine moth (NHE-83)	dimethoate	Spray ends of branches thoroughly in early June for European species and in mid-May for Nantucket species.
Fall webworms	carbaryl diazinon malathion	Spray when first webs appear; clip off and destroy infested branches or burn out webs.
Galls (NHE-80, 81)		
Elm cockscomb	diazinon	Spray foliage thoroughly when buds are unfolding.
Hickory	malathion	
Maple bladder		
Hackberry blister	diazinon malathion	Spray foliage thoroughly in late May. Kills psyllids in galls.
Cooley spruce	diazinon	Apply in late September or October or early spring just before buds swell.
Eastern spruce	malathion	
Green-striped mapleworms	Same as for catalpa sphinx	Spray as soon as damage is noticed.
Leaf miners	diazinon	Spray foliage thoroughly when mines first appear. Repeat treatment in 10 to 12 days.
Birch	malathion	
Boxwood		
Hawthorn		
Oak		
Mealybugs	malathion	Spray foliage thoroughly and with force. Repeat in two weeks.
Mimosa webworms (NHE-109)	carbaryl malathion	Spray foliage thoroughly when first nests appear (June, July). A repeat treatment may be needed.
Mites (NHE-58)	chlorobenzilate dicofol	Pay particular attention to underside of leaves. Apply 2 or 3 times at weekly intervals.
Oak kermes	malathion	Spray foliage thoroughly about July 1 to kill the crawlers.
Periodical cicadas (NHE-113)	carbaryl	Spray all branches thoroughly when adults appear. Repeat in 7 to 10 days.
Sawflies	Same as for fall webworms	Spray as soon as worms or damage is evident.
Scale (NHE-114)	malathion	Spray foliage thoroughly in early April for <i>Fletcher</i> and <i>European elm scale</i> ; in late May for <i>pine needle</i> and <i>sweet gum scale</i> ; in early June for <i>scurfy</i> , <i>oystershell</i> , and <i>euonymous scale</i> ; in early July for <i>cottony maple</i> , <i>Juniper</i> , and <i>dogwood scales</i> ; in mid-July for <i>spruce bud scale</i> ; and again in early August for <i>oystershell scale</i> .
Putnam	dormant oil diluted	Apply when plants are still dormant in late winter. Do not use on evergreens.
San Jose	according to label	For tulip tree scale, a malathion spray in late September or in early spring is also effective.
Tulip tree		
Spring cankerworms	Same as for catalpa sphinx	When leaf buds open in spring, while worms are still small.
Spruce budworms	Same as for fall webworm	Spray when caterpillars are noticed.
Sycamore lace bugs	carbaryl malathion	Spray when nymphs appear, usually in late May.
Thrips	Same as for aphids	Mainly on privet. Spray foliage thoroughly.
Yellow-necked caterpillars	Same as for catalpa sphinx	Spray foliage when worms are small.
Zimmerman pine moths	malathion	Spray in mid-August and again two weeks later. In each spray use twice the amount of malathion suggested in the chart below.

¹ Treatment dates are listed for central Illinois. In southern Illinois apply 2 weeks earlier and in northern Illinois 2 weeks later.

Amount of Insecticide Needed for Volume of Spray

	1 gal.	6 gal.	100 gal.		1 gal.	6 gal.	100 gal.
carbaryl 50% W.P. ¹	2 tbl.	¾ cup	2 lb.	chlorobenzilate 25% W.P.	1 tsp.	2 tbl.	2 lb.
diazinon 25% E.C. ²	2 tsp.	4 tbl.	1 qt.	dicofol 18.5% E.C.	2 tsp.	4 tbl.	1 qt.
lindane 20% E.C.	1 tsp.	2 tbl.	1 pt.	dimethoate	2 tsp.	4 tbl.	1 qt.
malathion 50-57% E.C. ³	2 tsp.	4 tbl.	1 qt.				

¹ Do not use on Boston ivy. ² Do not use on ferns or hibiscus. ³ Do not use on canaert red cedar.

Note: E.C. = emulsion concentrate; W.P. = wettable powder.

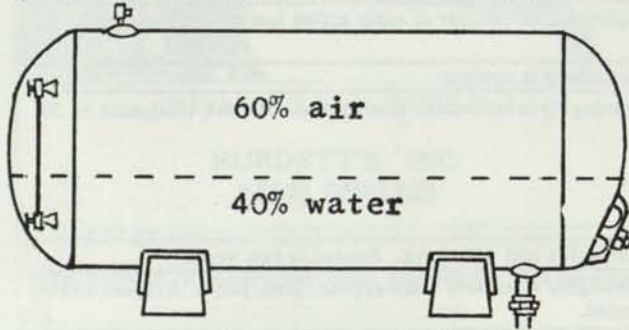
MOISTURE IN FIELD CONTROLLERS

Some trouble has been experienced with field controllers on an automatic irrigation system by condensation forming over the winter months and corroding the contacts and wires. Some installations use a thermostatically controlled electrical heater to overcome this condition but probably the best and cheapest method is to allow the time switch clock to operate all winter and of course be sure and put all of the station switches in the off position. The slight heat given off from the clock winding seems to keep the condensation in check similar to the pilot light in a gas or oil furnace operating all summer to keep the interior of the furnace dry.

C. E. (Scotty) Stewart

PRESSURE TANK SYSTEM CONTROL

The time will soon be with us again when it will be necessary to put pumping plants and irrigation systems into operation. For those who have automatic pumping plants incorporating a pressure tank it is suggested that an operating air-water ratio in the tank be 60% air and 40% water is indicated on the drawing below. This ratio permits the pump to operate within the desirable pressure limits.



To obtain the above water ratio the air-compressor should be started **while the tank is still empty** and the air pressure raised in the tank to 60% of the operating water pressure in the irrigation system, i.e. if the irrigation system pressure is 100 lbs. then the air pressure should be raised to 60 lbs., or if the irrigation system pressure is 150 lbs. then the air pressure should be raised to 90 lbs. (150×0.60). After the pressure tank is charged with air as stated above the pump can then be started and it will be found that when the tank becomes 40% filled with water the high operating system pressure will have been reached. In other words the original air in the tank has been compressed into 60% of its former volume with the water entering the tank and the pressure increases accordingly.

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IS TALL FESCUE THE ANSWER?

Tall fescue for lawn and other turf use is on the upswing. It is very difficult for some turf enthusiasts to realize why tall fescue would ever be recommended and impossible for them to realize why such a coarse-textured grass would be used on home lawns.

First let's consider its texture. Used as forage, rough turf, or when it is present as a seed contaminant in home lawns, tall fescue definitely is a very coarse-textured, bunch type grass. However, when seeded at 6 to 8 lbs. per 1000 sq. ft., the texture is much finer and its coarseness is not obvious. A few years ago no one would have considered using it on golf courses since texture is of utmost importance. Many courses are now using tall fescue in the roughs and even a few in the fairways. Normally, bunch type, coarse grasses are not used in fairways since the ball is not held up by the turf and good clubface-ball contact is impossible. This affects the golfer's ability to control the shot. On a golf course near Ocean City where a large amount of tall fescue is used, it has not bunched, is not undesirably coarse and does not penalize the golfer. As long as good competition exists, clumpy growth and coarseness will not be a problem. This competition may be interspecies as a result of high seeding rate or among other species (tall fescue-bluegrass mix).

One of the greatest attributes of tall fescue in Maryland is its relative resistance to most common diseases. The increasing Fusarium problem on bluegrasses has resulted in a shift to tall fescue. Fusarium has not been well-characterized and control with present fungicides has been impossible. Since this is likely to be a re-occurring problem each year on those infested bluegrass lawns, a specie change is inevitable. Where bermuda and zoysia are not desirable or feasible, tall fescue is the only solution at present. Other common diseases such as dollar spot, melting out or leaf spot, and rust have not been a problem with tall fescue.

Tall fescue seems to have good insect resistance. Although it has seen limited use as a turfgrass, the normal grub, sod webworm and chinch bug problems have not been reported in Maryland. The Green Bug aphids caused considerable damage to bluegrass seedlings this past fall but Kentucky 31 tall fescue, even in mixed stands with damaged bluegrass, was not affected. This was likely a result of its good seedling vigor.

In many Maryland subdivisions, the land is denuded and the contours changed so much that the resulting soil conditions are extremely variable and fertility poor. Very often, a bluegrass-ryegrass mixture is seeded for quick cover and the homeowner is unaware of his future problems. During the following year or two after the ryegrass begins to diminish, the homeowner begins overseeding with bluegrasses and spending considerable money for special fertilizer, herbicides, insecticides, etc. to improve existing turf. Most often his efforts are worthless because of the existing topsoil characteristics (low pH and fertility, poor drainage or droughty soil). Under many of these conditions, bluegrass will not grow and weeds will overtake. The only real solution is to improve the soil

conditions by adding soil amendments, raising the pH and improving fertility. Due to a lack of capital, this is not always feasible. Consider the possibilities of tall fescue in such a situation. It also needs a good topsoil for best growth but it can tolerate various fertility and pH ranges and can withstand poor drainage or droughty conditions more so than bluegrasses. Also due to its seedling vigor, overseeding may be very successful if complete renovation is not possible. But, Be Careful! Broadcasting tall fescue seed over an existing lawn will not result in a good tall fescue turf, but one that is clumpy, variable and impossible to groom. Good soil-seed contact is necessary! Also, competition from existing turf or weed species must be kept at a minimum.

Consider the following as an overseeding method to be accomplished during September. 1. Mow existing lawn very closely. 2. Add lime and fertilizer at rate recommended by soil test. 3. Traverse lawn several times (in different directions) with a verticut (vertical mower or dethatcher) set to penetrate the soil as deep as possible. 4. Seed Kentucky 31 tall fescue at about 8 lbs. per 1000 sq. ft. 5. Either hand rake to cover seed or traverse the lawn again with the verticut. 6. Water frequently to keep surface moist and mow close until seeds begin to germinate (5 to 7 days). 7. As seeds germinate raise mower to about 2 1/2 inches and reduce irrigation frequency.

Overseeding is not the best means of establishment and may be very unsuccessful if attempted during spring when weed and existing turf competition is severe. Complete renovation, disking or rototilling fertilizer and lime into the top 6 inches of soil, is the best means of soil preparation.

Tall fescue is not a panacea in itself. It lacks a fine texture and slow growth desirable for a home lawn. Also, probably very serious, is its inability to remain dominant in a tall fescue-bluegrass mixture. The bluegrass component is needed but offers severe competition and may even dominate after a period of 5 to 10 years. This competition and eventual dominance will not, however, increase clumpiness of tall fescue unless the bluegrass is later lost as a result of insect or disease damage.

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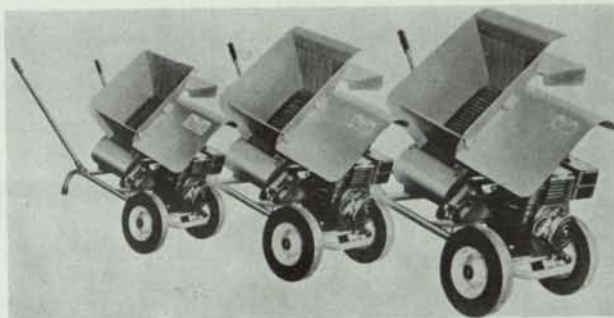
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WHY NOT BENTGRASS BLENDS?

Including fine fescue and bluegrass in seedings can contribute seasonally to the turf's beauty, and is economical.

By Dr. Robert W. Schery
Director, The Lawn Institute

There is no more economical way to establish turf than from seed. There is no more luxurious a turf than select bentgrass. There is no more skilled management for taking care of bentgrass than the golf course superintendent, especially in this era of the irrigated fairway. So why not put greater emphasis on seeding fairways with economical mixtures built around Highland colonial bentgrass (*Agrostis tenuis*)? This would seem to make sense for courses from Tennessee northward.

As recently as World War II almost every lawn seed mixture was compounded not only of top-flight Kentucky bluegrasses and fine fescues, but also a small percentage of bentgrass "to provide body." Often unpedigreed bents, containing variants ranging from velvet bent to redtop, were included. Where humidity was favorable, such as near the Great Lakes, some biotypes naturalized, and have since gotten out of hand. Some researchers, of recent vintage, viewing lawn seed mixtures by today's more critical standards, have concluded that it is usually best to plant bentgrass alone (and manage it for bentgrass), or Kentucky bluegrass-fine fescue alone (without bentgrass inclusions).

You can accept this reasoning or not. But in any event, as we shall see, I believe the logic of the argument applies more to the lawn than the fairway. Even for the lawn, it's questionable. So far, in our tests on the Lawn Institute grounds, we have failed to see any of the select varieties of bentgrass, particularly the work-horse Highland variety, become a pest in bluegrass turf. As a matter of fact, bluegrass has tended more to invade Highland bentgrass than vice versa.

One of the reasons bentgrass mixed with bluegrass-fine fescue has sometimes been frowned upon, is that the ultimate turf is viewed solely as a bluegrass-fescue population. Bentgrass is the ill-represented minority. If an off-type gets started, or volunteer creeping sorts become naturalized, making colonies or patches of contrasting color and texture in the turf, these are understandably viewed as discordant in a bluegrass matrix. In our plantings with Highland, I haven't seen this happen to any great degree, but nonetheless you can see how it might where bentgrass has naturalized widely. But on the modern fairway, where the pros demand half-inch mowing, you're looking at exactly the reverse side of this coin. Bentgrass becomes the base population.

The question, then, is: Are the bluegrasses and fine fescues making discordant patches in bentgrass turf? Happily, it's just not the nature of Kentucky bluegrass and fine fescues to be so ungentlemanly, especially at half-inch mowing, and under irrigation!

Our premise is that today's fairway is essentially bentgrass environment. The close mowing precludes reliably dense and weed-free bluegrass-fescue. But that does not mean bluegrass-fescue has no place. Rather than avoiding mixtures that combine these stalwarts, why not view fairway seeding as a bentgrass planting that is supported by bluegrass and fescue? The lawnman's approach is bluegrass-fine fescue into which bentgrass is introduced. There is a great deal of difference. In the former, management is oriented to bentgrass needs; in the latter, of course, to the bluegrass-fescue. Although lawn advisories may overlook this distinction, today's superintendent cannot, for modern demands make the fairway essentially a bentgrass environment. Slight adjustments in the mowing, feeding and weeding schedule are all that is needed to accommodate a colonial bentgrass on an irrigated fairway.

What can fine fescue and bluegrass contribute to a seeding of colonial bent? Naturally, the performance of any combination of grasses varies according to local conditions. But surely the fine fescue, with its comparatively large seed, helps establish cover quickly, while bentgrass goes through its slow early phase of growth. If a little bluegrass is there too, additional density should result.

In our tests at the Lawn Institute, seedings which have combined modest percentages of bluegrass, or fine fescue with Highland bentgrass, show dwarfed plants of these species continuing to stay alive. They contribute seasonally to the attractiveness of the turf. This in spite of maintenance adjusted entirely to favor the bentgrass, that is, frequent close mowing at a half-inch or less, regular watering, and generous fertilization—practices that in theory give bentgrass every advantage. I won't say that our experience applies everywhere. But I think it's worth considering whether a modest percentage of fine fescue, say in a colonial seeding, doesn't have merit.

The fescue (and bluegrass) contribution may be solely in the initial year, these grasses disappearing subsequently; but even so, isn't this worth the additional assurance of a good initial stand? Seedings made by professionals in the heart of "bentgrass country," such as the western slopes in Washington, frequently are of equal parts (by weight) of a fine fescue and a colonial bentgrass. By seed count this means 10 times as many bentgrass seeds as fine fescues, since bentgrass runs in the neighborhood of seven million per pound, fescues considerably less than a million.

The economy of seeding as contrasted to vegetative planting hardly needs comment in this age of high-priced and difficult-to-find labor. The cost of the seed is inconsequential compared to investment in time and facility required to get a golf course on stream on schedule. So there's really no good substitute for seeding of fairways over the northern two-thirds of the nation. Soil cultivation with tractor equipment, followed by fertilization and leveling with other machinery is all that is needed. With the trend strongly towards underground irrigation facilities on the fairway, achieving good germination is now less a problem, even without mulch (although a mulch, such as clean straw, or one of the newer slurries, that can be blown or sprayed over acres with the modern hydroseeders, are added insurance). A slightly rough or pebbled soil surface provides good lodg-

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