

PRESIDENT'S MESSAGE Roger Barton

I would like to thank Kurt Thuemmel for his hard work as President of Western Michigan Golf Course Superintendents Association for the past two years. Kurt has always been active in our association. I will work hard to fill his shoes. I have some new ideas to present to the Board of Directors to move our association forward. One of my goals is to make our meetings more beneficial and fun for all so that we can try to improve our attendance. We have been working on a meeting agenda and it will be finalized soon. I have appointed the following Board members to the committees below:

Notification: Bob Johnson - Forest Hills G.C. MTF Representative - Kurt Thuemmel, C.G.C.S. - Walnut Hills G.C. Membership - Paul Richter - Spring Lake C.C. Charles Dinkins - Charles Binder Park G.C. Nomination - Kurt Thuemmel, C.G.C.S. - Walnut Hills C.C. Education - Peter Ashe, C.G.C.S. - Hillsdale G. & C.C. Doug Boyle - Duck Lake C.C. Newsletter - Keith Paterson, C.G.C.S. - Kent C.C. Golf Day - Chris Fochtman, C.G.C.S. - Greenridge C.C. and Host Roger Barton - Blythefield C.C. Golf Events - Chris Fochtman, C.G.C.S. - Greenridge C.C. and Bob Johnson - Forest Hills G.C. G.C.S.A.A. Liaison - Fred Pastoor, C.G.C.S. - Muskegon C.C. GAM Representative - Roger Barton - Blythefield C.C. Fall Party - Fred Pastoor, C.G.C.S. and host Kurt Thuemmel, C.G.C.S. Walnut Hills C.C. Voting Delegate - Roger Barton - Blythefield C.C. Alternate - Chris Fochman, C.G.C.S. - Greenridge C.C.

I am looking forward to working with the membership and the Board of Directors for the betterment of our Association.

Chris Fochtman, C.G.C.S., our Golf Events Chairman, will work hard with our host superintendent at our monthly meetings to get a mixer tournament going. I think this will help bind our membership together. I'm looking forward to seeing everybody at Houston for the G.C.S.A.A. Conference and show.

1988 WMGCSA OFFICERS

Roger Barton President Blythefield Country Club, Belmont, Michigan 616/363-5945

Fred Pastoor, C.G.C.S. Vice-President Muskegon Country Club, Muskegon, Michigan 616/759-0694

Kurt Thuemmel, C.G.C.S. Past President Walnut Hills Country Club, E. Lansing, Michigan 517/332-6060

Directors

Bob Johnson Forest Hills C.C., Grand Rapids, MI 616/949-8330

Paul Richter Spring Lake C.C., Spring Lake, MI 616/842-4840

Peter Ashe, C.G.C.S. Hillsdale C.C., Hillsdale, MI 517/437-7861

Charles Dinkins Charles Binder Park G.C., Battle Creek, MI 616/966-3459

Chris Fochtman, C.G.C.S. Greenridge C.C., Grand Rapids, MI 616/784-6597

Douglas Boyle Duck Lake C.C., Albion, MI 517/629-9015

Editorial Committee

Photographer.....Charlie Scott 616/731-4148

Bill Madigan C.G.C.S., C.C. of Jackson - 517/787-0650

Kurt Thuemmel C.G.C.S., Walnut Hills C.C. - 517/332-6060

Advertisers

Please patronize them as they have made this newsletter possible.

Arthur Hills & Associates C & R Grinding Century Rain Aid D & C Sales Ellis Sales Grand Rapids Tree Ideal Mower Lawn Equipment LESCO Matthews & Associates Miller West J. Mollema & Sons Nor-Am Chemical Parmenter & Andre Pfeiffer Lincoln Raymer Pump Rhone Poulenc Spartan Distributors Standard Sand Turf Chemical Turfgrass



NEW MEMBERS

Tom Elliott Pfeiffer Lincoln Mercury Business - 616/949-7800

Louie Krepp Grand Haven Golf Course Business - 616/842-3970 Home - 616/842-6614 Stephen Tedhams Calumet Country Club Business - 312/799-5111 Home - 815/485-6913

Todd Webster Forest Hills Golf Course Business - 616/949-8330 Home - 616/874-7306

POSITIONS AVAILABLE GRAND TRAVERSE RESORT

1. Superintendent - Bear Course

2. Assistant-Superintendent - Resort Course

If interested mail information to:

Grand Traverse Resort P.O. Box 404 Acme, MI 49610

Attn: Jeff Holmes

TENTATIVE MEETING SCHEDULE 1988

March 14	-	Forest Hills Country Club
		Round Table Discussion
April	-	Grand Haven G.C.
May	-	Gull Lake View
June 7	-	Berrien Hills C.C.
July	-	Fishing Trip
August 7	-	Family Picnic
August 29	-	Blythefield C.C. Golf Day
September 20	-	Sunnybrook Country Club
		Annual Meeting
October	-	Gull Lake Country Club
November 5	-	Walnut Hills Country Club
		Fall Party

U.S.G.A. Green Section Conference Blythefield C.C. Thursday, March 10, 1988

Determining Tree Age

Tree species, variety or cultivar	Factor*
Abies concolor Firs	71/2
Acer campestre Maple-common-field	4
Acer nigrum	5
Acer platanoides Maple-Norway	41/2
Acer rubrum Maple-Red-Soft	41/2
Acer saccharinum Maple-Silver	3
Acer saccharum Maple-Sugar-hard	51/2
Aesculus hippocastanum Horse-Chestnut.	8
Aesculus octandra	
Betula nigra Birch-river	
Betula pendula Birch-silver	
Carya ovata Hickory-shagbark	71/2
Fagus grandifolia Beech-American	
Fagus sylvatica Beech-common	
Fraxinus americana Ash-white	5
Fraxinus pennsylvanica Ash-green	
Gymnocladus dioicusCoffee	3
Juglans nigra Black Walnut-Butternut	
Liquidambar styracifluaSweet Gum	
Lirodendron tulipifera	
Picea abies Spruce-Norway	
Picea pungens Glauca Spruce-Canadian-White	
Pinus nigraPine-river	
Pinus resinosa Pine-Norway	

Pinus strobus
Pinus sylvestris
Platanus occidentailis Sycamore
Prunus serotian
Pseudotsuga menziesii
Pyrus calleryanaBradford-Pear3
Quercus alba Oak-White 5
Quercus coccinea Oak-Scarlet
Quercus imbricaria
Quercus palustris
Quercus rubra
Quercus shumardii
Tilia cordata Linden or Basswood
Ulums americana
*Factor x diameter in inches = tree age
Credit: Divots 12/86

CIRCUMFERENCE + BY 3.14 = DIAMETER (AMARA)



PLAYING ON REGULAR OR TEMPORARY GREENS

The agronomy experts at the USGA have studied this subject for many years and have developed some very definite conclusions.

The answer to the question of whether or not to allow play on regular greens through the winter is very difficult to answer precisely because so many variables are involved. These variables include the soil — its physical makeup, its physical properties and its moisture retention qualities; the grass plant — whether it is Poa annua, bentgrass or a combination of the two; play — the amount and duration; and, finally, the weather — its extremes and fluctuations.

The difficultly of answering this question is that any one of these variables can change. In the case of the weather, this change could easily be daily or even hourly. Play at one time may cause no problems, but play even an hour or so later when conditions become unfavorable could cause serious problems to the soil and grass.

The following reasons simply and basically outline the agronomics of it:

(1) If the grass plant is hurt or even worn from wear and tear, at these times there is little or no regenerative growth to replace the injured tissue that has been insulating the plant's critical growing point or crown. The crown is then much more susceptible to dessication, diseases and direct low temperature kill.

(2) In late fall or ealy winter when the frost first enters the ground, the grass blades become frozen and brittle. Traffic at these times will break and crack the stiff and frozen blades, causing a rupturing of the cell walls and disruption of the protoplasm in the cell. This type of injury is sometimes referred to as *winter burn*.

(3) Soil, the medium that determines the performance, success and failure of the green can be severely, perhaps irreversibly, harmed. Traffic on moist soil during these

C & R GRINDING

We specialize in ALL golf course mower repair and sharpening.

FREE Pick-up and Delivery Over 15 Years Experience Open 7 days - All year

Area sales rep. for D & C Distributors (R & R Products)

> 5082 Page Avenue Jackson, Michigan 49201 (517) 764-1182

Member Western Michigan G.C.S.A.

times of the year will result in detrimental soil compaction. Compacted soil brings on many problems.

(4) Play on greens when there is standing water or slush can cause severe problems. Traffic forces this water or slush into more intimate contact with the crown of the grass that is already waterlogged or hydrated. This, then, makes the grass plate much more susceptible to ice damage (from freezing) and low temperature kill.

(5) Some of the most serious types of injury occur to the grass plant and soil when the frost is just going into the ground (in the fall) and when it is just coming out of the ground (in the spring). When this is occurring, traffic on greens will tend to shear off the grass roots underfoot between the soft upper inch or two that thaws out first and the continued frozen soil further down. Besides shearing off the grass roots near the surface, soil compaction can also be accelerated.

(6) With any type of winter injury, whether from snow mold, ball marks, soil compaction, dessication or foot traffic, there is a stronger possibility that Poa annua will fill in the damaged areas. With more Poa annua in greens there is more potential for summer turf problems.

(7) When you have extensive winter play on greens there is usually more spring and fall maintenance work that must be performed to bring greens up to their highest playing potential. Winter play is certainly reflected in the increased maintenance work involved in aerations, topdressings, spikings and overseedings.

We realize that golf, more than ever, is a yearround recreational activity. When putting greens are properly constructed and maintained, and when weather conditions are right, winter play on greens can cause few problems other than a browning of the turf (winter burn.) However, when conditions are not favorable, especially when the frost is just going into the ground in the fall and just coming out of the ground in the spring, major problems occur. If play is allowed on regular greens, the days must be carefully chosen. Someone must make these day-today decisions with the future condition of the course in mind. It should not be kept open or closed simply because a nearby course is open or closed. Each course is an individual problem.

One way to insure against possible problems is to have and to use winter, or alternate greens. These greens should be used the entire winter season or when the conditions for playing the regular greens are unfavorable and injury to them could occur.

CREDIT: Massachusetts Golf Association Newslette Fall 19

GCSAA NEWS

GCSAA GOLF CHAMPIONSHIP IN HOUSTON

Over 400 members of the Golf Course Superintendents Association of America (GCSAA) will gather in Houston, Texas, several days before the organization's annual Conference and Trade Show to compete in the association's golf championship.

The two-day tournament will be played on the TPC Woodlands Course (site of the annual PGA Tour stop in Houston), the Woodlands North course plus the Marsh and Lake courses at Kingwood Country Club.

Many of today's superintendents are avid golfers and their knowledge about the game plays an important part in maintaining their courses at top condition. "You can sympathize better with the golfer when you play," says defending champion Mike Apodoca, golf course superintendent at Raveneaux Country Club in Spring, Texas.

Apodoca won the GCSAA championship title for his second time early in 1987 in Phoenix, Arizona. Does the fact that this year's event is being held near his home course give him any advantage?

"No way - it's more pressure, " Apodoca says. "Not only do I have to worry about my golf game, but my club is hosting the GCSAA Women's tournament so I'll be busy there, too."

For further information, contact Bob Still, Media Relations Manager, GCSAA 913/841-2240.

THE HERO OR THE HEEL

Recently, numerous newspaper articles have appeared concerning the subject of job security. Ford Motor company just settled their union contract with the main issue being job security. It's an important subject because it seems to be very commonplace among businesses to terminate an employee after 20 or more years of service.

This issue of job security is definitely one which we as golf course superintendents (especially in the private sector) can relate to. Let me show you three true examples (names have been changed) which illustrate the point:

1. Rumor has it that John is on the verge of being fired as golf course superintendent at Green Hills C.C. A former employer (also a golf course superintendent) of John's calls him up and asks him if the rumors are true. John approaches the general manager with the question; the general manager assures John that his job is on solid ground. John is fired a week later.

2. This example is an instant replay of #1, except that the superintendent, whose name we'll say is Frank, confronts the greens chairman with the question of his job security. Same thing - the greens chairman guarantees Frank that everything is fine. Frank also is fired a short time later.

3. Bob has been the golf course superintendent at Rolling Knolls C.C. for 22 years. The course has continuously been in excellent shape and has always been one of the better courses in the area. However, Mr. Wrong gets elected to the Board of Directors and has never liked Bob. One weekend, Bob goes out of town and leaves the assistant superintendent in charge. It turns hot and windy and the assistant doen't water the greens. Turf is lost and so is Bob's job. It was just the opportunity Mr. Wrong had been waiting for.

Every golf course superintendent reading this article can relate to the above three examples because they reflect true situations happening repeatedly all over the country. Basically, it gets down to the fact that our jobs as golf course superintendents at private clubs are on a day-today basis, as far as job security. That sounds a little strong, but it's true. In this job of dealing with Mother Nature, you can be a hero one minute and a heel the next. Also, when you are working with 300-600 members, all it takes is one person with power whom you have "rubbed the wrong way" and it's goodbye.

What's the answer? I truly don't know. A good contract written by a lawyer which guarantees job security is a start. I believe that it is has been a part of our profession in the past which has been taken for granted; it's part of the job. However, it shouldn't be. The majority of golf course superintendents are a dedicated, hard working group of individuals who deserve job security. Perhaps the GCSAA could help us on this issue. Also, we should start discussing it on the local levels. Our profession has come a long way in the past decade, with better salaries, benefits and recognition. Let's add better job security to this list.

CREDIT: Heart Beat, Nov. 1987





Introducing the New Toro Grooming Reel for the Riding Greensmaster^{*}.



Toro features allow the Grooming Reel:

*to be raised or lowered easily without losing the depth setting.

*easy, safe engage and disengage.

*durable belt drive for heavy loads.

*grooming blades do not interfere with rollers. *optional grooming reel with wider spacing. *grooming reel retrofits older cutting units.

> SPARTAN DISTRIBUTORS, INC. 487 W. Division Sparta, MI 49345 PH: (616) 887-7301

MOVEMENT OF INSECTICIDE RESIDUES IN TURFGRASS THATCH AND SOIL

H.D. Niemczyk, A. Filary and H. Krueger Department of Entomology Ohio Agricultural Reseach & Development Center The Ohio State University

Formulations of three insecticides were applied on September 12 to 4 replicates of plots 10' by 10' located on an Ohio golf course fairway with 0.75 inches thatch and silt loam soil. The purposes of the experiment was to trace the downward movement of recoverable residues in turfgrass thatch and underlying soil.

Isazofos (Triumph) 4EC and 2% granules, isofenphos (Oftanol) 2 "flowable" and 5% granular were applied at 2 lb. Al/A. Ethoprop (Mocap) 10% granular was applied at 5 lb. Al/A. Liquid treatments were applied with a pressurized sprayer that delivered 4 gal of spray/1000 sq. ft. Granules were applied drop spreader. Immediately after treatment, each plot was hand-irrigated with 200 gal/1000 sq. ft. The test site had no irrigation system but rainfall (including 0.75 inches, 2 days posttreatment) occurred regularly throughout the sampling period. A standard 1.0 inch soil probe was used to obtain smaples of thatch, the first 1.0, inches of soil from each plot at 2, 5, 15, 29, 57, and 91 days posttreatment. Samples were kept frozen at -18°C until analyzed by GLC for recoverable residues.

Analysis showed that 2, 5, 15, and 29 days 97% + of recoverable residues from all treatments were found in the thatch (Table 1). At 57 and 91 days, 90% + of residues were still in the thatch. Mean residues in the first 1.0 inch of soil never exceeded 0.4 ppm. Despite water solubilities of 750, 150, and 20 ppm. for technical ethoprop, isazofos and isofenphos, respectively, immediate posttreatment irrigation and regular rainfall, very little of these insecticides moved into the underlying soil. These results should be of considerable significance in terms of the role of turf-grass thatch in the potential for these materials to leach into groundwater. Thatch is apparently an excellent filter.

 Table 1. Location of residues following application of three insecticides to a golf course fairway. Wooster, Ohio.

 1984. H.D. Niemczyk.

Rate	Sep	otember 14 (2d)		September 27 (15d)			October 11 (29d)		
lb Ai/A	Т	1	2	Т	1	2ª/	Т	1	2
2	0.97	0.008	0.003	0.70	0.004	0.001	0.47	0.002	0.001
2	1.63	0.055	0.004	1.87	0.004	0.001	1.47	0.005	0.001
2	4.08	0.02	0.1	4.17	0.02	0.01	2.66	0.01	0.01
2	7.44	0.13	0.01	6.06	0.07	0.01	4.59	0.06	0.01
5	30.77	0.31	0.06	38.04	0.11	0.23	20.31	0.63	0.01
	Ib Ai/A 2 2 2 2 2	Ib Ai/A T 2 0.97 2 1.63 2 4.08 2 7.44	Ib Ai/A T 1 2 0.97 0.008 2 1.63 0.055 2 4.08 0.02 2 7.44 0.13	Ib Ai/A T 1 2 2 0.97 0.008 0.003 2 1.63 0.055 0.004 2 4.08 0.02 0.1 2 7.44 0.13 0.01	Ib Ai/A T 1 2 T 2 0.97 0.008 0.003 0.70 2 1.63 0.055 0.004 1.87 2 4.08 0.02 0.1 4.17 2 7.44 0.13 0.01 6.06	Ib Ai/A T 1 2 T 1 2 0.97 0.008 0.003 0.70 0.004 2 1.63 0.055 0.004 1.87 0.004 2 4.08 0.02 0.1 4.17 0.02 2 7.44 0.13 0.01 6.06 0.07	Ib Ai/A T 1 2 T 1 2ª/ 2 0.97 0.008 0.003 0.70 0.004 0.001 2 1.63 0.055 0.004 1.87 0.004 0.001 2 4.08 0.02 0.1 4.17 0.02 0.01 2 7.44 0.13 0.01 6.06 0.07 0.01	Ib Ai/A T 1 2 T 1 2ª/ T 2 0.97 0.008 0.003 0.70 0.004 0.001 0.47 2 1.63 0.055 0.004 1.87 0.004 0.001 1.47 2 4.08 0.02 0.1 4.17 0.02 0.01 2.66 2 7.44 0.13 0.01 6.06 0.07 0.01 4.59	Ib Ai/A T 1 2 T 1 2ª/ T 1 2 0.97 0.008 0.003 0.70 0.004 0.001 0.47 0.002 2 1.63 0.055 0.004 1.87 0.004 0.001 1.47 0.005 2 4.08 0.02 0.1 4.17 0.02 0.01 2.66 0.01 2 7.44 0.13 0.01 6.06 0.07 0.01 4.59 0.06

Mean Recoverable Residues (ppm)^a/

Based on separate analysis of samples from each of 4 replicates T = thatch; 1 = first inch of soil; 2 = second inch of soil.

FOUR LINES OF DEFENSE AGAINST "HYPOTHERMIA"

COLD KILLS IN TWO DISTINCT STEPS

STEP ONE: EXPOSURE AND EXHAUSTION

The moment your body begins to *lose heat* faster than it produces it, you are under-going exposure. Two things happen:

- 1. You voluntarily exercise to stay warm.
- 2. Your body makes involuntary adjustments to preserve normal temperature in the vital organs.

Either response drains you energy reserves. The only way to stop the drain is to reduce the degree of exposure...

THE TIME TO PREVENT HYPOTHERMIA IS DURING

THE PERIOD OF EXPOSURE AND GRADUAL EXHAUSTION.

STEP TWO: HYPOHERMIA

If exposure continues until your energy reserves are exhausted:

- 1. Cold reaches the brain, depriving you of judgement and reasoning power. You will not realize this is happening.
- 2. You will lose control of your hands

This is hypothermia. Your internal temperature is sliding downward. Without treatment, this slide leads to stupor, collapse, and death.

YOUR FIRST LINE OF DEFENSE: AVOID EXPOSURE

1. STAY DRY. When clothes get wet, they lose about 90% of their insulating value. Wool loses less; cotton, down, and synthetics lose more.

2. BEWARE THE WIND. A slight breeze carries heat away from bare skin much faster than still air. Wind drives cold air under and through clothing. *Wind refrigerates wet clothes* by evaporating moisture from the surface. WIND MULTIPLIES THE PROBLEMS OF STAYING DRY.

- UNDERSTAND COLD. Most hypothermia cases develop in air temperatures between 30 and 50 degrees. Most outdoorsmen simply can't believe such temperatures can be dangerous. They fatally underestimate the danger of being wet at such temperatures.
 50 degree water is unberably cold. The cold that kills is cold water running down neck and legs, cold water held against the body by sopping clothes, cold water flushing body heat from the surface of the clothes.
 DON'T ASK, "HOW COLD IS THE AIR?" ASK INSTEAD, "HOW COLD IS THE WATER AGAINST MY BODY?"
- USE YOUR CLOTHES. Put on raingear before you get wet. Put on wool clothes before you start shivering.

YOUR SECOND LINE OF DEFENSE: TERMINATE EXPOSURE If you cannot stay dry and warm under existing weather conditions, using the clothes you have with you, *terminate exposure*.

- 1. BE BRAVE ENOUGH TO GIVE UP REACHING THE PEAK OR GETTING THE FISH OR WHATEVER YOU HAD IN MIND.
- 2. Get out of the *wind and rain*. Build a fire. Concentrate on making your camp or bivouac as secure and comfortable as possible.

NEVER IGNORE SHIVERING

Persistent or violent shivering is clear warning that you are on the verge of hypothermia. MAKE CAMP.

FORESTALL EXHAUSTION

Make camp while you still have a reserve of energy. Allow for the fact that exposure greatly reduces your normal endurance.

You may think you are doing fine when the fact that you are exercising is the only thing preventing your going into hypothermia. If exhaustion forces you to stop, however briefly:

- 1. Your rate of body heat production instantly drops by 50% or more.
- 2. Violent, incapacitating shivering may begin immediately.
- 3. You may slip into hypothermia in a matter of minutes.

D & C Distributors 51000 Grand River Wixom, Michigan 48096 (313-349-7779) (800-888-7779)

Michigan's Only Stocking Dealer For R & R PRODUCTS

QUALITY REPLACEMENT PARTS

TORO JACOBSEN HAHN-WESTPOINT CUSHMAN RYAN ROSEMAN RANSOMES MOTT NATIONAL YAZOO FORD EXCEL REEL SHARPENING COMPOUND

CALL US TOLL FREE

800-888-7779

FOR YOUR SUPPLY ITEMS FLAGS — POLES RAKES — CUPS

WE ARE RICO MFG. ONLY DISTRIBUTOR FOR MICHIGAN, OHIO, INDIANA AND ILLINOIS

EXCELLENT QUALITY PERSONALIZED TUBE FLAGS, SOLID FIBERGLASS POLES WITH SOLID IMPREGNATED COLOR, FIBERGLASS RAKE HANDLE, FOAM FILLED TO FLOAT, 14" or 22" RAKE HEAD, PUTTING GREEN FLAGS AND POLES-CUPS

WE ALSO HANDLE LEWIS AND PAR AIDE REPLACEMENT SEATS FOR GOLF CARTS. . .TRACTORS. . .ETC.

(Continued from Page 8)

APPOINT A FOUL-WEATHER LEADER

Make the best-protected member of your party responsible for calling a halt before the least-protected member becomes exhausted or goes into violent shivering.

YOUR THIRD LINE OF DEFENSE: DETECT HYPOTHERMIA

If your party is exposed to wind, cold, and wet, THINK HYPOTHERMIA. Watch yourself and others for symptoms.

- 1. Uncontrollable fits of shivering.
- 2. Vague, slow, slurred speech.
- 3. Memory lapses. Incoherence.
- 4. Immobile, fumbling hands.
- 5. Frequent stumbling. Lurching gait.
- 6. Drowsiness (to sleep is to die.)
- 7. Apparent exhaustion. Inability to get up after a rest.

YOUR FOURTH AND LAST LINE OF DEFENSE: TREATMENT

The victim may deny he's in trouble. Believe the symptoms, not the patient. Even mild symptoms demand immediate, drastic treatment.

- 1. Get the victim out of the wind and rain.
- 2. Strip off all wet clothes.
- 3. If the patient is only mildly impaired:
 - a. Give him warm drinks.
 - b. Get him into dry clothes and a warm sleeping bag. Well-wrapped, warm (not hot) rocks or canteens will hasten recovery.
- 4. If the patient is semi-conscious or worse:
 - a. Try to keep him awake. Give warm drinks.
 - b. Leave him stripped. Put him in a sleeping bag with another person (also stripped). If you have a double sleeping, put the victim between *two* warmth donors. *Skin to skin contact* is the most effective treatment.
- 5. Build a fire to warm the camp.

MECHANICAL TREE TRANSPLANTING ANOTHER PERSPECTIVE by Greg Oltman

During the 1987 season, Williamson Nursery & Associates, Inc. transplanted slightly more than ten thousand trees using mechanical tree spades ranging in size from thirty-six inches to ninety inches. We feel qualified, therefore, to comment on Mr. Beebe's article from the November 1987 **Bull Sheet**, 1987 - The Frenzy of Mechanical Tree Moving.

At first reading, Mr. Beebe's article seems to be a rather general indictment of tree-spade transplanting. Perhaps, however, this is merely the defensive reaction of some one who has often been challenged on the effectiveness and advisability of relocating large trees mechanically. Upon re-analysis, we found that Mr. Beebe does, in fact, cite several legitimate concerns and makes some very valid points.

It is the transplanting of the very large trees (10" + caliper) which, historically, has prompted the greatest controversy. In this area, Mr. Beebe and I agree most entirely. It is seldom possible to successfully transplant trees of this size with tree spades, simply because the largest commercially available spade is only ninety inches in diameter. Transplant failure need not be an absolute, however, if proper preparation techniques are employed. We have found that root-pruning very large trees and leaving them in the ground for a full season helps to moderate transplant shock when the actual move takes place. We perform root-pruning by digging the tree with the spade, but not removing it from the hole. We usually try to dig the tree about six inches smaller than the full "dig" of the ninety-inch spade. Then, when the tree is actually transplanted, we dig a full ninety inches.

In theory and, seemingly, in practice at time of transplanting we are able to capture the new roots that the tree has initiated as a result of the earlier root-pruning.

Even when this method can be used, however, we recommend it only for nursery-grown trees. We recommend very strongly that native trees (or "volunteer trees") not be moved in sizes above seven or eight inches of caliper. Without any history of transplanting, a tree larger than seven inches caliper will almost certainly not survive. This is due to the extremely random nature of the root system of a tree which has never been transplanted. It is likely that as little as three percent of the feeder root system will be captured in the transplanting of a nine or ten inch caliper native seedling tree. There is simply no way that this minute percentage of the root system can support the canopy, even canopy reduction by pruning.

In addition to pre-transplant preparation, post-transplant maintenance is absolutely imperative. This is true not only on extremely large specimens, but on intermediate size material as well. It may take up to five growing seasons for a transplanted tree to become entirely self-sufficient again. In light of the temperature and moisture extremes which are a common part of our weather pattern, this length of time should not be surprising. We sometimes tend to think that after one or two seasons the transplanted tree is "over the hump." This can be a critical mistake, and one which can lead to that one hundred percent mortality Mr. Beebe mentions in his article.

(Continued from Page 9)

There are numerous other factors which enter into our decision whether to transplant a tree: species, the tree's current location, the conditions found at the new site, time of year, expected follow-up maintenance by the client, etc. For our own reputation, the good of the client, and the reputation of tree-spades in general, it is often best to say a polite "Thanks, but no thanks."

We share with Mr. Beebe the concern that tree-spades are portrayed as miracle machines. For this image we lay a large part of the blame at the doors of the manufacturers. Tree-spades can be a very effective and efficient means of transplanting trees, but they are not capable of transmuting the laws of Nature. There will always be people who use tree-spades beyond reasonable limits, and, therefore, there will always be those individuals who condemn all tree-spade transplanting. This is unfortunate, for we see properly performed tree-spade transplanting as an increasingly important part of the landscape industry.

We don't expect that we will convert everyone to our way of thinking, but given the opportunity, we remain convinced that we will win far more than we will lose.

1987 SEED CROP UPDATE

by M.E. Sommer

The first of August I traveled through Oregon, Washington and Idaho observing the production stages of the seed fields. Weather plays a large part in the outcome of the crop as in any agricultural commodity. Rainfall is especially important as most of the acreage is dryland farmed. The normal (if this word can be used in our profession!) winter rains were on the light side and thus the plants and eventual seed yields reflect this. Across the board fields are on the light side, and even though acreage is up, so is demand so there will be no abundance of seed on the market this season.

Following is a highlight of the cool-season grasses produced in the Pacific Northwest.

Bentgrass - At this writing these are still in the field, but in general, it looks like a good crop and the supply should be more plentiful than past years. Penncross, Penneagle and the new release, Pennlinks (which had the experimental #PSU-126 in the lst 10 + years of testing), will be the major creeping varieties used on putting greens in our area. Colonial varieties, such as Exeter appear to be in adequate quantity for such areas as approaches, collars, tees and fairways.

Kentucky Bluegrass - These have just been harvested (Continued on Page 12)





Golf's Premier Irrigation Control System

Stadium Course, PGA West

RAIN BIRD

Repeatedly the choice of the world's leading architects and superintendents, MAXI® III from Rain Bird is recognized as golf course irrigation's most exciting and versatile

computerized control system.

Sophisticated. Reliable. Powerful. MAXI® III offers state-of-the-art irrigation technology. An IBM computer, too. Not to mention the ability to handle a wide range of important functions. Lighting—security—and a host of other necessary operations.

Legends in the making—the great golf courses of tomorrow are being built today. And MAXI® III is there!



Controllers. Rotors. 50 years of golf course irrigation experience.

Rain Bird — the choice from coast to coast



Michigan TOLL FREE 800/544-9219

(Continued from page 10)

and the crop is off 20% with a few of the varieties even lighter. Look for prices to remain level with last year or a slight increase with the elite varieties.

Turf-Type Tall Fescue - Of the first to be harvested these looked great until 2" of rain in one day hit the crop when it was swatched and drying to be combined. All the numbers are not in, but it appears to be 20-30% reduction in yield over what was projected prior to this rain. The average rainfall in July is a trace so that 2" for that time of year was a shocker and shows what Mother Nature can do and how dependent the farmer is on her! Anyway, acreage is up, but there won't be an abundance of seed on the market place.

Perennial Ryegrass - Similar to the fescues, it looked strong early, then that rain took a bumper crop to a below

average crop. Due to their fast germination and establishment, this is the most used grass in our area. Fall overseeding to protect that Bermuda base and provide winter color is done by golf courses in one degree or another throughout Southern California. Availability should be fine through the fall, but if demand is higher than last year it could be tight next spring. So if you have construction plans for winter/spring you may want to look ahead to be assured of getting the quality variety you desire.

Summary - In general the crop is on the light side, so prices will hold or be stronger than the past year. Availability through the fall and into winter should be adequate. And as usual in using good quality seed with a high purity and germination you will achieve the results that will make you proud of a job well done!

CREDIT: Divot News, GCSA-Southern California September, 1987

LIABILITY INSURANCE: COVERAGES AND EXCLUSIONS

by John L. Dana

Have you ever wondered what liability insurance protection there is for you—the golf course superintendent?

In a properly designed insurance program, employees of an operation should be included for liability coverages as "additional insureds." This means that they would be included in the insurance protection afforded to the club for claims arising out of *Bodily Injury* or *Property Damage*. For example, there would be protection for the superintendent if he backed a tractor into a Mercedes Benz in the club parking area and action was brought against him personally. Similarly, if the brakes failed on the tractor and he injured a club member and action was brought against him individually, he would be protected under the policy.

Unfortunately, this protection is not available under the circumstances. Remember the *Time Magazine* issue last summer which had as its cover story "Sorry, America, Your Insurance has been Cancelled?" After years and years of a true buyer's market during which extremely broad coverages were available at inexpensive prices, the insurance industry both tightened up their coverages and increased prices substantially. This change in the industry's approach has affected virtually all business entities in all areas of their insurance coverage.

An area of coverage for a country club that has not been very broad during the past few years has now become almost non-existent. This is the area of pollution coverage or environmental impairment. Environmental risks arise from "the discharge, disposal, release, or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or grease, waste materials or other irritants, contaminants or pollutants, into or upon the land, the atmosphere or any water course or body of water." Many common hazards of a golf course operation in the area of environmental impairment are created by the need for using chemicals. This use includes mixing, applying, storing, and disposing of toxic materials. Other hazards not often thought of are swimming pools, underground tanks, PCBs, asbestos and aquatic exposures."

Prior to 1973 the standard General Liability Insurance policy covered Bodily Injury or Property Damage to third parties arising from accidents of any kind. The General Liability form was revised in 1973 to exclude coverage for damage or injury arising from seepage and other forms of gradual or "nonsudden" pollution. (Coverage was still provided for "sudden and accidental" pollution.)

Court decisions of the past few years have greatly blurred the distinction between gradual pollution and sudden and accidental pollution. This liberal legal environment pushed the insurance companies to adopt the use of a



new, absolute pollution exclusion. Under the new exclusion there is no insurance coverage even if the Bodily Injury or Property Damage is sudden and accidental. There is coverage only if a claim arises out of what is known as a hostile fire. A hostile fire is one which becomes uncontrollable or breaks out from where it was intended to be. As stated earlier, what was previously very limited coverage for claims arising out of pollution (in a broad sense) has now evolved into virtually no coverage.

What are the ramifications of this change in pollution coverage for a country club or golf course operation and the golf course superintendent? From the superintendent's perspective, it should not be a cause for panic and concern over the exposure to your personal assets. In almost all instances there is an employer-employee relationship between the superintendent and the country club or golf course. This establishes a situation where the superintendent is acting as an agent of the employer and court law has precedents stating that an employer can be held liable for the acts of their agents. In other words, if a pollution incident occurs, chances are your employer is going to be required to get involved in whatever action is taken against you and the club. However, if the pollution incident arises out of any gross or willful misconduct by him or his applicators (who are his agents), the superintendent should not expect protection from his employer.

Of course safety is important in any well-managed business, but when one is operating in an area where insurance is not available to cushion the financial impact of a mistake or loss, safety should be of the highest priority. This is not the place for a discussion of what constitutes safe use of toxic substances, but it seems to be appropriate to emphasize how important it is because of the absence of insurance protection.

Remember that at one time or another, all kinds of insurance were new. For example, it was once highly innovative to insure medical or legal malpractice - now they are run-of-the-mill coverages. Eventually, environmental impairment insurance should become available to the club industry at a reasonable price. At this stage the insurability of toxic waste users or generators is a relatively new concept. Once loss experience is compiled and analyzed, underwriters will be able to evaluate the better risk and offer coverage.

CREDIT: Met GCSA



TIME CONTROL MAKES CENTS

Thirteen tips for saving one of your most important commodities - time.

Editorial Note: This is an interesting article about time control that not only applies to florists, but to the owner or manager of any facet of horticulture in general.

The following points show how florists can put their time to profitable use.

1. Set Aside Non-Urgent Tasks until the necessary work is out of the way. Routine should never be deliberately postponed.

2. Assign Tasks To Employees which can be done equally well by both the manager and employee. This frees the manager or owner for more important procedures.

Too often the employer assumes countless chores which others could do. Usually it is because he or she is eager to see a job done quickly and efficiently. This wastes the manager's more valuable time.

3. Group Small, Detailed, But Necessary, Tasks into one daily time segment. These could be tasks like order processing, watering flower inventory. This helps complete all tasks with minimum time. Each chore of this type invariably requires some starting time.

(Continued on Page 14)



(Continued from Page 13)

By doing tasks in sequence, starting will be faster. Also, consider an entire day's work. Then group similar tasks together. This saves more time.

4. Allot Time For Each Business Person routinely met, like salespeople. Inform him or her well in advance as to the amount of this time. This technique assures less time being wasted superficially.

After six months this habit will become automatic and almost every business contact will accept it as a routine matter.

5. Screening Customers also pays off in many ways. If an employee can service a customer's needs, allow him or her to do so. This can be a major saver for the manager. However, screening should be done carefully. Receiving an important person improperly can be costly.

6. Spend The Last 15 Minutes Of Each Day Planning the next day's work. Experienced flower shop owners have found that this planning time can save one to three hours on the following day. Deciding where to begin becomes a less time-consuming decision.

7. Schedule Rest Breaks. It would appear that time is saved when breaks are taken only as needed. Studies, however, have shown that more time will be wasted when breaks aren't taken on a schedule. A regular schedule assures proper budgeting of rest periods.

8. Increased Use Of Office Machines may also be time saving. There are often areas in a business where machine use has been overlooked. For example, writing out notes may require more time than dictating information into a tape recorder. Wire service and business computers should be utilized whenever possible.

9. Do A Task Immediately and be rid of it. Postponing unpleasant or difficult chores is a habit to eliminate. Every minute spent delaying action is days wasted. *This is rated the number one timer saver in business today.*

10. Spend Time To Buy Time. If ten hours spent studying a new method can result in a 30-minute reduction each day, then 130 hours will be gained during the year.

This can be used to streamline many tasks in the design room.

11. Keep Items Needed For Routine Work Close at hand. An efficient office and design room can save both shoe leather and hours.

12. Teach Employees To Practice Time Control in their work, like keeping track of time spent on each design. The total production will gain with each person's increased efficiency. It is also beneficial to record time spent on sales, deliveries and management.

13. Be Skeptical about any procedure billed as the best way of doing something. Usually an easier, time-saving procedure can be discovered for almost anything.

Recognizing the need for budgeting time is the big step toward achieving better time control. When an owner or manager accepts this fact, the ideas will come easily.

Ben Franklin said, "Remember that time is money." He was right.

Resource: Ernest W. Fair, Florist's Review Courtesy of Orange County Green News and Foreground

PLANNING FOR YOUR FINANCIAL FUTURE

by Thomas A. Choate, CLU Charter Financial Consultant

History:

Financial Planning is a relatively new industry that has enjoyed rapid growth in the 1980's. Rapidly rising interest rates in the late 70's and early 80's forced individuals to seek out higher interest rates than the banks were offering. The now-popular money market accounts were established initially by mutual fund companies, but banks were also eventually allowed to offer them.

Next came new kinds of life insurance which offered current money market rates on the case value in the policy. New mutual funds were being introduced to invest in every possible segment of the equities or the fixed income markets. Because of the widening choice of insurance and investment vehicles, (ranging from investing in tax free bonds funds to gold funds to international equity funds), the industry of Financial Planning was born to help people cope with the choices. Everyone's situation is different, and something that works for one family may be totally wrong for another. For those who like definitions, Financial Planning is simply an organized method for accumulating sufficient resources to achieve specific, established goals in the future.

What Comprises a Financial Plan?

There are several components of a personalized financial plan; probably the most important is the establishment of specific goals. Examples would be to accumulate enough capital to put your children through college, to make a down-payment on a home, to have a vacation reserve or to plan for a comfortable retirement. The important thing is to be specific and assign dollar goals to be achieved with certain time frames. It is not enough to say that you would like to have as much money as possible for retirement; you must set a dollar figure as a target and work toward that target on an annual, systematic basis.

IMAGINE A GOLF COL	JRSE WITHOUT TREES
* + 0	GRAND
	RAPIDS
* *	TREE, INC.
XX	P AMERICA GREEN
	SW G.R. 49504
(616) 2	451-4481
PROTECT YOUR AVAILA	ABLE TREES THROUGH
Proper Care	Distributors for:
Lightening Protection Large Tree Pruning	Mauget Tree Injectors
Tree Removals	Terra-Sorb Moisturizer
Mauget Tree Injectors con	
Bronze Birch Borer, D pines, Cytospora Can	ker on Spruce and
nutrient deficiencies.	BOD Kelly
	Home:(616) 453-6652
	Home:(616) 453-6652
De to c	Home:(616) 453-6652
Parmenter E	Home:(616) 453-6652
Parmenter E.	Andro CA
/	Andre D
/	Andro CA
/	Andre D
STOCKING THESE FINE PROP	Andre 5 DUCTS FOR PROMPT SERVICE
STOCKING THESE FINE PROP	Andre S DUCTS FOR PROMPT SERVICE PBI GORDON
STOCKING THESE FINE PRO STANDARD GOLF PAR AIDE	Andre DUCTS FOR PROMPT SERVICE PBI GORDON AQUATROLS
STOCKING THESE FINE PRO STANDARD GOLF PAR AIDE DU PONT NOR AM RHONE-POULENC	Andre Ducts for prompt service pbi gordon aquatrols aquashade w.a. cleary nelson- rainbird
STOCKING THESE FINE PRO STANDARD GOLF PAR AIDE DU PONT NOR AM	Andre Ducts for prompt service pbi gordon aquatrols aquashade w.a. cleary
STOCKING THESE FINE PRO STANDARD GOLF PAR AIDE DU PONT NOR AM RHONE-POULENC	Andre D DUCTS FOR PROMPT SERVICE PBI GORDON AQUATROLS AQUASHADE W.A. CLEARY NELSON- RAINBIRD PVC PIPE & FITTINGS
STOCKING THESE FINE PRO STANDARD GOLF PAR AIDE DU PONT NOR AM RHONE-POULENC DACONIL 2787 WEST MICHIGAN DISTRIBUTORS O	Andre D DUCTS FOR PROMPT SERVICE PBI GORDON AQUATROLS AQUASHADE W.A. CLEARY NELSON- RAINBIRD PVC PIPE & FITTINGS

		C	CANDARD SAND CORPORATION DRESSING SAND 2150
USA Sieve 20 30 40 50 60 70 100 140 200	MM .84 .60 .42 .30 .25 .21 .15 .10 .07	% Retained .0 .6 4.6 28.5 23.6 24.3 17.6 .8 .0	 Meets USGA specfications Consistent Quality Lab Reports with Every Shipment Michigan's Largest Topdressing Sand Supplier
270 PAN	.05	.0	Standard Sand Corporation

> Standard Sand Corporation P.O. Box 290 Grand Haven, Michigan 49417 Contact: Roy Hanson (616) 842-5180



3400 Jefferson S.E., Grand Rapids, MI 49508 (616) 452-3373

(Continued from Page 14)

Creating and following a budget is also very important in financial planning. You simply cannot start a savings or investment program without knowing what it costs you to live and what is left over each month after the bills are paid. Most people say that there is nothing left to save after the bills are paid. Why not try paying yourself first, not last. Put something away for yourself, then pay the bills. A budget is also an excellent way to reveal where any problem areas might lie. Once you know there is a problem, you can take action, but if you don't prepare a budget, you may never know there is a problem.

Income tax planning is another important factor. First, a Financial Planner should determine his client's personal income tax bracket. What, if anything, can be done to lower that bracket? A review of a client's prior tax returns will reveal how much he is claiming in interest and dividends and whether it might be wise for him to consider tax free municipal bonds instead. Some sort of pension or profit sharing plan might be considered to reduce currently taxable income.

Hand in hand with tax planning is investment planning. The investments that a person owns should be chosen with income tax considerations in mind. Someone in the highest income tax bracket should probably not invest large sums in taxable money market funds because so much is lost to taxes. On the other hand, there is a point below which it does not make sense for an investor to buy tax free bonds, and that point is determined by considering an investor's tax bracket in relation to interest rates available in the marketplace. Liquidity is also an important investment consideration, and it refers to how quickly an investment can be converted to cash. Some investments are much more liquid than others. For instance, real estate is not considered liquid because it is not readily convertible to cash. It takes time to sell, and there are expenses to be considered. On the other hand, a mutual fund invested in stocks or bonds can be converted to cash overnight, so it has a high degree of liquidity.

Insurance planning is also crucial, because it not only includes life insurance, but health insurance, medical insurance and property and casualty insurance. The various fields of insurance are changing as rapidly as investments, and it is critical not to overlook the effect of a major illness or the premature death of a major breadwinner. What is the right kind of insurance to buy, and how much is enough? These are difficult questions to answer without the help of a trained trusted advisor.

Estate planning is the last major component of financial planning. This usually involves having a will drawn or updated and reviewing the ownership of asets. It is not always a good idea to put everything you own into joint name with a spouse, parent, brother or sister. It is quite often better to keep certain assets in separate names,

(Continued on Page 19)



Tired of the high cost of maintaining your vehicles? CHECK OUT THE HIJET!



- * Cut-a-way
- * Full cab with guard bars
- * Full cab with steel doors
- * Tipper with full cab and guard bars
- * Tipper with full cab and steel doors
- * Lift pick tipper with steel doors
- * People mover
- * Security patrol unit

PFEIFFER L/M DAIHATSU

2424 28th Street, S.E. Grand Rapids, MI 49508 Tom Elliott (616) 949-7800



(Continued from Page 17)

such as inheritances, and to leave them to a surviving spouse by will rather than to count on the rules of joint tenancy.

The Four Cornerstones:

In applying the above components of financial planning, I like to allocate assets in accordance with The Four Cornerstone Philosophy that I learned during my years with Investors Diversified Services. This is another way of saying, "Dont' keep all your eggs in one basket." When I review a prospective client's portfolio, I look to see if assets are properly allocated within the four categories of Cash Reserves, Insurance Protection, Fixed Assets and Equity Asets.

A Cash Reserve is money in the bank or a money market account that can be withdrawn without penalty of loss of principal regardless of what is happening with interest rates or the stock market. Most financial planners would recommend having the equivalent of three to six months after-tax income in this type of an account to cover most short term emergencies.

Insurance Protection means having the right kind and amount of insurance to cover risks that you can't afford to cover yourself. If your family could not go on without your income, then you need life insurance. If you are injured and can't work, you need disability insurance to cover your lost income and medical insurance to cover



TURF CHEMICALS INC. 1011 E. Main P.O. Box 451 Owosso, Michigan 48867

Office: (517) 725-7145

FOR ALL OF YOUR FERTILIZER, CHEMICAL AND GRASS SEED NEEDS EXPERIENCED, DEPENDABLE PEOPLE TO SERVE YOU the hospital and doctor bills. The problem is to figure out what kind of insurance is the best for your own situation.

Fixed Assets are assets that are invested for a fixed period of time and at a fixed interest rate. A certificate of deposit is a good example because you know how much is invested, for how long and at what rate. When the CD matures, you know exactly what you are going to receive, and there should be no surprises other than what the new rate will be if you wish to renew your CD.

Equity Assets, such as real estate or common stocks, can go up and down in value. At any given point in time, these assets may be worth more or less than what you paid for them, so it is obviously not a good idea to have all your eggs in this basket. It is very important to have a good mix of assets in your portfolio so as to avoid the problems that plague people who do not diversify their assets.

Hopefully, this short primer in Financial Planning will prompt you to call a planner if you feel uncertain about your financial future in this current environment.



Association of America 1617 St. Andrews Drive Lawrence, KS 66046-9990

Nothing cuts like the Ransomes 5 gang reel team



Fast-cutting, diesel-powered, all-hydraulic systems save time and money.

Motor 350D





"Kind of excited about that birdie, eh Fred?"



"Why aren't any of your putts worth \$75,000?"

Introducing a new benefit from Chipco[®] 26019... Chipco[®] 26019 FLO

RHÔNE POULENC INC. AGROCHEMICAL DIVISION

P.O. Box 398 Romulus, MI 48174-0398 (313) 753-3392

BOB DUGAN CHIPCO® SALES REPRESENTATIVE







Scientists just spent three years teaching a gorilla to hit a golf ball. They were so proud of their accomplishment that they held a press conference. At a country club, with the television cameras and press photographers all around, the gorilla swung and hit the ball a magnificent 280 yards, and it landed within three feet of the cup. Everyone cheered, then gathered in anticipation as the gorilla again lined up to the ball, pulled the club back, and hit the ball another 280 yards.



The proof is in the putting.

The Greens King[®] IV with the revolutionary new Turf Groomer[™] greens conditioner has no equal for producing faster, truer greens, *without* lowering height of cut. This unique,

patented greens care system, a Jacobsen exclusive, concentrates on troublesome thatch and horizontal runners that can slow down putting, or even throw off putting accuracy.

The front roller "puckers up" horizontal runners and plant leaves, readying them for clipping.

Then, the powered knife blades



Exclusive roller design features bevelled edges to "pucker-up" horizontal runners.



The knife blades rotate through slots in the front rollers, slicing horizontal runners before they lie down.

0.00

The horizontal reel follows closely behind to clip grass while it's standing straight, for faster, truer greens without lowering height of cut.

rotate *through* the slots in the front roller, cutting horizontal runners and removing thatch that can choke a green to death.

The reel follows closely behind, neatly cutting the grass while it's still standing straight and true.

The result: Faster, truer putting and healthier, hardier greens, ready for play. And, you get all this

> MILLER WEST, INC. 274 Mart Street S.W. Grand Rapids, MI 49508 (616)241-4481



Jacobsen Distributor to arrange a free demonstration. And, put this revolutionary new greens care system to the test on your own proving ground.

Finance plans available. Jacobsen Division of Textron Inc., Racine, WI 53403. Telex: 264428. Greens King and Turf Groomer are trademarks of Jacobsen Division of Textron.



Jacobsen Division of Textron Inc.

There is an Aerifying Alternative



CoreMaster. Your <u>new</u> aeration answer. Move forward (not backwards!) with CoreMaster.

Great news for golf course superintendents in charge of greens, tees and fairways, and turf managers for athletic fields (football, baseball, soccer), and sport turf grass. It's CoreMaster 12, the world's finest hollow core aeration system, backed by five years of technology, engineering and experience by the professionals at GreenCare International.

For the first time ever, CoreMaster enables your turt grass staff to improve aeration methods, speed compaction. relief and thatch control with a built-in variable depth and pattern control system, and the strongest power source

CoreMaster is the most innovative and advanced hollow core aeration system on the market today. Hard working, fast and versatile on all natural furf grass surfaces, CoreMaster aerates easily and efficiently. The result stimulates natural furf growth, insuring a healthier, safer, and more beautiful grass surface.

Put these CoreMaster advantages to work on your field and enjoy the benefits of features like these

I fastest capacity ever and safest

'WESTERN VIEWS'

6442 E. Encantado Ct., N.E.

Rockford, MI 49341

 patented mechanical simplicity – fewer moving parts
 low mainten-

- ance and great reliability — built to last!
- touch control for coring depths and patterns with several tine sizes
- I new state of the art "quadra-tine" system, never before available
- highest efficiencies by rapid change, a totally flexible system

 additional attachments, verticutting, seeding, core pick up systems and more

Be the first, find out

more about CoreMaster, the best answer today to meet your turf grass aeration needs.



I want to go forward today

Mali to: GREENCARE

18691 Plumoia Street Fountain Valley, CA 92708 Phone. (714) 968-8085 Please have a GreenCare distributor contact me about Coremaster I'd like to arrange a test here at my location

Mail to authorized Greencare distributor

Lawn Equipment Service & Sales

151 N. PERRY PONTIAC, MICHIGAN 48058 (313) 858-7700

Bulk Rate U.S. Postage PAID Permit #6 Rockford, MI

Dr. Richard E. Chapin MSULLibraries Mich. State University East Lansing, MI 48823