ACTI-DIONE® TURF DISEASE CONTROL MAKES THEM HAPPY.

ITS ECONOMY MAKES ME HAPPY.

Sure the players are happy with the course. The turf is alive and healthy. Free of most turf diseases. That's because of a management program using Acti-dione fungicide. Acti-dione has an unmatched 25-year proven record for controlling turf diseases.

And, Acti-dione is the most economical fungicide for an all year turf disease control program on tees, greens and fairways. That's mighty important with today's tight maintenance budgets that just don't seem to keep up with increasing costs.

Acti-dione has been the first choice fungicide of golf superintendents for over 25 years. Because it works. Because it's economical.

TUCO

Division of The Upjohn Company

C-2908

Write 116 on reader service card

Second of a series

"Here are five important advantages of granular fungicides the bag won't tell you..."

Dr. Milton Kageyama
Program Mgr.,
Chemical Development

1 Product flexibility

"Whatever your fungicide needs, chances are Scotts has the products to answer them. You can choose from a selection of straight fungicides or from products that combine fungicides and fertilizers for both feeding and prevention/control.

"With such built-in adaptability, you can design an exact turfcare program for your course."

Straight Fungicides	Fertilizer/ Fungicide Combinations	Active Ingredient(s)
Systemic Fungicide	H.D. Fertilizer Plus DSB Fungicide	Topsin-M
Broad Spectrum Fungicide	Fertilizer Plus Fungicide	Thiram & PMA
101V Broad Spectrum Fungicide	Fertilizer Plus 101 Broad Spectrum Fungicide	Daconil
None	FFII	PCNB
Fungicide II	None	Chloroneb
Fungicide III	None	Dyrene
Fungicide VI	None	RP26019

2 Improved convenience

"Applying fungicides can be easy or complicated. It all depends on the type of product you use and the time, equipment and manpower you're willing to invest. Ideally, you want a product that requires minimal preparation, is fast and easy to apply and, most of all, effective.

"A granular fungicide requires no mixing . . . just pour it into the spreader, adjust to the proper setting and go. Leftover material won't be a problem . . . simply return it to the bag, with little cleanup or waste. And one man can normally do the job with minimal instruction, in less time than with liquid applications.

"Also, granular fungicides can be applied: 1) when the ground is too soft to support heavy spray equipment; 2) for spot control before a big tournament, and 3) during cold weather when sprays are difficult, if not impossible, to use."

3 The cost factor

"How much does your present application method cost? It's wise to know. You could be wasting hundreds of dollars each year.

"Although granular fungicides usually appear to be more expensive than their liquid counterparts, some significant related costs should be considered before a final buying decision is made:

- Cost of equipment
- Gasoline consumption rates
- Water consumption rates
- Costs of equipment repair and maintenance
- Manhours involved in preparation, treatment and cleanup

"Labor costs will vary according to your method, location and equipment used (spray tank, boom, hose, gun, pump and nozzles vs. granular spreaders of various sizes) for application. However, application of granular fungicides requires only one person with nothing more complicated than a spreader. And, in general, granular application requires less time than liquid.

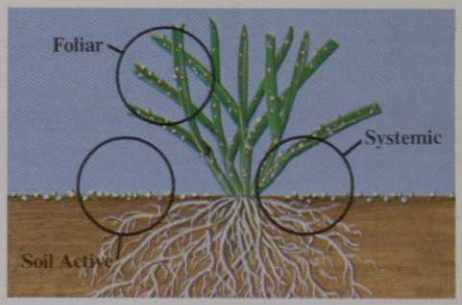
"The bottom line is this: Material costs are only part of the total picture."

	Application Methods	
Cost Factors	Spray	Granular
Equipment	●	●
Repair & Maintenance	●	●
Material	●	●
Labor	●	●
Water	●	
Gasoline	●	

● costs incurred with specific application method

4 Three-way protection

"The best way to fight disease is to prevent it from ever starting. The active ingredients in Scotts fungicides provide control through one of three modes of action: 1) *Foliar contacts* give moist leaf blades a protective coating to fight against fungi; 2) *Soil-active fungicides* control diseases at ground level by retarding fungal growth in the thatch and soil areas, and, 3) *Systemics* protect the plant from within as they are absorbed into its system through the roots and foliage.



"No matter how a disease may spread, you can control it or prevent it with a granular fungicide tailored for the particular problem. With that in mind, Scotts is working to give you the most thorough disease defense possible."

5 Proven performance

"Each product is formulated, tested, reformulated and retested countless times before it goes to market. Not only has it passed the rigid tests at research headquarters, but also those at five other Scotts research stations and many other sites, including golf courses, across the country

. . . under many different kinds of conditions. All done so you know you'll get the results you want, when you need them."

Your Scotts Tech Rep has the training and experience to help you maximize the efficiency of your disease control program. Call him today.

Scotts ProTurf

Stan Bockoski is the Turf Sales Manager for Kenney Machinery Corporation.

Having a parts manager that has been around and knows the business is essential. William Tardy fills that position at Indiana Equipment Company in Indianapolis.

Specific training sessions on various pieces of equipment is viewed as a necessary service.

Robert A. Zwart is President of Indiana Equipment Company.

into the baliwick of a distributor. He has made it his career and his success rides on how well he, and his salesmen, sell. Quality merchandise plays an important role in the continued success of a distributor. People generally will not get themselves 'took' more than once. A manufacturer who makes shoddy equipment, or equipment that does not do what he says it will, will not last long among people who demand equipment that will do the job right and keep on doing it with a minimum of downtime.

"You have to know when to . . ."

That the distributor must be a gambler has never been more true, considering the extreme fluctuation in interest rates that we have recently seen. The ideal situation for a distributor would be for everyone who is going to purchase equipment to come in with their orders all at once. The distributor could then go to the manufacturers with his order and run everything through the system at once. But, as one distributor put it, "If it were that easy, everyone would be in the business."

Most distributors are tied in with the prime interest rate. If it goes up, they must pay more; therefore their prices must go up. How does it spiral? If prime is at 20 percent, those who intend to stay in business must charge at least 15 to 20 percent more to pay overhead and make a profit. And as Earl Butz, former Secretary of Agriculture said, "Profit is not a four-letter word." It is necessary for a business to stay in business. Right away, we're looking at a 40, or more, percent mark-up on an already expensive piece of equipment.

Just because the prime is 20 percent doesn't mean that the distributor is going to get even that good of a rate. Prime is what banks offer their preferred customers. Most distributors must borrow money at two or three points over that. Manufacturers are looking at tight money also. Inflation has escalated to the point that it feels like a mean dog taking a chunk out of the side that your wallet is on.

Salesmanship

A professional turf salesman differs in almost every respect from an over-the-counter salesman. First of

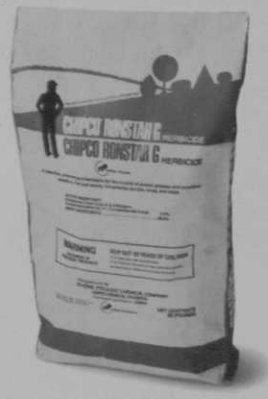
Continues on page 34

IN 4 YEARS OF TESTING, NOTHING EVEN CAME CLOSE TO CHIPCO® RONSTAR® G FOR GOOSEGRASS CONTROL.*

INTERVAL	CHIPCO® RONSTAR® G	BALAN	DACTHAL	BETASAN
101-150 days	94%	61%	45%	37%

The only turf care professionals who still think goosegrass is hard to control are the ones who haven't tried Chipco Ronstar G herbicide yet. The ones who have tried it will tell you it does a great job, even 200 days after application. And that it's effective against crabgrass and poa annua, too.

Got a goosegrass problem? Get the most effective, longest lasting pre-emergent goosegrass herbicide there is: Chipco Ronstar G. Rhône Poulenc Chemical Company Agro-chemical Division, Rhône Poulenc Inc. Monmouth Junction, New Jersey 08852.



RHÔNE·POULENC

Please read label carefully, and use only as directed.

*In field trials conducted from 1973 to 1977. • Balan is a registered trademark of Elanco Products Company • Dacthal is a registered trademark of Diamond Shamrock • Betasan is a registered trademark of Stauffer Chemical Co.

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Coverage, frequency and application rates are criteria for success.

Fertigation of turfgrass—will it work for you?

By George L. Ratledge, Sales and Marketing Manager, Inject-O-Meter Mfg. Company, Inc.

More and more turfgrass managers are finding that a method of applying fertilizers used extensively in the irrigated agriculture industry, can also be very practical and beneficial in the turf industry.

For over 20 years, irrigation farmers have been applying their fertilizers and some chemicals through the irrigation water. The same system used to apply water can be used to apply fertilizers uniformly, and with accuracy, through any well-maintained irrigation system. The same advantages and benefits are being realized by more and more responsible turf managers today.

Many people are apprehensive about further investigation of the fertigation concept because it can seem complicated. This is a typical reaction to a new way of doing things, when, to most people, the old way seems to be very adequate. In most cases, it is just a matter of re-adjusting thinking from using dry materials to working with liquids. The turf will still require the same amount of nutrients but calculations would be done in liquid measurements instead of dry.

That fertigation will not work for someone is the exception rather than the rule. Fertigation will work only on a limited basis for some, while others may be able to engage in a total program to eliminate labor and costs related to other methods of application.

Will it work for you? Check the following and answer the questions as they apply to your situation:

The sprinkler system should provide coverage that you are happy with.

Labor and equipment required for current program

➨Calculate the labor and equipment costs you currently have for application of fertilizers.

➨How effective is your fertilizer program?

➨Are you satisfied with the results?

Irrigation/sprinkler system

➨Is the system programmed or designed to apply approximately the same amount of water on all areas?

➨Are you getting the uniformity you want?

➨Are you confident that your sprinkler system is getting the right amount of water in the right places?

NOTE: *Systems programmed for less water in some areas will normally require less fertilizer to be applied in that area. Example: 1) Compacted area with run-off potential will require less fertilizers until compaction problems are resolved. 2) Sandy areas may require more water because of the high absorption rate. These areas will also require more fertilizer because of leaching tendencies.*

Fertilizers

➨Figure the cost of fertilizer currently used.

➨What are your storage and handling costs?

➨How much is lost through leaching or other sources?

➨Is it effective immediately after you apply it?

➨How do you determine how much to apply at any one time - to last how long?

Fertigation will work for you if:

➨You are a concerned and responsible Turf Grass Manager.

➨Your sprinkler/irrigation system is providing you with the type of coverage you are happy with.

NOTE: *Fertilizer distribution is going to be only as effective as the water distribution.*

➨You select a reliable source to counsel you on:

a) Type of liquid fertilizers best recommended for your grass, soil and climatic conditions.

b) Frequency of application.

c) Amount of fertilizers needed per application.

Benefits that are possible through fertigation:

➨Reduces significantly the costs of labor and machinery required for dry fertilizer application.

➨Extends the usefullness of the sprinkler system.

➨Storage and handling of liquid fertilizers are often made easier and less complicated.
➨Water and fertilizer mixed together often allows greater use efficiency of the fertilizer. No waiting for rain or water to desolve dry particles.
➨Apply only as much fertilizer as the plant will use for a specific period of time. More frequent applications of nitrogen at lesser rates have indicated less loss of nitrogen and greater use efficiency.
➨No equipment application restrictions - if your sprinkler system can be operated, you can inject and apply fertilizers when you want. Some are programmed to inject fertilizers at night when conditions are more favorable.

On many golf courses, especially in the more arid states of the Southwest, it's usually safe to say that "We don't want fertilizer where we can't get water to it." While this statement will not apply to all situations, most sprinkler systems are designed to give coverage to important areas of the course. Others, that are partially irrigated, would naturally be restricted in the effectiveness that could be achieved.

Contrary to a lot of thinking, it isn't necessary to achieve an absolute mix ratio of irrigation water and fertilizer on the turf. The basic thought to remember is the water is basically acting only as a carrier for the water soluable fertilizers. By predetermination, you know that each section (zone) of your sprinkler system is covering a certain square footage or area. Your irrigating time is usually based on, 1) the amount of water required for that area,
2)sprinkler system capabilities,
3)soil holding capabilities,
4)and other factors prevelant to that specific zone.

By considering all specifics involved, a time factor has been established for irrigating that area. Then, a determination must be made as to how much fertilizer is required for that particular area (zone).

Using the SMALLEST area (zone E) as the "calculating area", determine how to adjust the injector for 1.25 gallons of fertilizer to be injected into the waterline in a 10 minute time span. Set the injector pump at that rate and leave it at that setting for the entire operation. If using the proper equipment for injection, it doesn't matter how many gpm's your well is pumping or what pressures. The output from the injection pump should remain the same if the right equipment is chosen and used according to specification.

Several different methods are being used today for "fertigation". Some of the methods of injection range from very complicated and expensive flow indicating or monitering devices to very simple induction pipes installed on the suction side of a booster or water well pump. All of the various types or methods may prove to be acceptable for those that have installed and are currently using them. Most injection systems are adapted for that particular location and cannot be moved or transported to another location if the need arises. Some systems that rely on water velocity or pressures for operation may not be as consistant in output as desired because of fluctuations in flow and pressure.

Of all the methods that have been and are being used, it is generally agreed that a piston type pump, injecting the fertilizer into the pressure discharge side of the water pump, is probably most acceptable. One of the acceptable characteristics of the piston pump is its ability to automatically compensate for varying changes in water pressure. It is virtually not affected by pressure differentials. A separate pumping unit, the injector pump and fertilizer holding tank are located at any convenient position downstream from the water pumping station. Injection of fertilizer on the pressure side of water pumping equipment eliminates constant exposure to bearings and bushings in water pumps and to any critical automatic valving past the pump.

Fertigation can be a very effective turfgrass management tool. Most irrigated turfgrass managers already have a major portion of their homework completed. It is very possible that fertigation could work for you.

Good irrigation grows turf that will withstand scrutiny by a television camera.

Baltusrol and world sees sixth U.S. Open in fine shape

Television coverage of a U.S. Open Championship couldn't have been better than at Baltusrol Golf Club last year. All 18 holes were fully televised for fans around the nation to enjoy every exciting moment of play at the memorable old club located in Springfield, New Jersey.

With several million television viewers and as many as 25,000 exuberant fans trodding through the final days of the week-long tournament, it was certainly no wonder that Superintendent Joe Flaherty was especially concerned that all ran smoothly on the grounds of this most prestigious golf club.

This 1980 tournament marked the sixth time U.S. Open competition was conducted at Baltusrol and the second time Flaherty was on hand to supervise overall grounds maintenance. In 1967, Flaherty served as the assistant grounds superintendent — very helpful experience he brought to bear for the 1980 tournament.

"The United States Golf Association sends representatives of the Green Section to courses scheduled for tournament play approximately two years before the actual week of the event," said Flaherty. "We meet to devise a program for ensuring that the course will be in top condition. Prior to tournament time we're asked to follow very specific instructions for the maintenance of putting greens, tees, fairways and roughs."

The USGA committee is very specific in its requirements for Baltusrol. Greens must be carefully trained to accept a true cut of 5/32 of an inch during the week of the championship. And all greens must be uniformly fast — standing up to the careful scrutiny of the USGA's stimpmeter, a device that measures the "roll" of the lush greens.

Collar areas around the greens must be mowed to precise height as are the tees and fairways. A careful spraying program is adopted early on to ensure the grounds will not suffer from disease or insects.

"We have two courses here at Baltusrol," said Flaherty. "This time the lower course hosted the tournament play. But both courses are carefully maintained — whether there's a championship tournament in town or not."

Flaherty credits his hard-working maintenance crew, ranging from 18 to 21 men, the reliability of his equipment, and his automatic irrigation system, for the model appearance of his Club.

Baltusrol Golf Club President R.J. Boutillier has said that the primary objective of this Club for the past 95 years is the cultivation and advancement of the royal and ancient game of golf. Proper irrigation goes a long way toward achieving that singular goal.

Flaherty, who doesn't mince his words, calls his irrigation system a "real workhorse". Presently 125 acres of the Club are under automatic irrigation. Installation of the system was done in 1969 without any disruption of play.

To achieve that end, piping for the system was plowed into position — polyethylene pipe laid in narrow slits at the rate of one fairway per day green to tee. Rather than positioning the pipe through the center of each fairway, pipe runs alongside of fairways with sprinklers installed in triangular formations to give better water coverage in the roughs and less saturation in the fairways.

The water mains total 90,000 ft., and are constructed of asbestos cement ranging from four to eight inches in diameter to deliver a total annual water requirement of more than 17 million gallons. Water for both courses is pumped from four deep wells on the Club property with the balance provided by the Commonwealth Water Co., Short Hills, New Jersey.

Four Worthington pumps are utilized to bring water from these wells. Included are one 300-GPM (gallons per minute) pump with a 50-hp motor, one 200-GPM pump with a 40-hp motor, one 120-GPM pump driven by a 30-hp motor and one 90-GPM pump with a 30-hp motor. The total 710 GPM provided by these pumps is augmented by city water to maintain the desired 1200 GPM needed to keep the grounds in the best condition possible.

The backbone of the irrigation system is represented by the more than 1100 sprinklers (Rain Bird Model 41), chosen for their unique water conservation features. Because of the triangular positioning of these sprinklers, approximately two to two and one-half more units are used than in a center row installation.

From an aesthetics point of view, better water coverage means healthier, more attractive grass. But from a golfer's standpoint, particularly the pros, Baltusrol adds up to faster greens and tougher roughs — the way the game was meant to be played.

Flaherty agrees. "We know full well that more than 150 tough competitors will be vying for total prize money of approximately $365,000 — a tough-minded bunch culled down from an initial entry list of almost 5,000. You can bet they've come to play."

But maintaining a highly competitive, attractive course doesn't have to be expensive. In fact, it can


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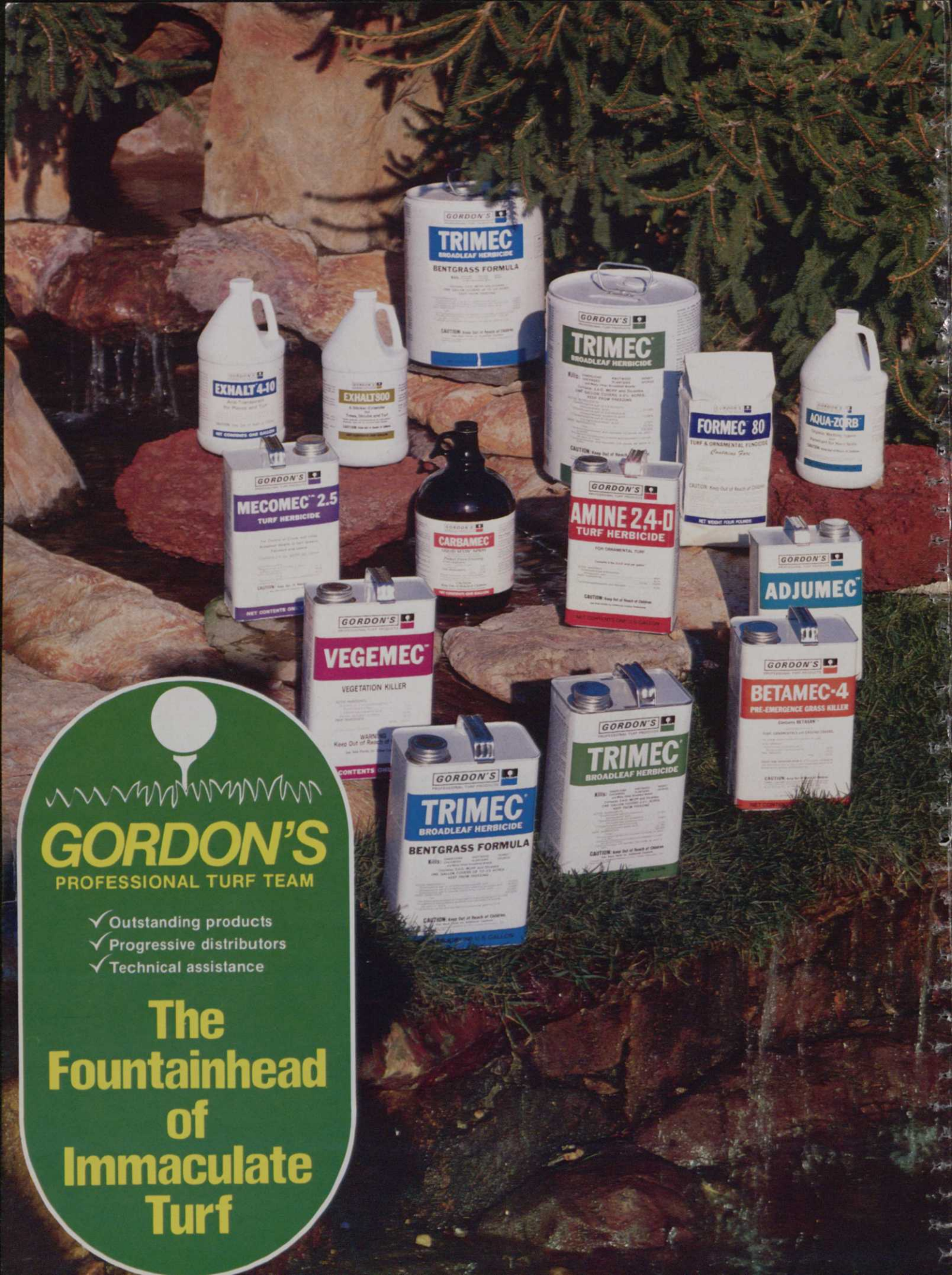
GORDON'S
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AQUA-ZORB
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CARBAMEC
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TURF HERBICIDE
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