

# Wetting agents gaining in importance as

By Mark Leslie

Wetting agents — a little-used creature of the marketplace for two decades — are suddenly and unequivocally in the forefront of golf course maintenance as pressure mounts on superintendents to reduce use of water and chemicals.

"Everybody's making them now. With pressure on pesticide and water use, we're going to have to find other ways to grow grass. Wetting agents help," said one superintendent in the Northeast, who is dabbling with extensive use of the products for the first time. "Very few people in our area have a wetting agent program now, but I think you'll see a lot on seasonal programs in the future."

Wetting agents are surfactants, meaning they increase the spreading and penetrating power of water by lowering surface tension.

Their benefits are many. Because they help water penetrate the ground surface and get to the root zone, they also:

- greatly enhance effectiveness of liquid pesticides or fertilizer being applied;
- help prevent wilt and localized dry spots;
- allow reductions in water and chemical use;
- help reduce compaction; and
- stop dew from forming for many days.

Mike Saffel, a research technician working with Dr. Paul Rieke at Michigan State University on wetting agent research, said there are actually three classes of products — surfactants and adjuvants (which are formulated to be used with chemical applications) and wetting agents (which are developed more to improve soil moisture and to help water penetrate the ground).

"Because of the increased number of sand-based greens, which are prone to dry spots, we'll see more use of wetting agents. The majority of people are applying them just on greens. That's the main focus," Saffel said.

## CHECK IRRIGATION FIRST

U.S. Golf Association Green Section National Director Jim Snow forewarns superintendents: "Many times you use a wetting agent when you could solve the problem by fixing your irrigation system's coverage... That's more true in the North or East, where irrigation systems aren't as sophisticated or as finely tuned as they are in the West. In the West, where you don't have rain for months, you find out very quickly where your irrigation is poor. In the East you may never find that out. So when you do have a dry spell or a cutback in water, you think about treating with wetting agents.

"In the Northeast irrigation coverage is poor, relatively speaking. Yes, every area gets some water, but some areas get twice or three times as much as another spot. I've told a lot of clubs to check out their irrigation, and they've found out it was bad and they resolved the problem by changing

the heads, or nozzles, or correcting pressure problems or line deficiencies."

Saffel said management practices are critical to how well the product works. "If they overwater, the wetting agent benefits will be negated," he said.

Superintendent Tim Hiers of John's Island Club in Vero Beach, Fla., added that courses with good water quality may not need wetting agents at all. While soft water will penetrate the ground surface well, he said hard water does not. Wetting agents "allow that water to cut right through."

## TEST RESULTS

Saffel said Michigan State's tests have been "very variable. Sometimes we'll get obvious results, sometimes not... We know they take dew off. We know sometimes they increase soil moisture. We know they do increase the effectiveness of some herbicides. But we don't know their soil action and what we

can expect as long-term benefits."

He said extensive phytotoxic and soil moisture measurements have been taken, and results will be available this fall.

While he had not seen the positive results of University of Georgia tested done on Roots, Inc.'s NoburN, Saffel said the wetting agents MSU has tested can burn the turf if applied at the highest rates, even if they are watered into the ground immediately. "Avoid watering on a hot day," he said.

## GOOD REPORTS

That said, many are singing the praises of wetting agents.

Superintendent Jim Diorio of Purpoodock Club in Cape Elizabeth, Maine, said: "I'm getting a lot better water penetration now, after using wetting agents, aerating and deep-tine aerating. We're getting less and less puddling."

Diorio, who started this treatment program five years ago, uses a hose applicator to hit localized dry

NEW DISTRIBUTION CENTERS  
in the  
EAST, WEST, SOUTH & MID-WEST!



**BEAM CLAY**

AMERICA'S FINEST SPORTS SURFACES  
USED BY OVER 60 PRO-TEAMS

- HAR-TRU® LEE® & HADEKA® TENNIS COURT SURFACES & SUPPLIES
- SUPER-SOPPER® WATER REMOVAL MACHINES
- YANKEE® RAKES & SQUEEGEES

**TYPAR**®  
GEOTEXTILES & TURF COVERS

**Terra-Green**

TOP-DRESSING & CONDITIONER  
IMPROVES AERATION AND DRAINAGE  
BETTER THAN SAND  
YET RETAINS NUTRIENTS & MOISTURE!

AMERICA'S PREMIUM  
HEAT-TREATED  
TOP-DRESSINGS

**PARTAC**®  
GOLF COURSE  
TOP-DRESSING



PLUS CONSTRUCTION,  
CART PATH, SAND TRAP, AND  
DIVOT REPAIR MIXES

**TerraFlow**®  
DRAINAGE SYSTEMS

**PARTAC**®  
**GREEN SAND**  
**FOR DIVOT REPAIRS**

The Ultimate Solution to Unsightly  
Divots at Televised Golf Tournaments  
and other Sports Events!

AVAILABLE NATIONWIDE  
**1-800-247-2326**  
IN N.J. 908-637-4191  
PARTAC PEAT CORPORATION  
KELSEY PARK, GREAT MEADOWS, N.J. 07838  
ORLANDO (FL) RIPLEY (MS) MEMPHIS (TN)  
SO. BEND (IN) RENO (NV)

CIRCLE #118

## Misinformation in market, says company official

The marketplace is filled with "tremendous misinformation" regarding application rates of wetting agents, according to one manufacturer.

"People are making exaggerated claims because — they can," said Ray Kimmel of Parkway Research in Houston, Texas, noting that the industry is not government-regulated.

Yet Kimmel opposes regulation which, he said, would mean "lesser quality from fewer people, and the price would go way up. (With registration) you start having registration costs and inspections and all the other things that drive up the prices of pesticides and herbicides to astronomical proportions."

Superintendent Jim Diorio of Purpoodock Club in Cape Elizabeth, Maine, said: "Normally, the higher the percentage of active ingredient in a product the less you have to use to do the job. And manufacturers are using all sorts of active ingredients."

Kimmel agreed. "There's very little way to measure effectiveness of wetting agents. So in our mind the best way to judge is by active ingredient," he said.


He said most wetting agents use similar raw materials. Most are non-ionic surfactant materials.

However, he said: "Everyone is in a big scramble to beef up their active ingredient (AI) total, so they are counting alcohol. That is misleading. Alcohol has no beneficial effect."

Meanwhile, U.S. Golf Association Green Section National Director Jim Snow warned that superintendents should consider more than percentage of active ingredient in choosing a wetting agent.

"It is true that as far as the buy is concerned, you use less product with a higher active ingredient. And that product may be better. On the other hand, the formulation is important and maybe other products work better even though their AI is not as high."

COMPUTER SOFTWARE • COMPUTER SOFTWARE



**TRIMS DOES IT ALL!**

Golf course superintendents around the world are now using **TRIMS Grounds Management Software**.

**TRIMS** is the one and only software system designed with the help of superintendents to meet the challenge of today's record keeping requirements.

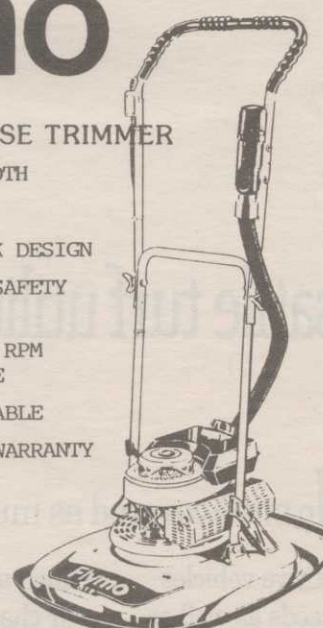
**TRIMS Record Keeping Features Include:**

- Budgets
- Personnel
- Material Safety Data
- Maintenance
- Labor Activity
- Chemicals
- Spare Parts
- Fuel Inventory
- Fertilizers
- Irrigation
- Work Orders
- Purchase Orders

Call or write today for your FREE Demo Disk and see what **TRIMS** can do for you!

**LABB Systems/Software**  
6018 E. OSBORN ROAD  
SCOTTSDALE, AZ 85251  
800/733-9710 • 602/481-9710

CIRCLE #119



**Flymo**®

GCT 20 GOLF COURSE TRIMMER

- \* 20 INCH CUTTING WIDTH
- \* WEIGHT 34 LBS
- \* NEW REINFORCED DECK DESIGN
- \* PATENTED & PROVEN SAFETY CUTTING SYSTEM
- \* 98cc/2 STROKE/4200 RPM POWERFUL JLO ENGINE
- \* COMPLETELY REBUILDABLE
- \* 1 YEAR COMMERCIAL WARRANTY (ENGINE ONLY)

**PRECISION SMALL ENGINE CO.**  
POMPANO BEACH, FLORIDA  
(305) 974-1960 OR 1-800-345-1960  
REPS WANTED

CIRCLE #120

# water and chemical use pressures mount

spots. "That's worked real well. It has kept areas green that normally I'd lose," he said.

Snow said wetting agents should be used preventively as well as curatively, to stop dry-spot problems before they occur, because they can be "very hard to re-establish."

President Ray Kimmel of Parkway Research, which has been making wetting agents for many years, said: "When you have a spray going on turf, surface tension may keep it on the blades of grass. That's fine if you are applying a systemic pesticide, herbicide or fungicide. But if you want it to be absorbed and to go to the soil, use a surfactant..."

"Wetting agents initially were —

and I think still are — used mostly as enhancement products for better efficacy for herbicides, fungicides, or fertilizers. But in the last few years, many people are looking at using them as an application in their own right, where they feel they need a wetting agent in the soil to help the water, either natural or irrigated, get through the surface layers.

"If you have high surface tension in the soil, when you irrigate water stays up on top. First, it doesn't get to the root level. Secondly, it breeds fungus."

One superintendent alluded to the effectiveness of wetting agents in helping localized problems. "I hope next year I'll spray for snow mold and wetting agents and use

even water less. My optimum would be to apply wetting agents once a month."

"All diseases need water. Less water means less disease," he added. "Also, we all know the less you water, the better the golf course plays. It plays firmer and you don't use as much to keep it green. You don't need as much fungicide because less water means less disease. And if the greens are firm you can mow higher and still maintain the roll and good grass."

Another benefit, he said, is elimination of dew for a number of days after application because the turf does not respire at night. "That is a great bonus when mowing in the morning and when you

have a tournament," he said.

The fear of wetting agents burning turf has focused researchers' attention on finding a solution to that problem. Roots, Inc. has made that the "essential issue" in its promotion of NoburN. NoburN doesn't need to be watered in, said Roots' Wayne Wall. "We took a chance at staking the future of NoburN on that benefit and it was a winner."

Compaction is another major factor. As Diorio found at Purpoodock, soil compaction can be greatly decreased using wetting agents, which neutralize ions tied up in the soil.

## FINDING THE BEST FOR YOU

Diorio suggested comparison testing, saying: "No two courses

are the same. It can even be different on the same course. I have two greens built five years ago, nine built 20 years ago and seven built 70 years ago. I've got native soils, clays. Nothing's the same."

A colleague said: "I'm trying several now to see which works best for me. I've been hitting really bad spots on fairways. And I can see which are coming back quicker. In one or two applications I can see which one's best, then figure it into my budget for next year."

Whichever wetting agents they decide to use, superintendents are increasingly using them in their maintenance schedules. They are another tool in the toolbox for growing better grass with less water and chemicals.

## Survey of wetting agents in golf course market

Company Address Phone #	Brand name	Year introduced	Granular or liquid	Days without dew
Aqua-Aid, Inc. P.O. Box 223 White Marsh, MD 21162 301-335-3702	Aqua-Aid	1985	Both	3-10
Aquatrols Corp. of America 1432 Union Ave. Pennsauken, NJ 08110 800-257-7797	AquaGro	1954	Both	8-10
Grace-Sierra Crop Protection Co. P.O. Box 4003, 1001 Yosemite Dr. Milpitas, CA 95035 800-492-8255	Hydraflo	1988	Both	14-21
KALO, Inc. 4550 W. 109th St. Overland Park, KS 66211 913-491-9125	Hydro-Wet	1971	Both	N/A
Montco/Surf-side P.O. Box 404 Ambler, PA 19002 215-836-4992	Surf-side	1976	Both	N/A
Naiad Co. 5627 Stoneridge Dr., #316 Pleasanton, CA 94588 800-541-6662	Naiad	1978	Both	N/A
Parkway Research Corp. 13802 Chrisman Rd. Houston, TX 77039 800-256-3668	Wet Foot	1990	Both	45
PBI/Gordon Corp. 1217 W. 12th St. Kansas City, MO 64101 816-474-0462	Aqua-Zorb		Liquid	
Precision Laboratories, Inc. 333 Anthony Trail Northbrook, IL 60062 800-323-6280	New Balance Penetrate II	1991 1991	Liquid liquid	N/A N/A
Rohm and Haas Co. Independence Mall West Philadelphia, PA 19105 215-592-3292	Latron AG-98	1991	Liquid	N/A
Roots, Inc. 25 Science Park New Haven, CT 06511 800-342-6173	NoburN (formerly SSO)	1991	Liquid	30
J.R. Simplot P.O. Box 198 Lathrop, CA 95330 209-858-2511	Slippery Water		Liquid	N/A
Southern Mill Creek Products Co. 5414 N. 56th St. Tampa, FL 33610 813-626-2111	SMCP Wetting Agent	1980	Liquid	N/A

## Manufacturers look to new products in field

Guns, fertilizer blends, and dry and wettable-powder forms are among the advances that hold the future for wetting agent manufacturers.

Because water-needy areas like Southern California and Florida are imposing restrictions on irrigation, producers are impregnating materials like corn cob grounds with wetting agents to act as carriers.

At the same time, Kalo, Inc. of Overland Park, Kan., and others in the chemical additive business, are adding wetting agents to their products.

Spring Valley Turf Products of Jackson, Wis., for instance, is blending Kalo's Hydro-Wet wetting agent with fertilizer.

A growing number of companies are making "guns" that mix their specific wetting agent with water.

Kalo's Pro-Ap is a high-volume, metered applicator that allows people to syringe the wetting agent on to trouble spots.

Parkway Research of Houston, Texas, markets a Big Foot applicator for its Wet Foot wetting agent.

"A lot of competitors are using guns," said Parkway Research President Ray Kimmel. "The next phase of development is designing a product that is ideal for injection directly to the irrigation systems."

Each area of advancement is a race by the industry's research and development teams. It appears a number of companies have left the starter's block and are looking at every angle possible to advance the use of wetting agents in the universe of turf care.

## Wetting agents defined

Wetting agents are a substance that, when added to a liquid, increase its spreading and penetrating power by lowering the surface tension. Many materials are used as wetting agents, including long chain alcohols, petroleum sulfonates, acid sulfates and derivatives, sulfonated aromatic derivatives, esters of fatty acids and clays.

The Association of American Pesticide Control Officials defines a wetting agent as "a substance which appreciably lowers the interfacial tension between a liquid and a solid, and increases the tendency of a liquid to make complete contact with the surface of a solid, so that no dry area may remain."