



ORNAMENTAL PROTECTION PLAN

like chickweed and henbit - weeds that are usually untouchable. Plus Surflan can be used in many tank mixes. So when it comes to protecting ornamentals while killing weeds, let's just say we've got an offer you can't refuse. For further information on Surflan or any other product in the extensive line of DowElanco products, call 1-800-352-6776. Always read and follow label directions.

Staying competitive in changing times

by DICK HOLZSCHU/general manager, Urban Pest Management, DowElanco

With continued growth in the turf and ornamental industry comes change. Newer products, label and formulation changes, and novel ways of accessing information all require your attention.

However, tending to the daily tasks of hiring employees, maintaining equipment, and dealing with erratic weather can make keeping abreast of changes challenging at best.

For consumers, the demands of everyday life lead them to outside sources—such as lawn care professionals—to not only get the job done, but to answer their questions about products and services.

In turn, lawn care and landscape companies look to manufacturers for information and support for the products that meet their customers' needs.

It is up to manufacturers, such as DowElanco, to educate, inform and provide informational training—not just in response to crisis, but to help our customers survive times of change and thrive.

Our stewardship efforts are concentrated in three areas including: developing new products, continuing support for current products and providing information.

New products for the millennium

First, we press forward with new products that respond to current needs. In that vein, I'm proud to announce our newest product—Conserve® SC turf and ornamental insect control. Conserve just received an accelerated federal registration for sale in the United States



under the Environmental Protection Agency's Reduced Risk registration program this past June.

Conserve is the first turf and ornamental product in the new spinosyn chemical class and offers professionals a "Caution" signal word. It uniquely combines the efficacy of synthetic insecticides with the benefits of biological insect pest control products. It's highly active at very low use rates and offers excellent control of sod webworms, armyworms, cutworms and a variety of ornamental insect pests.

The launch of Conserve is just one result of our continuous and extensive research designed to stimulate innovation. Currently, several other new products are nearing the final phases of the 10-year introductory development process.

Customer support immediate

Developing new products isn't enough. In today's fast-paced world, busy professionals need information about products, packaging, and applica-

tion techniques.

With that in mind, we support our current products with over 20 sales and technical representatives dedicated solely to the turf and ornamental marketplace, and we reinforce this team with corporate-based research and development specialists. Together, these people work to create a support structure that provides technical and research information, and training. They also serve as a liaison between our customers and our 400 scientists and researchers at corporate headquarters.

Reaching out to the industry

Educational support is also a part of our work. To that end, DowElanco maintains a strong presence in industry-wide associations, such as Responsible Industry for a Sound Environment (RISE), The Professional Lawn Care Association of America (PLCAA), Golf Course Superintendents Association of America (GCSAA) as well as many other associations that work to educate the public and the government about the proper use of specialty pesticides in the environment.

By fostering the innovation and discovery of new products, supporting our current products and cooperating with others in our industry to educate consumers and legislators, DowElanco plans to help raise the service standard throughout the 21st century. Our goal is to not only foster change, but rather, help make the transitions necessary for change a little smoother.

**Trademark of DowElanco*

Summer stress affects insect timing

By R. L. BRANDENBURG
/North Carolina State University

Summer challenges landscape managers. Turf often suffers from heat and drought and possibly even increased traffic and activity.

Employee morale can suffer, and of course, some pest problems peak in the heat of summer. Extreme weather conditions often make the timely deployment of pest management strategies difficult.

Since insects are cold blooded, we assume that warmer temperatures speed insect development and thereby increase the likelihood of pest outbreaks. Generally this is true because certain pests do seem more common when it's hot and dry. Turf damage from pests such as some of the billbugs, mites and chinch bugs can be more severe when it's hot and dry.

Warm springs may cause various caterpillar pests (cutworms, armyworms) to appear earlier than normal. However, popu-

lations of some white grub species may be reduced under hot, dry conditions due to poor survival of the eggs and small grubs.

Although we have no control over the weather and how it affects pest problems, we do have insight into how weather can influence pest control and can take advantage of opportunities to adjust our program accordingly. This area of knowledge is becoming increasingly important with the arrival of a wide variety of novel new insecticides and biological control strategies.

Since the weather affects development and behavior, a good understanding of this relationship for the key pests in your area is important and can pay big dividends in time, money, turf quality, and customer satisfaction.

Products like Merit (imidacloprid) and Mach 2 (halofenozide) have increased our awareness of the importance of timing for insect control. Directed against the early instar or small grubs these products give excellent control. As grubs grow larger, the level of control seems to decline proportionally more than for some of the other conventional insecticides. Some of these newer products, including many of the "natural" products, act as insect growth regulators and their impact is most profound on the earlier stages of the insect. Since weather can influence the rate of development, close monitoring of insect development is critical. Hot, dry weather can also influence insect behavior by moving below-ground insect pests deeper into the soil. This



The close relationship of pests to their environment makes monitoring and scouting critical during periods of hot and dry weather.

may make them less susceptible to insect control strategies. Pre- and post-irrigation of the affected area can be beneficial in improving control by moving the insects closer to the surface.

Pesticides may be rendered less effective by hot, dry conditions by increasing the amount of volatilization or loss to the air. The hot, dry soil, organic matter, and thatch may also bind or "tie up" the pesticides so that much of the material never reaches its site of action.

Biological control strategies are also challenged by hot, dry conditions. Insect-attacking nematodes, bacteria, and fungi are adversely affected by these conditions. A general rule of thumb is to apply after the sun is low in the sky. Pre- and post-irrigation also help. **LM**

—The author is a turfgrass entomologist at North Carolina State University.



Summer weather may consist of extremes which can dramatically influence pest abundance and behavior such as forcing white grub populations deeper in the soil.

FOR A CLEAN SWEEP

Whether it's construction or maintenance, most turf and landscape jobs require some type of clean up.

By CURT HARLAR



Brouwer - Vac 138 is suited for large-area collection of debris.



SweepEx Mega Series features 11 brush rows on 48-inch or 60-inch frame.



Smithco Sweep Star re-engineered with more power, features.

In the war against unkempt grounds, the front-line troops turn to lawn sweepers and vacuums. A good power unit can handle anything from sand—which is all but impossible to sweep clean with a hand broom—to animal droppings.

Grounds pros also use power sweepers to remove aeration cores, rake leaves and pine needles, sweep water from golf greens, and remove light snow.

When clearing a large area of debris, engineers with Shindaiwa recommend starting at one corner of the area to be cleaned and proceeding up one side. The idea is to create a windrow, just as one would with a hay rake. In all but the most difficult situations one pass should do the job.

Choose the correct type of broom to make work go faster. Brushes are available in all-polypropylene, all-crimped wire, or a 50-50 mix. Engineers with Guest Industries say the 50-50 mix is the best choice for cleaning up dirt, small stones, rubble. A straight polypro brush is best used for snow and small fines.

When working with a hand-held power broom, experiment with shaft angle. Generally, the shallower the angle of the handle, the easier the units are to use. There is no reason to bear down on a power broom, as you would with a hand broom, while sweeping. In most cases, the spinning action of the drum paddles causes a vacuum effect which lifts debris from the grass or walk into the sweeper.

Engineers at TrynEx, note that a sweeper is good for snow removal on delicate paving stones where you don't want a blade.

The big time-consumer with power sweepers generally is the time it takes to empty the unit. Match capacity to the task. In other words, "Don't send a boy to do a man's job."

BROUWER TURF EQUIPMENT
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Circle No. 250

The BV138 vacuum from Brouwer, Dalton, OH, is designed for a 30 hp tractor. This unit features 5.1 cubic yards of capacity and is suited for large-area

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Mean Turfgrass Quality Ratings of Kentucky Bluegrass Cultivars for Each Month Grown Under **High Maintenance** at Seventeen Locations in the U.S. & Canada 1991 Data

Turfgrass Quality Ratings 1-9; 9=Ideal Turf: Months 1/

NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
Midnight	5.3	5.7	5.2	5.2	6.4	6.4	6.3	6.3	6.3	6.6	5.9	5.0	6.2
Unique	6.3	6.7	6.3	5.6	6.2	6.3	6.4	6.3	6.4	6.5	5.5	5.2	6.2
Glade	3.0	3.8	5.1	5.5	6.1	5.9	6.0	5.8	6.4	6.6	5.7	4.7	6.2
RAM-I	4.7	4.7	5.3	5.5	5.8	5.8	5.9	5.7	6.3	6.5	5.9	5.5	6.1

Under high maintenance, Ram I ranked fourth out of 125 entries.

Mean Turfgrass Quality Ratings of Kentucky Bluegrass Cultivars for Each Month Grown Under **Low Maintenance** at Sixteen Locations in the U.S. 1991 Data

Turfgrass Quality Ratings 1-9; 9=Ideal Turf: Months 1/

NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
Midnight	5.3	4.7	6.0	4.8	6.7	5.7	5.3	5.6	6.5	5.7	5.6	6.0	5.7
Barmax	6.3	5.0	6.0	6.1	6.8	5.8	5.0	4.9	5.5	5.0	4.9	5.0	5.7
RAM-I	5.3	5.3	4.0	5.1	6.4	5.7	5.1	4.9	5.3	5.6	5.3	4.3	5.5

Under low maintenance, Ram I ranked third out of 62 entries.

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> LM REPORTS

collection of leaves, litter, grass clippings, and thatch from vertical mowing. Unit unloads quickly with high-angle hydraulic hopper tilt.

Heavy-duty dual impeller fans power two adjustable suction nozzles which can be hydraulically raised for easy transport. Optional hand-held hose attachment is designed for easy cleanup of ditches or fence rows. Dust reduction tarp is standard.

Clarke Industries, Inc.

(314) 205-1220

Circle No. 251

Bag up to 11 cubic feet of clippings with the LV-30, from Clarke, Chesterfield, MO. Side-zipper disposal makes bag easy to empty. Powered by a 6-hp Tecumseh engine, the LV-30 has large wheels for easy maneuvering over tough terrain. Heavy duty impeller picks up cans, sticks, leaves and more. For jobs on adjoining areas, consider the 91-WS. Its 36-inch sweep path cleans 19,000 square feet per hour—five times faster than a man with a broom. With optional dual side brooms, which get in close to curbs or brickwork, it handles a 45-inch path. Available with battery power, gas or LP-gas.

Eagle Power Products

(612) 454-6500

Circle No. 252

Battery-operated rider sweeper, the TK1000 from Eagle Power, Minneapolis, features a 36-inch cleaning path. This unit can clean 75,000 sq. ft. per hour and works on both hard and soft surfaces. It includes a 5-micron dust control system. The TK1000's large capacity hopper keeps the operator on the go and not tied up with emptying the unit. All controls, maintenance checks within operator's easy reach.

Excel Industries, Inc.

(800) 395-4757

Circle No. 253

Dump a load right into a waiting truck or bin with the Hustler's Extra Hi-Lift BAC-VAC. This 10-bushel hopper box, made by Excel, Hesston, KS, can raise and dump 75 inches high. The fabric hopper bag will not rust or corrode. A lock-up pin holds the hopper up in fully raised position for access to the engine compartment. The lift is based on hydraulic cylinder with a hand lever control. Similar Hi-Lift BAC-VAC has 15 bushel capacity to keep the mower running longer before dumps.

Guest Industries

(800) 243-5390

Circle No. 254

Quick attach sweeper attaches to bucket loaders in about two minutes. The three DM 25 (with 25-inch diameter brush) units and 10 DM32 (32-inch brush) Power Broom offerings from Guest Industries, Torrington, CT, all attach to the bucket lip and angles 30 degrees to either side. Options include dirt deflector, marker flags and storage stands to protect the bristles when not in use. Units require 9 to 35 gpm hydraulics at 2000 psi to operate the broom.

E.L. Hilts & Co.

(800) 354-4587

Circle No. 255

Powerful brush-drive system is the key to performance in the RS-365 from Hilts & Co., Hickory, NC. The chain-driven brush system eliminates belts. A 36-inch wide brush sweeps straight, left or right. Zero-degree turning radius makes this self-propelled unit quite maneuverable. Unit weighs 230 lbs. and powered by a 5-hp Quantum engine.

Ingersoll Equipment Inc.

(414) 582-5099

Circle No. 256

The SW38 tow-behind sweeper from Ingersoll, Winneconne, WI, is designed to be used with any lawn tractor that is 8 hp or larger. The sweeper incorporates two brushes, one to pick up and the other to propel the material deep into the hopper. The sweeper offers six sweeping positions plus one for transport. The rot-resistant hopper has a full 11-bushel capacity.

Jacobsen

(414) 635-6711

Circle No. 257

Clean a five-foot swath at every pass with the 720 line of sweepers from Jacobsen, Racine, WI. All three sweepers have rubber-finger pickup system that removes wet or dry leaves, paper, cans, glass or other debris. Up to 5-cubic yards can be handled. Models include a PTO-driven sweeper and two units with self-powered pickup systems for use behind a variety of towing vehicles. The 720-EHL has a hopper lift that extends to 9 feet for unloading into a dump truck. Optional thatcher-thinner allows combining of two jobs.

Alfred Karcher, Inc.

(908) 356-1199

Circle No. 258

The KM 700 from Karcher, Somerset, NJ, has a height-adjustable main brush to move litter and dust into the 11 gallon container. Powerful air flow sucks dust up into the dirt container and through a specially designed replaceable filter, ensuring dust-free operation. An adjustable side brush lets unit clean in corners and other hard-to-reach places. This manual unit is 28" wide with a side brush.

Lambert Manufacturing Corp.

(513) 337-3641

Circle No. 259

All sweepers in the Lambert line feature mildew-proof hampers, semi-pneumatic tires and waterproof brushes. Made in Ansonia, OH, the pull-behind Challenger MH-481 has a 38-inch swath and 12 bushel (15 cubic feet) bin. Wind apron keeps leaves and grass in the hamper and not blowing back onto the lawn. The smaller Capri-corn handles 31-inch swath and 10 bushels. Several push-type sweepers available, including the 20-pound 26-inch R-368 and the deluxe 26-inch B-369, which features a lift-out hamper for fast unloading. Also, check out the three trailing vacuum system models HDV-340, HDV-350 and HDV-360 all with mow and mulch feature and top-filling hamper for maximum fill.

Parker Sweeper

(630) 627-6900

Circle No. 260

Full line of sweepers and vacuums is available from Parke Sweeper, Addison, IL, to handle jobs of all sizes. Six tow-behind lawn sweepers, with four rows of polypropylene brushes, handle sweeping needs. There also is a full line of power vacuums including the Vac-CS, a self-propelled chipper/shredder vacuum that reduces debris 11:1; the Scavenger line, with 5-hp Briggs & Stratton engine and 30-inch sweep width; and the eight models in the Vac-35 series which features the Spin-Pak deflector that packs debris down into the bag for more efficient filling. The Vac-35s, available in gas, propane or battery power.

Shindaiwa, Inc.

(503) 692-3070

Circle No. 261

The new PowerBroom PB230 is lighter and lower-priced than the original PB270. Manufactured by Shindaiwa, Tualatin, OR, it is a gas powered sweeper attached to a splined solid-steel drive shaft like those found on hand-held gas trimmers or brush cutters. Drum of tough Alcryn material equipped with rubber-like fins pushes debris ahead of operator. Rotating sweep action, combined with unit's excellent balance, makes for fast removal of lighter material. The 1.1 hp PB230 can handle pea gravel, bark chips, sand, snow or water. The larger 1.5 hp 270 can move small and large material up to three inches deep.

Smithco

(610) 688-4009

Circle No. 262



Terracare Pick-Up Sweeper easy to unload with its electric winch.



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The Sweep Star 60 dedicated turf sweeper has been re-engineered to increase its power, performance and operator comfort. The unit is powered by a 25-hp Kohler Command OHV twin-cylinder engine. Its exclusive full-floating sweeping reel can be engaged and operated at any height to better pick up wind-rows. All four wheels have larger, high capacity drum brakes and the rear wheels are now equipped with larger, softer tires for maximum turf protection. New heavy-duty cylinders have been added to the separate hydraulic lift system to provide a higher

reach for the hopper dumping to trucks. This unit sweeps up cans, grass clippings, leaves, pine needles, butts and all other debris in one pass.

Sweepster, Inc.
(800) 456-7100
Circle No. 262

Collect all kinds of debris with the 26-inch diameter brush on the brand new Sweepster HBB. Larger broom lasts longer, too, with up to 15 percent more serviceable life than the Dexter, MI firm's HB Series. Quick attach mounting. Workers

spend more time on the job, less time in the shop. The HBB series includes the 4-foot HB48B; 5-foot HB60B; and the 6-foot wide HB72B. The machines are fitted with 12, 15 and 16 cubic foot hoppers, respectively. All units are a compact 29 inches high and 58 inches long. The optional dual gutter brooms let the operator get in close to curbs, parking blocks and other vertical surfaces. The cutting edge of the bucket is perfect for scraping packed dirt off driveways or lots; sweep the area clean with the brush.

Tennant
(800) 553-8033
Circle No. 263

The Tennant line of sweepers, made in Minneapolis, MN, ranges from the push-behind 186 to the larger riding models like the 385. The 186 is designed for picking up sand, litter and related materials. The unit's filter system controls dust. The 385 features heavy-duty hydraulics and retracting side brush.

Terracare Products, Inc.
(608) 429-3402
Circle No. 264

Electronic winch makes the Terra Pick-Up Sweeper from Terracare Products, Pardeeville, WI one of the easier units to unload. As the hopper opens, a rake pulls material out of the front end. The wheels are 15x6:00-6 (one on the front and four on rear axle), giving this unit the flotation needed to operate on the finest turf or greens. Rear axle drops out for easy maintenance. Brush height is easy to adjust and the clutch can be engaged from the tractor seat.

Toro
(612) 888-8801
Circle No. 265

Dual, counter-rotating reels provide uniform 48-inch coverage with the 4800 Turf Sweeper from Toro, Bloomington, MN. Hydrostatic drive features Sundstrand pumps and Parker-Ross wheel motors. Reel height is adjustable for light or heavy conditions. Self-propelled with a 18 hp Kohler engine, the unit sweeps at 5 mph and has a transport speed of 8.6 mph. Hopper holds a full bushel. Wide tires provide good traction on uneven terrain.

TrynEx
(800) 725-8377
Circle No. 266

The new SweepEx series from TrynEx International, Royal Oak, MI, generates minimal dust and flying debris, protecting the operator, machinery and environment. Mega Series has 11 brush rows on a 48-inch or 60-inch frame. The Pro Series offers 8 brush rows on 48, 60 or 72 inch frame. Brushes are replaceable polypropylene. Mounting kits available for skid steers, fork lifts, tractors, bucket loaders, pickup trucks. **LM**

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 **The National
Arbor Day Foundation**

New weeds, new woes

Once you control one pest species,
another may be ready and able to
fill the niche.

By BERT McCARTY, Ph.D

Turf managers have seen an increase or shift of new weeds in the last five to 10 years. Many of our traditional troublesome weeds now have adequate control measures, but new weeds seem to have taken their place. Possible explanations for this shift include:

► Significant increase in the use of preemergence herbicides, especially on fertilizer carrier. These herbicides do an excellent job on most grass weeds, but allow other weeds such as sedges and many broadleaves to escape and thrive.

► Significant reduction in the use of traditional postemergence herbicides which provided adequate control of most weeds. Examples include MSMA, DSMA, and 2,4-D. These materials provided good general weed control at very reasonable prices. With the reduction in their use, many previous non-troublesome plants have now become major weeds.

► Overwatering of many turf sites favors the presence of certain weeds such as sedges and annual bluegrass. In moist soils these weeds have the natural ecological advantage over the turf. This has been further aggravated by recent hurricanes and tropical depressions in the South which have led to higher than normal soil moisture.

Some weeds that have become problems for turf managers in recent years include:

Spreading dayflower (*Commelina diffusa*): summer annual; fleshy, smooth stems; flowers with three blue petals; reproduces by seed and stem fragments; prefers moist habitats.

Torpedograss (*Panicum repens*): perennial grass; robust, sharply pointed, creeping rhizomes; reproduces primarily by rhizomes.

Doveweed (*Murdannia nudiflora*): summer annual; fleshy, creeping stems rooting at nodes; leaves alternate; small, inconspicuous blue to purple flowers; reproduces by seed.

Smutgrass (*Sporobolus indicus*): clumping perennial grass, leaf blades flat, very thin; seed often infected with black fungus, smut.

Mat Lippia (Matchweed) (*Phyla nodiflora*): mat-forming perennial broadleaf with prostrate growth habits, hairy stems; stems rooting at nodes; leaves opposite with large teeth towards the tip; flowers rose-purple or white, in a head at tip of a long stalk resembling a match head; reproduces by seed and stolons; prefers sandy coastal plains.

Chamberbitter
(Niruri, Gripweed)



Dove weed



Lawn burweed