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Circle No. 134 on Reader Inquiry Card

MAINTENANCE

Double engine life with simple measures

George R. Thompson of Briggs & Stratton says four quick procedures provide money-saving performance and longevity dividends with outdoor power equipment.

They are: use clean, "fresh" gas, change oil regularly, service the air cleaner, and clean the cooling system periodically.

Thompson says Briggs & Stratton engines work equally well on regular or lead-free fuels, but lead-free results in reduced combustion deposits and longer engine life. It is not recommended that fuel be used from one season to another. A 30-day supply is adequate.

An oil change is recommended after 20 to 25 hours of engine use. Thompson recommends a high-grade oil with high viscosity. Oil levels should be checked regularly.

If the air cleaner is of the "oil foam" variety it can be cleaned with kerosene or liquid detergent, then re-oiled with clean engine oil. Air cleaner elements should be cleaned

every three months or every 25 hours, whichever comes first, Thompson says, more often under dusty conditions.

A clogged cooling system can cause overheating and eventual engine damage. It's important to clean the cooling system. Debris can enter the blower housing and clog the cooling fins.

PEOPLE

Names in the news

Eugene D. Baston, president of the Golf Course Superintendents Association of America (GCSAA), has moved west to Waco, TX, where he is now golf course superintendent of Ridgewood Country Club. He is the former superintendent of Percy Marcum Golf Club in Birmingham, AL. Ridgewood CC, located adjacent to Lake Waco, is an 18-hole private course with tennis courts and a marina.

Robert T. Giaquinta, a 37-year-old research manager in Dupont's Agricultural Chemicals Department,

earned special recognition from his peers recently. Dr. Giaquinta was named the 1985 Outstanding Young Plant Biologist by the 4,000-member American Society of Plant Physiologists at the society's annual meeting in Providence, RI.

The author of numerous research articles and book chapters on photosynthesis and related topics, Dr. Giaquinta garnered the award for his research on biochemical mechanisms of sugar transport in crop plants and their relationship to increased yields. He is president of the Plant Growth Regulation Society of America.

The American Society of Golf Course Architects accepted four new associate members during its summer meeting in Ireland. They are: **Kenneth Dye Jr.**, Houston; **Steven P. Forrest**, Toledo, OH; **Clyde B. Johnston**, Hilton Head, SC; and **Damian V. Pascuzzo**, Walnut Creek, CA. The group also elected three regular members: **Gary Linn**, Palo Alto, CA; **William Love**, Wheaton, MD; and **David Rainville**, Tustin, CA.

Dr. David Casnoff is new director of turf research at the **Northrup King Co.** He oversees the company's na-

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New Power Throw System™ sweeps 178,000 sq. ft./hr. 50% faster, 41% more useable hopper space than comparable units. Quiet: 82-83 dBA. 2 yr./2,000 hr. warranty.



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TENNANT® 210 cleans a 46" path. It's compact, highly maneuverable—sweeps 4 times faster than walk-behind models. Gas or battery power.

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Rugged 42HD sweeps a 34" path, cleans up to 18,000 sq. ft. per hour—6 times faster than a pushbroom. Optional scrubber attachment. Gas, LP or battery power.



Scrubbers

Large-Capacity Scrubber

TENNANT® 550 scrubs a 50" path, up to 81,000 sq. ft. per hour. With SRS™ water re-use option, it scrubs up to 6 hours non-stop. Gas, LP, diesel or battery.



Heavy-Duty Scrubber

TENNANT® 527 scrubs a 43" path, up to 68,000 sq. ft. per hour. Scrubs 4 hours non-stop with SRS™ option, available only from Tennant Company.

Tight-Area Scrubber

Scrub 32" path, up to 29,500 sq. ft./hr. Pre-Sweep™ also picks up debris. ES® option reuses water to scrub 2½ hrs. non-stop. Type "EE" available.



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TODAY'S VEGETATION CONTROL SPECIALIST HAS TO LOOK A LOT OF PEOPLE STRAIGHT IN THE EYE.

Annual total vegetation control today is a lot more sophisticated than just killing weeds. You have to get the job done economically enough for your budget, simply enough for your work crews, and responsibly enough for the environment. That's why Cyanamid developed ARSENAL® herbicide. Its advanced chemistry answers the needs of all people involved.

WHY ARSENAL IS EASY ON THE ENVIRONMENT

Because of its unique mode of action, ARSENAL, when used as directed, has no harmful effects on mammals, fish, bees, birds or earthworms. Because ARSENAL is non-volatile and does not move laterally in the soil, off-target vegetation is unaffected. ARSENAL is non-flammable. Its unique chemical activity causes a slow "burn-down" in foliage, so it poses little fire hazard. Unlike tank mixes, ARSENAL introduces only one biodegradable product into the environment. And it's applied only once during a season, resulting in a lower chemical burden and a reduction in "touch-up" treatments.

CONTROLS MORE UNDESIRABLE VEGETATION.

ARSENAL has demonstrated control of a broad spectrum of weeds, vines and brush species. Tests in southern states showed that ARSENAL alone (at rates of two quarts per acre) out-performed several tank mixes for annual and perennial weed control. Even more impressive, ARSENAL was most effective on difficult species like Johnsongrass, trumpetcreeper, kudzu and red maple.

ONE APPLICATION GIVES SEASON-LONG CONTROL.

ARSENAL gives you full-season control for up to eight months in temperate climates. It fits your spray schedule,

Always read and follow label directions carefully.

TOUGH ON WEEDS. EASY ON THE ENVIRONMENT.

Circle No. 101 on Reader Inquiry Card

because it can be applied at any time during the growing season. ARSENAL controls not only existing vegetation, but also new weeds that germinate after application. So you get residual control for the rest of the season. On hard-to-kill vegetation, ARSENAL keeps working on the roots until complete control is achieved. In spray solution, ARSENAL is stable for several days. That means no waste due to decomposition, and no chance of under-dosing target vegetation.

ARSENAL offers broad-spectrum control, including these tough species:

Johnsongrass	Blackberry
Trumpetcreeper	Bindweed
Poison ivy	Canada thistle
Greenbriar	Foxtails
Redvine	Red maple
Kochia	Kudzu
Multiflora rose	Sumac

DUAL ACTION CONTROLS IN A WHOLE NEW WAY.

Unlike most other herbicides, ARSENAL is absorbed through both roots and foliage to stop new cell growth. Vegetation absorbs ARSENAL in less than two hours, so rain won't wash off your investment. Within four hours, plant growth ceases. In perennials, ARSENAL translocates thoroughly in the roots to prevent regrowth. This unique chemistry makes the visible results of control more gradual. In some vegetation, loss of color and other outward signs may not be apparent for weeks after application. After a year or more, returning vegetation is mainly desirable annual grasses and legumes.

ARSENAL IS RIGHT FOR YOUR RIGHTS-OF-WAY.

On railroad, highway or industrial rights-of-way, around power substations, signal boxes, bridge abutments, lumber or freight yards — wherever you need annual total vegetation control, ARSENAL is the smart new choice for the job.



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SPORTS TURF

by Ron Hall, associate editor

Infield action

It's arguably the most exciting play in sports and too often one of the most painful; the simultaneous arrival of baseball and runner and the slide over baked clay at home plate.



Don Sadler, the barrel-chested maintenance supervisor for the Canadian city of Etobicoke (pronounced AY-TOE-BE-COE) near Toronto, works to take the sting out of the play. That's just one of the benefits of a properly prepared infield; firm for good footing and true hops, yet soft enough that it doesn't flay a sliding baserunner.

Catch the action any summer afternoon.

He's your boy, he's all arms, legs, and joints working at cross purposes and he's rounding third, jets working. The relay from centerfield to the

shortstop to the plate is chest high. The teen-age baserunner's automatic pilot flashes down, and the runner, right knee tucked, skids in a scraping duststorm of flying gravel.

First there's just a touch of red below the rip in the knee of the baseball pants (pants that some sponsoring merchant shelled out money for and under normal circumstances couldn't be cut with a chainsaw), then the blood spreads along the outside of the calf from knee to ankle.

The composition of the infield is the key. Many of Sadler's fields, particularly the softball fields, contain six inches of worked-in hazemag.

"It's crushed round gravel, not crushed stone," says Sadler. "Crushed stone has jagged edges. You don't want that."

The material—available from most sizable aggregate companies—should be screened to $\frac{3}{16}$ th-inch-minus.

Although Harry Gill, veteran groundskeeper for Milwaukee County Stadium and the professional baseball Brewers, prefers "more pointy" chips of sand and not round beach sand which he feels stays "loose and movey," both groundskeepers agree that crushed limestone screenings or rock dust is unacceptable.

Major league groundskeepers' jobs hinge on their ability to provide major league-quality infields, but the infields of many of our community ball fields—most of them totally skin—aren't adequate. Too much clay baked by the mid-summer sun and given perfunctory smoothing and raking, they play like concrete. Rains and they don't drain; players skate.

Sadler, an avid amateur softball player, gives his infields the attention they deserve, including working the material around the bases several inches down with a rake before play.

tionwide program of development and testing from the Northrup King Research Station in Mount Joy, PA.

N. Wayne Rish has been promoted to vice president marketing-agricultural chemicals for **Elanco Products Co.**, the agricultural marketing division of Eli Lilly and Co. Rish joined the company in 1969 as a sales trainee, worked his way up, and in 1982 was named director of agricultural sales for Elanco.



N. Wayne Rish

A native of Lexington, SC, Rish holds bachelor's and master's degrees in agriculture from Clemson University.

Vermeer Manufacturing Co., Pella, IA, has appointed **Lyle Borg** vice president of sales and marketing of all Vermeer products in North America. He had been sales manager for both industrial and agricultural divisions.

Carl Boat, senior vice president of Vermeer who had handled sales and marketing, now directs international operations. Also, **Larry Hutchinson** is new education and training manager with **Al VanderLinden** filling Hutchinson's previous post as industrial service manager. **Lee Wright** steps in as Vermeer's service manager, a responsibility similar to that of VanderLinden, only in the agricultural division.

Mickey Strauss, president of American Landscape Inc. of Canoga Park, CA, has been installed as president of the **California Landscape &**



Mickey Strauss



Don Fisher

Irrigation Council. He also served as president of the California Landscape Contractors Association in 1981.

Don Fisher will be working with Southern California architects, irrigation consultants, and municipalities in his new post as specification sales manager for **Toro Irrigation** of Riverside, CA. Fisher joined the Irrigation Division in 1978 as a warehouse supervisor.

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RCRA amendments

New laws which went into effect last month could play havoc with the profit margins of commercial pesticide applicators.

by Art Zimmerman

Amendments to the Resource Conservation and Recovery Act (RCRA) passed by Congress last November promise to have the general effect of tightening this country's hazardous waste management rules.

The amendments will bring many small quantity generators (SQGs) under hazardous waste management rules for the first time.

The EPA estimates an added 175,000 businesses that produce small quantities of hazardous waste will be subject to the new regulations.

The amendments lower the minimum regulated quantity of hazardous waste from 2,200 pounds to 220 pounds a month, but will add only another one-half percent (approximately 800,000 metric tons) to the total being regulated.

EPA study

The EPA conducted a survey of 22 industries considered most likely to have newly-regulated generators, including the "pesticide industry." This category is divided into two groups: "pesticide end users," such as golf course superintendents, and "pesticide applicators," such as lawn care service contractors.

Of the 11,000 possible SQGs, about 2,000 generate between 220 and 2,200 pounds a month (from half of a 55-gallon drum to five 55-gallon drums), making them subject to the new hazardous waste regulation.

All those who generate between 220 and 2,200 pounds of hazardous waste per month have begun to use the Uniform National Manifest when shipping hazardous waste off-site. The amendments further mandated that SQG hazardous waste not managed at a full hazardous waste disposal site (a Subtitle C facility), must only be disposed of at a state-approved municipal or industry facility.

Art Zimmerman is an experienced freelance writer from Cleveland, Ohio.

By March 31, 1986, the EPA must decree final rules for handling hazardous waste generated in the SQG category.

Some states have been approved by the EPA to administer portions of the hazardous waste management program, but some state requirements may be stricter than federal requirements. Because of this, businesses believing they will be affected by the new regulation should contact their individual state environmental protection agencies.

Statutory requirement

The new RCRA amendments also mandate that on-site storage of hazardous wastes may occur for 180 days (maximum) without a permit (though there are provisions for extensions to

270 days).

During the interim period, SQGs will not be required to fill out all the information on the Uniform National Manifest form, nor complete the entire paper trail from originator to final disposition and back to original generator now required of large scale generators.

The information that must be provided on the manifest form includes the name and address of the generator, the U.S. Department of Transportation description of the waste, the number and type of containers, the quantity of the waste, and name and address of the facility to which the waste is being shipped, according to Barry Stoll, the EPA's assessment program manager for SQGs in the Office of Solid Waste.

Small quantity generators must be wary of waste disposal sites

If you come under the new definition of a small quantity generator (SQG), there are additional complications with RCRA amendments you must be aware of.

"A lot of people forget that even if you comply with all the requirements of RCRA and you send your waste to a site which later has a problem under CERLA (Comprehensive Environmental Response and Liability Act—also known as the Superfund act), you're in trouble," says Jeff Barnes, a partner in the Cleveland (Ohio) law firm of Squire, Sanders and Dempsey, which has a significant environmental law department.

"CERLA says if a company generates a hazardous substance, it doesn't have to be a waste," Barnes says, "and that's a very long list which incorporates by reference

the lists that appear in the Clean Water Act and RCRA. That company is responsible for it wherever it ends up.

"So, if your waste ends up in a site which later has to be cleaned up, you may be responsible for the cost not only of cleaning your own waste but 'jointly' for somebody else's wastes in the same dump," he says.

Tony Sasson, the Ohio EPA's small quantity generator expert, agrees. "We just fined a small generator \$7,000 because he gave his material to someone who was just 'passing through,'" Sasson says. "It turned out the transporter took it and just left it beside the road somewhere. We were able to trace it back to the original generator who was held responsible for that." □



Hazardous waste sites like this is what Congress hopes to end with the new RCRA amendments.

"All we're doing is letting the statutory requirement go into effect; we're not trying to impose anything further at this point," says Stoll. "The partial use of the Uniform National Manifest at this point is essentially to serve notice or as a label to inform people handling the material of what is in the shipment."

As the web of information is developed, it is wise (even for small waste generators) to check on their transporters and, if possible, to make an on-site visit to their disposal facilities to be certain things are being handled correctly.

If there is any question about what materials can and cannot be put down local sanitary sewers, it is best to check with the local waste water treatment authority. Some industrial wastes can be accommodated at the local treatment facility, others cannot. The terms and conditions of industrial wastes in sewer streams are controlled under the Clean Water Act.

Probably the first question any

small quantity generator should ask is whether his particular wastes are classified as hazardous. More than 400 chemicals and compounds are listed as hazardous under RCRA, and those lists are being added to constantly. The list appears once a year in the *Code of Federal Regulations* (at 40 CFR Part 260.30). Additions made during the year are printed in the *Federal Register*, as the definition of "hazardous waste" is a moving target.

For the most up-to-date information on listed materials, questions can be addressed to EPA's toll-free hot line, (800) 424-9346. Small quantity generators can also call EPA's Small Business Hotline, (800) 368-5888.

The EPA has a mandate from Congress to go through the full proposal, comment period, and revision cycle before issuing permanent regulations. Also, the EPA is required to undertake an educational/assistance program, working with trade associations and small business organizations, to inform and educate, members.

SQGs should make sure their organizations contact the state, regional, and federal EPA's and establish lines of communication.

Other portions of the 1984 amendments which may affect applicators as well:

- The Leaking Underground Storage Tanks (LUST) program mandates regulation of underground storage of products and wastes for the first time. No new underground tanks may be installed after May 7, 1985, unless they meet new standards.

- There is also a massive underground tank registration program, to be issued by November, 1985, and implemented by May, 1986.

- Probably the most important provisions are those banning or restricting the disposal of hazardous wastes in landfills. These include a "hammer" provision, which says unless the federal EPA positively concludes that disposal of certain wastes is safe in landfills, the disposal becomes prohibited.

WT&T