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Would your crew promise (and deliver)! effective control of many weeds for as little as ten cents per thousand square feet?

Would they promise not to damage or weaken any growing stock they are cleared to handle?

Would they keep on working around the clock, month after month?

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## Beautiful turf is no accident. Make it happen with Acti-dione® 4-season disease control

The old saying that beauty is more than skin-deep is nowhere more applicable than on a golf course. Beautiful turf will not retain its beauty unless it remains healthy. In addition to normal wear and tear from golf play and stress from variable weather conditions, fungi are an ever-present health threat to turf. There's little you can do about golf play and weather, but you can control fungal diseases. An effective, economical way to combat fungal growth all year long is to use Acti-dione® Thiram and Acti-dione TGF® in a four-season disease control program. With fungi out of the way, turf has a better chance to grow strong and healthy — to resist weed infestation, to bounce back from injury and to survive adverse weather conditions. See your TUCO distributor today for complete information and assistance in planning a four-season disease control program with Acti-dione turf fungicides.



**Use Proxol\* 80SP to help prevent insect damage**

**TUCO**

Division of The Upjohn Company, Kalamazoo, Michigan 49001

### Brown patch heads summer diseases

Brown patch is a prime summer threat because it thrives in warm weather. Acti-dione Thiram, applied weekly, controls not only brown patch, but also dollar spot, melting-out, fading-out, leaf spot, rust and powdery mildew.

# Government News Business

EPA told an informal hearing panel on March 5, 1975, that if the EPA Administrator determined that a request raises "substantial new evidence" which could materially affect a previous suspension or cancellation order, the request could become subject to public notice procedures and formal hearings before an administrative law judge. The revised procedures were announced at the same time EPA Administrator, Russell Train, turned down a request by the State of Louisiana for emergency permission to use DDT this spring to control tobacco budworm.

New EPA statistics indicate that more than 18,000 pesticide registration "actions" were taken by the agency during the past fiscal year. These "actions" include the registration of 2,804 new products, the denial of registration applications for 3,812 other products and the acceptance of amended applications for 3,851 pesticide products.

The statistics indicate that as of June 1974, a total of 34,029 pesticides--insecticides, weed killers, disinfectants and other pest control products--were registered by EPA. The firms producing, formulating or distributing these products amounted to 3,534. The figures also show that 1,370 pesticides were cancelled by EPA during Fiscal 1974, and 33 products were suspended. Both of these actions prohibit the sale of the affected products because of adverse effects on human health or the environment.

Under the 1972 Federal pesticides law, no pesticide may be sold, distributed or delivered in the U. S. unless registered by EPA. The responsibility for this job belongs to EPA's Office of Pesticide Programs.

No changes, said OSHA boss John H. Stender, in response to EPA's proposal to lower the allowable noise standards from OSHA's proposed 90-decibel level to 85 decibels. EPA questioned the adequacy of OSHA's proposal in a December 18, 1974 notice in the Federal Register, by filing "a request for review and report" on the proposal within 90 days. Under the Noise Control Act of 1972, EPA may require another federal agency to justify its promulgation of any noise regulation that EPA deems inadequate. EPA had recommended an 85-decibel limit to be effective in three years with commitments on the part of OSHA to reduce the level further in the future. EPA declared that the proposed limit of 90 decibels would not adequately protect workers who may be especially susceptible to noise.

OSHA is seeking public comment on a document, "Criteria for a Recommended Standard on an Identification System for Occupationally Hazardous Materials," recently submitted by the National Institute for Occupational Safety and Health (NIOSH). The document would satisfy requirements of OSHA that employees be warned of toxic material hazards to which they may be exposed. Public comments concerning the paper should be submitted to the Docket Officer, OSHA, U. S. Department of Labor, Room 260-MNWA, 1726 M St. NW, Washington, D. C. 20210.

Occidental Chemical Company signed a contract with Stan M. Woogerd, president of Agrinova Corp., to develop a new line of specialty formulations. Woogerd specializes in the research and development of the technological means for more efficient application methods and for the increased effectiveness of applied chemicals.

EACH SEASON is a winning season for Bill Moolenaar.

He does it using a proven battery of turf management methods backed up by a bull pen loaded with years of experience in handling unexpected problems.

Bill is superintendent at Dodgertown, spring training home of the L. A. Dodgers baseball club. The Dodgers boast the most complete, well-equipped spring training facility in the major leagues. The complex covers over 300 acres near Vero Beach, Florida, and includes tennis and basketball courts, swimming pool, housing for players and their families as well as the press, two golf courses, and certainly, 3 baseball diamonds.

The baseball fields are treated in exactly the same manner as the golf course fairways. Fertilizer is applied twice yearly. Constant attention and inspection head off disease and insect problems before they can create seri-

ous damage.

The golf courses are open to public membership and a portion of the complex, called Safari Pines, is devoted to private residences. Bill Moolenaar, with the help of 18 men, manages the grounds for the entire complex.

Because of the heavy traffic between January and April, Moolenaar overseeds Italian rye in his bermuda greens. "Most superintendents who oversee know that overseeded greens need special treatment," says Moolenaar, "but its just a matter of getting the work accomplished."

To get his courses in shape for overseeding, Bill starts in May, just after the players leave, with an herbicide program.

"Crowfoot and crabgrass are my biggest problems here. MSMA and 2-4-D (amine formulation) take care of them pretty well. In September, I'll follow-up with a spot application or two in trouble areas," he says.



At the spring training camp of the National League Champion Los Angeles Dodgers, superintendent Bill Moolenaar pitches a . . .

# Turf Disease Shutout

A routine disease control program is followed all summer. And he sprays a preventive fungicide every two to three weeks.

In early Fall the greens are aerified and verticut to retard the bermuda growth while getting rid of any thatch problems. Also, early aerifying allows the bermuda to heal for a more uniform putting surface after seeding. "Depending on the weather, I overseed anytime between Thanksgiving and Christmas," says Moolenaar.

A week to 10 days before overseeding, he launches a special program to make sure that his course is free of disease and insects. He applies Acti-dione Thiram and Proxol 80 SP in a combination tank mix at recommended rates, "The two chemicals are compatible, so why make more than one trip?" he says. His biggest disease problems are pythium, helminthosporium and dollar spot and in the warmer periods of late summer,

brown patch. Sod webworms, cutworms, army worms and at times, mole crickets are his insect threats.

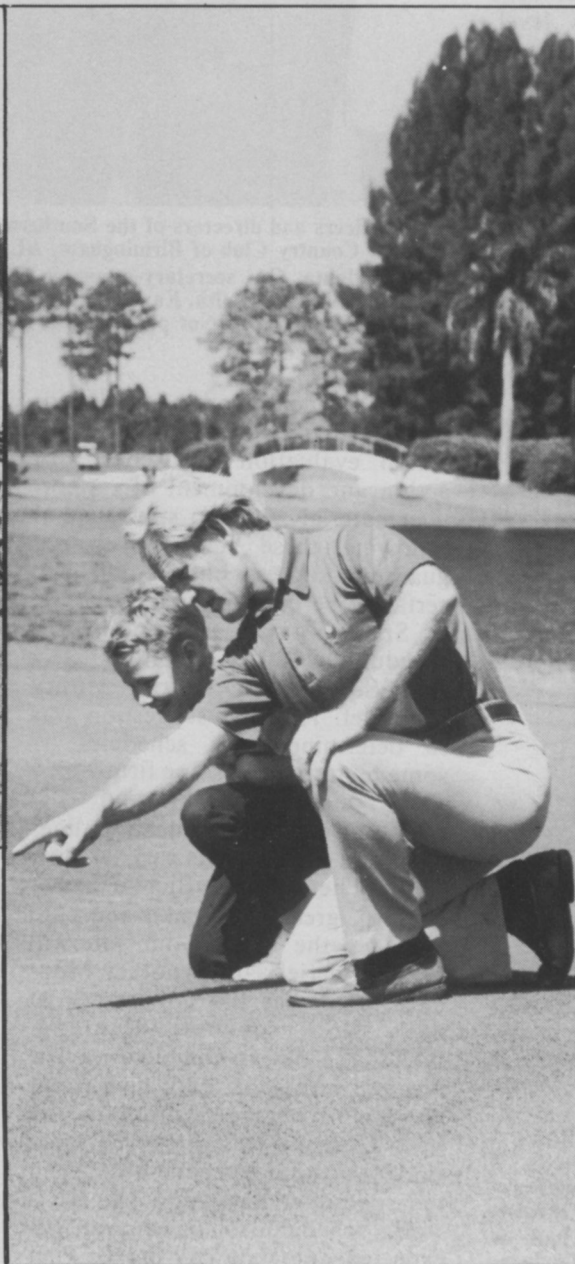
About 5 days prior to overseeding, he topdresses sterilized soil and applies a low-nitrogen high P & K fertilizer.

All greens are seeded in a 2-day period. "It's more work all at one time, but we get all the greens off to an equal start this way," says Moolenaar.

Immediately after seeding, he follows through with another fungicide-insecticide treatment to protect the newly-emerging seedling at one of its most critical periods. The Acti-dione Thiram-Proxol application is repeated again each week for the following two weeks. After overseeding is established he sprays again, followed by two more sprayings at 7 and 10 days.

"Because the insects come out at night, we like to spray in the late afternoon. That puts a fresh application out there when it's needed," he says.

*(continued on page 42)*



**Far left:** Bill Moolenaar looks for turf problem areas during a scrimmage game. **Left:** "Good technical assistance from your suppliers is essential," says Moolenaar, shown checking some application rates with TUCO plant health representative, Bill Maxwell. **Above:** If a twosome has to wait to tee off, they can frequently pass the time watching the Dodgers work out in batting cages adjacent to the golf course. **Right:** Moolenaar's children sometimes accompany him as he makes his rounds. **Far right:** Being superintendent of Dodgertown is serious business but Moolenaar often finds time to share a laugh with his crew members.

# Southern Superintendents Discuss Planning, Success

LOW ATTENDANCE figures once again plagued the turfgrass industry's show season as the Southern Turfgrass Association registered less than 300 people for their recent conference and equipment exposition in Memphis, Tenn.

Close on the heels of GCSAA's New Orleans show and continued competition from budget cutbacks held attendance to the low level. GCSAA attendance was also some 440 less than their 1974 meeting.

Theme of the educational portion of the show was "Success Through Planning".

James Bridges, superintendent of Creeks Bend Golf Course, Hixson, Tenn., welcomed everyone to the meeting and expressed the increased importance of meeting present day challenges through planning. Bridges is also a state director of the association.

Educational director for GCSAA, Bill Knoop, noted a strong correlation between thinking before acting and success in undertaking any project. He listed the tried and true methods of planning and



1976 officers and directors of the Southern Turfgrass Assoc. from left: president, Gene Baston, Country Club of Birmingham, AL, vice president, Al Frenette, Peachtree Golf Club, Atlanta, GA, secretary-treasurer, Euel Coats, Mississippi State University, and directors Billy W. Smith, Kayo Mullen, Bill Langer, Frank Gumpert, James T. Bridges, Jr., and Lee Strebel. Not pictured Pat Ardoin, Tommie Hill and Sam Locke.

success as: identification of objective or goal, definition of all courses of action, evaluation of all courses of action and development of supportive materials. Knoop stressed that following these steps "does not guarantee success, but the odds will certainly be on your side."

Speaking on planned work schedules was USGA Greens Section Southern Director, Monty Moncrief. His first suggestion was to determine work schedules — some tentative and some firm—on a yearly, monthly, weekly and daily basis. "Keep communication lines open and plan jobs as early as possible. The less conflict between the pro, greens chairman and club manager the easier your job will be," Moncrief said. Another Moncrief point was the importance of daily work schedule planning. "After the day is complete, review the finished jobs and plan tomorrow's schedule accordingly," he said. To make operations run more smoothly, have someone other than the superintendent know the day's work schedule so something unexpected does not halt work. Plan

the work so completion of all projects can be achieved. Place employees on jobs most appealing to their particular interest. "And above all, show appreciation to employees for a job well done," Moncrief concluded.

*(continued)*



Over thirty regional and national exhibitors set up booths during the February show. Here the crowd takes a look at what's new in the turfgrass marketplace.



STA 1976 president, Gene Baston, presents Reg Perry with a plaque honoring him for 23 years as secretary-treasurer of the association.

WEEDS TREES and TURF



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of leaf spot,  
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TERSAN<sup>®</sup> LSR.  
TURF FUNGICIDE**

Start with TERSAN LSR turf fungicide on tees, fairways and greens in early spring to stop leaf spot activity before it becomes a problem.

Leaf spot is usually most active during periods of cool, wet, overcast weather. Early applications of soluble nitrogen also encourages disease activity.

TERSAN LSR will also protect against rust and large brown patch before they have the opportunity to damage your turf. If stripe smut is a problem, use TERSAN 1991.

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Stay with the economical TERSAN 1-2-3 Program and you'll be in complete control of major turf diseases on all common turf grasses all season long.

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DISEASE CONTROL PROGRAM**



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follow labeling instructions  
and warnings carefully.*

**For More Details Circle (111) on Reply Card**

One of the newer trends in housing is the complete community development. In this area, planning is most crucial and speaking from personal experience was Bill Carson, superintendent of Sea Pines Golf Course.

Carson used colored slides to outline the step by step planning and development stages of one of the eastern seaboard's largest developments. "Many of the facilities necessary to attract and maintain a satisfied community must be well planned before the first resident moves in," Carson said. "It takes more than tact to inform any of the residents that there has been a mistake in planning and the new highway is going through their backyard."

Irrigation is another area where detailed planning pays off. "One of the most important considerations in any irrigation installation is desired coverage," said Toro Irrigation's Bill Speelman. Matching

the system to the area prevents burn-outs and many insect and weed control problems. A common practice, he said, is the use of fairway heads on greens. "If you decide this is the route you want to take, make certain there's adequate pressure — 80 to 98 psi — to achieve proper water break-up," he said. Incomplete break-up results in inadequate water coverage and sometimes results in turf damage. "In the long run, it adds much to player pleasure and the superintendents' well being if the irrigation job is properly constructed from the beginning," he said.

Preemergence weed control requires use of the planning process and speaking on this subject was G. Euel Coats, associate professor of weed science, Mississippi State University. "Annual bluegrass is by far the most severe grassy weed infesting southern turf areas during the late growing season through the dormant period and into the early

growing season," Coats stated. "Aside from decreasing the aesthetic value of turf, probably the primary objection of annual bluegrass in southern turf is the weed problem associated with the rapid die-back in late spring." Control is usually accomplished with either benefin (Balan), bensulide (Betasan) or DCPA (Dacthal). Pronamide (Kerb) is a newer material that has shown excellent potential for either preemergence or postemergence control of the grass. "Application prior to seeding is early enough for annual bluegrass to be controlled and not interfere with transition of bermudagrass," Coats said.

Another approach used on many southern golf courses is the use of a postemergence application of a non-selective herbicide such as paraquat or cacodylic acid prior to breaking of dormancy. "This usually does an excellent job on annual bluegrass as well as those annual broadleaf weeds present," he said. □



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# RE: Fertilizer

## The Rational Approach

By GEORGE E. OSBURN, Hercules, Inc.

PERHAPS NEVER in the history of commercial fertilizers have they enjoyed the front-page attention they have received in the past 18 months. For many years the industry was plagued with low prices and, of course, low profits. Supply was far in excess of demand. Now the situation is reversed and the cry is for more and more and more.

At the same time, the demand for energy for every other use is ever increasing. There is no doubt that we are in a "crunch" situation. Each day brings an entirely new set of conditions as regards energy availability which is reflected in finished product supply and price. I do not propose, however, to be a prophet of doom; rather I do believe that rational thinking will prevail and our priorities will be sorted out so that we can stay in business and continue to grow.

In looking at fertilizer availability, we should perhaps spend a moment in looking at the overall picture as background. The world population is increasing by about 1.4 million people per week. The present population of 3.9 billion is expected to double in the next 35 years.

We must also bear in mind that the population increase is twice as fast in the poorer nations as in the so-called rich countries. One can, therefore, project his own ideas of what the food supply problem will be and the continuing effect food production problems will have on fertilizer availability.

Now let's look at where we stand today in the United States. The fertilizer demand in 1974 exceeded supply and prices were about dou-

ble the preceding year. The use of nitrogen and potash rose nearly 10 percent while phosphate requirements were unchanged. Forty-seven million tons of fertilizer were used of which about 24 million tons were mixed goods.

At the end of the fertilizer year, 1974 inventories were 28 percent below the preceding year and nitrogen material inventories amounted to only 13 days' production. Fifteen days' supply of phosphates was on hand and 22 days' supply of potash was in producers' inventories.

We cannot, therefore, expect much relief in supply in the short-term even though some production increases are scheduled for 1975. We can briefly cite reasons for shortages which occurred and which will continue to present a problem:

- Natural gas and electric power availability.
- Railcar supply.
- Excessive world demand.
- Continuing low inventories, which means:
  - Continuing tight supply and, of course, high prices.

Let's look at the primary nutrients — nitrogen, phosphorous and potash — for the present and future.

### Nitrogen

Ammonia is the basic building block for all chemical nitrogen fertilizers. Several announcements have been made about expanded ammonia production and it is estimated that the actual increase in ammonia supply will be about four percent for 1975. Most of this will come in the latter half of the year. In manufacturing ammonia, nitrogen

from the air is combined with hydrogen from natural gas, and it requires approximately 40 thousand cubic feet of natural gas per ton of ammonia produced. Thus, the 16.5 million tons of ammonia expected to be produced in 1975 will require about three percent of the total United States use of natural gas. The ammonia industry is one of the principal users of natural gas and, unfortunately, there are no economic alternatives to gas as a feedstock. Naphtha, fuel oil and coal are alternative feedstocks but even if available, would be considerably more expensive than natural gas.

While the four percent increase in capacity is helpful, we should point out that the USDA has projected about a four percent increase in acreage planted for 1975. Assume that for most crops, other than soybeans, each additional four million acres means an additional need of one million tons of fertilizer. This amounts to an estimated 3.4 million more tons of fertilizer needed for farm crops in 1975.

Approximately 40 percent of all the nitrogen used on crops in the United States goes to corn, and that 50 percent of all crop fertilizer goes to 12 midwestern grain states. Also, we must remember that urea, ammonium nitrate, ureaforms and any other nitrogen products do not create a single additional pound of nitrogen — they only convert it and the conversion reduces the actual nitrogen by perhaps 10 percent. This same case applies to converted products of phosphoric acid.

*(continued)*

# How to get the best drift control for the



Aquatic use in drainage systems keeps ditches and canals weed free.  
Roadside application of Visko-Rhap adjacent to cropland.



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