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Manual Francis Sr. (above) compares his experimental Tarleton Dwarf bluegrass (left hand, at right) with another bluegrass variety. Both had been cut almost two weeks previously. Manual Francis Sr. and Manual Jr. (above right) examine the new strain.

Manuel Francis, a retired superintendent and a gifted turfgrass developer, now is busier than ever working on a dwarf bluegrass and a new strain of Vesper Velvet

The Indian Summer of Manuel Francis

For a retired golf course superintendent, Manuel Francis is about the most active man you'll ever meet.

After a distinguished career that started in 1922 as a worker for the legendary Donald Ross, Francis last fall terminated a happy association of 22 years with the Vesper CC in Tyngsboro, Mass.

It was an occasion of mutual regret between the superintendent and his membership, because in his long tenure Francis established Vesper as a New England synonym for excellence



in turf conditioning.

It was no part of Manny's intention to sit back and contemplate the glories of a record that earned him an international reputation. He had a clear eye on the future.

This year, Francis is putting in just about the customary course superintendent's pre-dawn to post-dusk working routine in an enterprise he has been planning for quite a while.

This is a turf nursery, established on 168 acres of an abandoned cranberry plantation in Marshfield, Mass., known as

Manuel Francis and Son, Inc.

The partner is namesake Manuel Francis Jr., who earned a degree in economics from the University of New Hampshire, but has been working for 10 years as superintendent of Belmont CC in Massachusetts.

The nursery was started three years ago on a spare-time basis by both father and son, and Francis Sr. has some specific aims for its development.

"We will specialize for a select market," he says. "We will deal with the golf courses and will

continued

By TOM FITZGERALD

MANUEL FRANCIS

continued

concentrate on sod, with no branching into the seed business. The sod business is really in its infancy."

Thirty of the 168 acres at Marshfield are now under cultivation, with more in preparation. There are 20 acres in Merion bluegrass, seven in Vesper Velvet bent and two in Fylking.

A great deal of Francis' attention is devoted to an experimental section of one acre where he continues his work on a dwarf bluegrass, which is not yet ready for distribution.

Manny has been engaged with this project for nearly four years, with original observations made

lie for a fairway iron shot.

Francis believes the grass will have diversified use, not limited to fairways and tees. "I have been cutting it under putting green conditions as low as one-quarter inch for a couple of years, and it stands up very well," he says. "I think it should be a good putting surface for public courses which have very heavy play."

The Vesper Velvet is a natural product for Francis' nursery, because it was developed by Manny 30 years ago. While it was named for the course where he worked for so many years, the selection actually was made at the Old Orchard (Maine) CC.

Vesper Velvet is used on some, or all, greens at approxi-

dust and I tried it because I felt it would provide an artificial cushion without the abrasive effect of some other agents.

"When used in properly generous amounts," he continues, "sawdust absorbs nitrogen and feeds it gradually back to the plant. The sand in the mixture helps provide pore space."

To bring pallettes across the fields to the truck loading area with minimum damage, Manuel Jr. devised the idea of steel skids—similar to the old Yankee "stone boats"—on which the pallettes are laid. They can then be dragged easily and quickly by a tractor with floatation tires.

Manuel Sr. has been on call for many years as a consultant. ("But only at the invitation of the course superintendent.")

For 14 years he spent winters in Mexico as an adviser on courses such as Club Campreste de La Ciudad de Mexico, Club de Golfo de Bellavista and Club de Golf de Mexico.

He has worked with Percy Clifford, a Mexican course architect who was born in that country of American parents. Manny also trained Mexican course superintendents and one of his protégés presently is superintendent at the Marques CC in Acapulco.

Manny asked to be excused from his Mexican affiliation this past year because of his concentration on the new business in Marshfield.

Francis has great depth of knowledge in turf culture, but he insists on confining his discussions to the practical. "There are many fascinating aspects, such as genetics," he says, "but I think these are properly left to the men of science."

Along these lines, Manny introduced a couple of bits from his self-deprecating philosophy:

"In learning what I know, I have killed a lot of grass."

And: "I read the course instead of a book." □



The steel skids for hauling pallettes were developed by Manuel Francis Jr.

in a plot of the back garden of his home in Tyngsboro. "For now at least," he says, "we are calling it Tarleton Dwarf bluegrass because the selection was made at the Lake Tarleton CC in Pike, N.H."

Although he is a careful and patient investigator, Francis is confident about the favorable characteristics of his dwarf bluegrass, particularly in the Northeastern states.

"It has the advantage of slow growth so that it does not require frequent cutting," he says. "It is a low feeder and is quite resistant to winter injury and common bluegrass diseases."

A visitor to the Marshfield nursery was invited to inspect a section of the Tarleton Dwarf, which had not been cut for two weeks. It still provided a good

mately 60 courses in New England, and Francis is now working on another strain of this fine-bladed, upright grass which has demonstrated resistance to chemicals and wear.

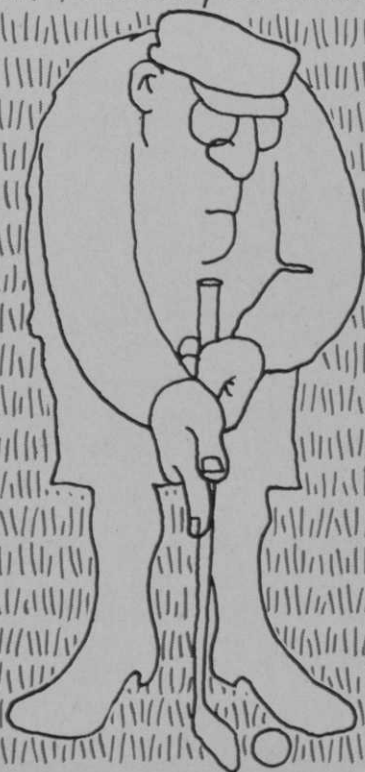
Manuel Francis Sr. has the kind of family background suited for his specialty. His grandfather was a nurseryman in Portugal and his father ran a coffee plantation in Brazil.

Manny has been an innovator through most of his career.

More than 30 years ago, he was using sawdust and sand for top dressing on greens. "The sawdust was an accidental discovery," he recalls. "I had a course at South Portland, Maine, with weak greens," he says. "In tight spots, I believe in investigating every medicine on the shelf. I had a pile of saw-

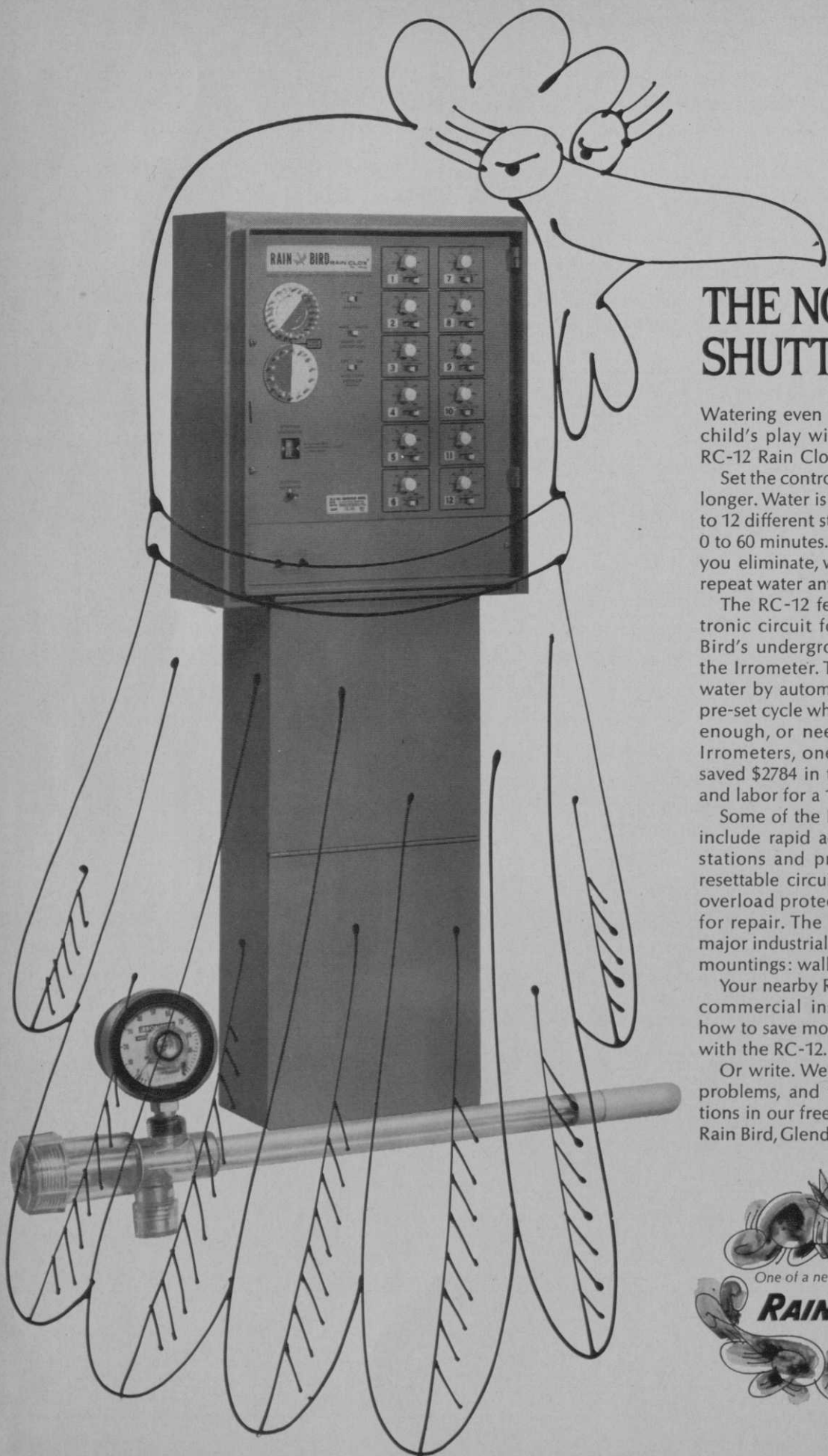
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The RC-12 features a separate electronic circuit for incorporating Rain Bird's underground moisture-sensor, the Irrrometer. This device helps save water by automatically overriding the pre-set cycle when the turf already has enough, or needs more water. With Irrrometers, one Rain Bird customer saved \$2784 in the first year on water and labor for a 10-acre park.

Some of the RC-12's safety features include rapid advance to by-pass off stations and prevent pump damage, resettable circuit breakers for current overload protection, and easy access for repair. The RC-12's design won a major industrial award. And it has two mountings: wall or pedestal.

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Or write. We're serious about your problems, and you'll find many solutions in our free industrial turf catalog. Rain Bird, Glendora, California 91740.



Today specially packaged industrial chemical products for consumer use are more and more finding their way into the home market area. The golf industry can also benefit from use of industrial chemicals in the clubhouse, pro shop and on the course to solve some of its unique maintenance and sanitation problems.

Quaternary ammonium compounds

Unlike common household detergents, quaternaries do not contain chlorine, phenol, heavy metals, mercurials or alkalies. They have inherently a high surface activity and when diluted with water, they are chemically stable, odorless and nearly tasteless, except for some bitterness in concentrated forms.

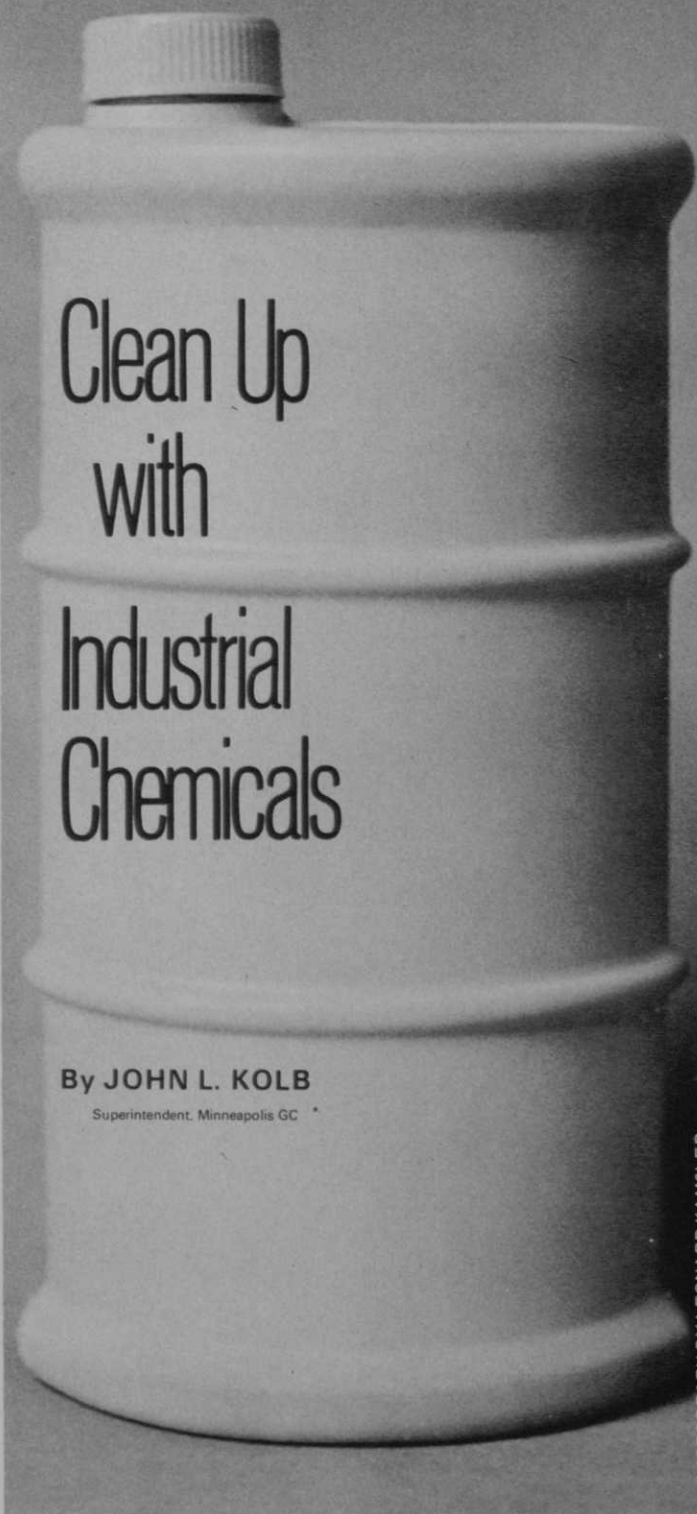
Quaternaries are also intrinsically antibacterial. The Food and Drug Administration, while undertaking procedural tests for the United States Department of Agriculture, observed that this compound kills *Eberthella typhosa* and *Staphylococcus aureus* (both pathogenic to man) in dilutions of water. This characteristic makes these compounds suitable in the clubhouse kitchen for washing and rinsing food stuffs. (Food and drug laws should be checked, however, before using these compounds.) And they can be used also in the dish and silverware washers as well as on the swimming deck and in the shower rooms to prevent infectious fungus diseases. They remain stable even in steamy, humid temperatures.

Course superintendents might use these compounds as a ball washer detergent and algicide to prevent the odoriferous growth of algae and anaerobic bacteria. By adding a quaternary ammonium compound to the water, ball washers can go two to three times longer without changing water than they can with present detergents. However, no chemical yet developed can keep grass clippings, sludge, mud and other debris from accumulating in the ball washer.

Quaternary materials are no more corrosive to metal than water is. Nor is there injury to the skin or membranes. The combination of exceeding low toxicity and rapid anti-bacterial action provides a safe, but effective way of sanitizing water tanks and water systems on courses where these systems are drained for the winter. Drained water tanks should be scrubbed down immediately after draining to remove the non-toxic algae and sludge that have accumulated on the tank walls. Before reactivating in the spring, the tank should be

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These hard-working compounds can be big time and labor savers whenever a club is confronted with tough cleaning, sanitizing and pest control problems. They are effective, safe and reliable



PHOTOGRAPH BY LEONARD KAMSLER

INDUSTRIAL CHEMICALS

continued from page 77

rinsed and scrubbed with a quaternary compound which will guarantee against contamination by *Eberthella typhosa*, *Escherichia coli* or coliforms. (Again, all these bacteria forms are pathogenic to man.) An added advantage of this material is that it is tasteless, and treated equipment

will not impart odors or flavors to the water.

Emulsifiers

Emulsifiers are one of a group of materials, along with household detergents and wetting agents, that alter the attractive forces of water on various surfaces with which the water comes in contact. Emulsifiers have an affinity for a wide

range of materials both organic and inorganic, and after coming in contact with these materials, develop an affinity for water. Thus, clear, fresh water will practically dissolve them or take them into suspension. Every golf course superintendent should have these materials on hand to degrease his motors and engines. Emulsifiers are excellent for removing the tar-like material on grass cutting equipment caused by plant cell-sap. It will remove all the accumulated dirt that collects around leaky seals or oily areas of a machine.

In the past the superintendent left his equipment in a semi-clean state until the end of the season and then steam cleaned or soaked the machine parts in ordinary solvent after dismantling it. Both of these processes often brought dismay because the dry plant cell-sap resists dissolution by both these processes.

Now the superintendent can have sparkling new-looking equipment all season long by making up a concentrated solution of emulsifier cut to about these ratios: six parts water to one part emulsifier. The solution is sprayed on equipment with an ordinary three-gallon chemical or pack sprayer. After setting for a few minutes, the material can be rinsed off with water from a garden hose.

Smart golf professionals may want to borrow this material to clean golf clubheads since grass cell-sap often resists ordinary solvents.

Gopher control

What is to be proposed here is not practical for huge areas, but it is most practical for a 200-acre plot such as a golf course.

The Minneapolis area abounds in grain elevators and big money had been spent on research to rid elevators of rodents and insect pests. One company came

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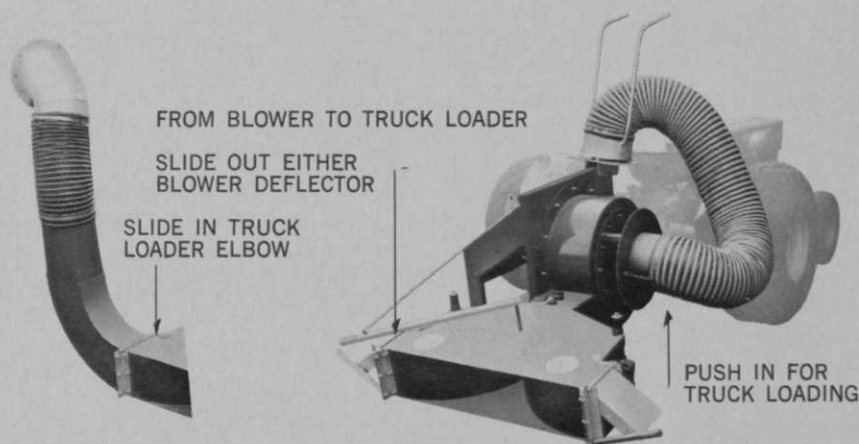
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GIANT-VAC universal P.T.O. unit converts to
blower, vacuum, thatcher, truck loader . . .

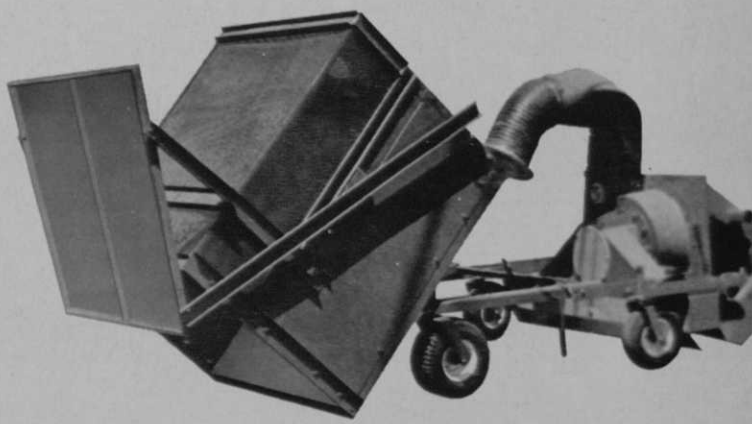
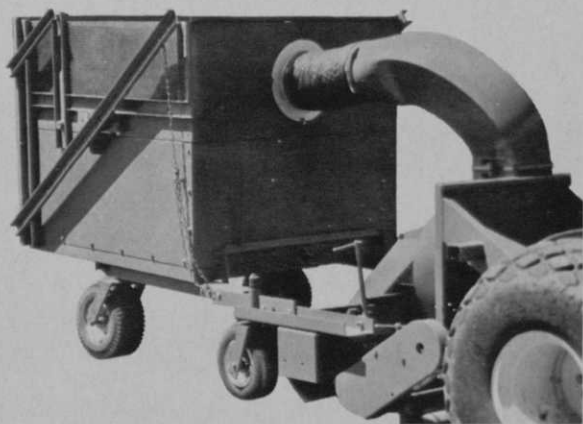
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Exhaust velocities exceeding 250 M.P.H. rapidly clean a large turf area. By flipping one tractor operated lever, the air discharge is changed from left to right allowing constant windrowing regardless of tractor direction. Special features allow converting to a Truck Loader in 30 seconds, as shown.

As vacuum, thatcher and truck loader . . .

Vacuums a 6 foot swath and thatches large acreage at the same time. Truck Loading hose attachments may also be added to this combination. A variety of self-dumping trailers are available.



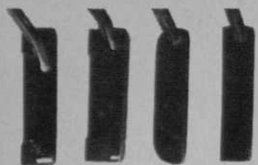
GIANT-VAC offers a P.T.O. driven power unit which performs many functions. Propelled by a standard tractor, this unit with available accessories is versatile and efficient. It can be operated as a double headed blower, cleaning many acres per hour. Attachments are available which convert the Blower to a Truck Loader in less than a minute. This P.T.O. unit is readily changed to a 6 foot vacuum machine. A Thatcher can be added to the vacuum head. Thus, large areas may be thatched and efficiently vacuumed at one time. Other attachments are also available, as well as, an assortment of debris collection trailers. Other Giant-Vac products include . . . Truck Loaders from 12 to 65 H.P. . . . Giant-Blos from 5 to 65 H.P. . . . Giant-Vacs from 5 to 10 H.P. . . . Thatchers . . . plus many standard accessories to custom-fit your needs.

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INDUSTRIAL CHEMICALS

continued from page 78

up with a very volatile material made up of 80 per cent carbon tetrachloride plus 20 per cent carbon bisulfide (carbon disulfide). This material, known as Grain Fumigant, can be purchased from any elevator supply company in liquid form and is used in the following manner.

Pocket gopher: Using a good probe such as a piece of pipe with a diameter of three-fourths to seven-eighths inches, locate the main runway by probing into the soil 12 to 18 inches back from the mound on the side where the horse shoe like depression is found. Remove the probe carefully to leave a clean hole and pour approximately two plus ounces of liquid into the opening. Then take a fist-full of moist dirt from the mound and plug the probe hole. This one treatment will probably do the job, but on large diggings use two to three probes.

Striped gopher: This strange creature is never quite sure which hole is his home, but if you persistently follow and harass him he will eventually duck into an opening. When he ducks into this opening he usually goes down about eight to 10 inches and then turns around to see what you are going to do.

This treatment is effective only when you have chased or seen a gopher enter a particular hole. When you have found it, pour approximately two ounces of the fumigant into the hole. Then stomp the hole shut.

Carbon tetrachloride is not without its drawbacks. Care should be exercised in spilling and inhaling the fumes. It is also very volatile, and its partner, carbon bisulfide, is foul smelling.

Small hip flasks or other glass containers of this fumigant are carried on fairway and rough tractors as well as the utility cars used by workmen. □