insect report

TREE INSECTS

NANTUCKET PINE TIP MOTH

(Rhyacionia frustrana)

MARYLAND: Adults active and ovipositing in all areas of State east of Washington County. Above normal populations and damage expected this season.

NORTHERN PINE WEEVIL

(Pissodes approximatus)

OHIO: Mating observed on stumps of Scotch pine in Portage County area. Feeding on branches and stems of seedlings will continue for brief period before returning to stumps for oviposition. Treatments should be applied.

EASTERN SPRUCE GALL APHID

(Adelges abietis)

OHIO: Overwintering females fully developed on Norway and white spruce in Stark County area. Chemical treatments should be applied.

PINE BARK APHID

(Pineus strobi)

SOUTH CAROLINA: Infestations heavy on 15 of 100 Pickens County white pine trees. Treatments planned.

MAPLE LEAFCUTTER

(Paraclemensia acerifoliella

NEW HAMPSHIRE: Collections of leaf litter made in Sugar maple *(Acer saccharum)* orchards at Acworth and Langdon, Cheshire County, and at Gilford, Belknap County, indicate low mortality of overwintering forms.

EASTERN TENT CATERPILLAR

(Malacosoma americanum)

NEW HAMPSHIRE: Eggs hatched at Durhan, Strafford County, NEW YORK: Eggs hatched in parts of Onondaga, Oswego, Madison, and Cayuga Counties. KENTUCKY: Infested several species of trees (mostly wild cherry) in all sections of State. Tents obvious and feeding apparent.

BENEFICIAL INSECTS

LADY BEETLES

FLORIDA: *Hippodamia convergens* (convergent lady beetle) counts per 100 sweeps averaged 12 adults with some larvae in oats and 4 adults in alfalfa at Gainesville, Alachua County. ARKANSAS: Lady beetle adults found in almost all green vegetation but populations not increasing significantly. Larvae still light. Cool nights probably holding reproduction to light level. OKLAHOMA: *H. convergens* heavy in aphid infested alfalfa in some areas in southwest counties.

TURF INSECTS

SOD WEBWORM

(Crambus trisectus)

MARYLAND: First spring activity noted in 60 acres of bluegrass in Harford County and 20 acres of sod in Prince Georges County. Larvae ranged 1-2 per square yard of sod in Prince Georges County.

TEXAS LEAFCUTTING ANT

(Atta texana)

TEXAS: Damaged lawns in Bexar and Lee Counties.

industry news and newsmakers

Robert Davidson (right), president of the Southern California Turfgrass Council, presents a $3,000 check to Dr. Victor B. Younger (left), professor of agronomy at the University of California, Riverside (UCR). The check represented the turf industry's initial grant in support of turf research at UCR. Looking on is John A. Van Dam, Cooperative Extension farm advisor with turfgrass responsibilities. The presentation was made during the banquet program of the 1974 Turf and Landscape Institute Anaheim.

Ohio Names Martin

David P. Martin was named executive secretary for the Ohio Turfgrass Foundation (OTF) at their recent board of trustees meeting. The appointment was necessitated by the resignation of Robert W. Miller.

Miller had been the foundation's only previous executive secretary, having served since 1966. The new secretary's duties include coordinating the 1974 Ohio Turfgrass Conference and Show, publishing several newsletters during 1974 and more clearly defining responsibilities for OTF committees.

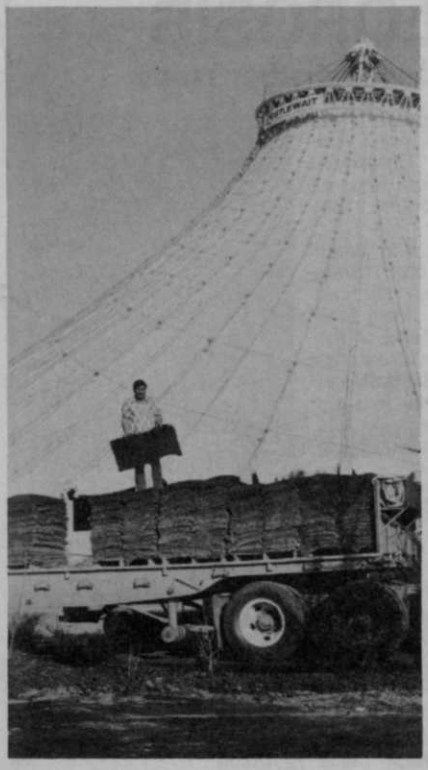
San Diego Drip Exhibit Slated for July 11 - 13

One of the newer innovations to appear on the irrigation market has been the drip concept. Little more than a novel idea for watering plants four years ago, it has spawned a highly competitive business among today's irrigation equipment manufacturers.

New drip equipment is appearing on the market almost monthly. A nurseryman or sod grower interested in drip irrigation has some 40 different water emitters from which to choose for his particular drip system operation.

Most of the emitters now being manufactured can be seen in the office of Sterling Davis, agricultural engineer with the U.S. Department of Agriculture — Agricultural Research Service, at the University of California, Riverside.

"There isn't a dripper here that won't work satisfactorily providing its water source is cleaned up and



Foy Resumes Position

Dr. Chester L. Foy, Professor of Plant Physiology at Virginia Tech, has been reappointed as associate editor of **Weed Science,** the official bimonthly professional journal of the Weed Science Society of America (WSSA). Foy has served the society in an editorial capacity intermittently for about 15 years.

Fylking, Official Grass of Expo '74

While Expo '74 World's Fair visitors are admiring the fabulous displays and exhibition centers they will be walking on Fylking Kentucky bluegrass.

Flyking (being unloaded at left) was chosen as the fair's official grass for its beauty and hardiness, two factors necessary to insure pleasant surroundings while withstanding heavy pedestrian traffic from the projected 4.8 million visitors.

The sod was grown by the Rede Turf Sod Farm, Hubbard, Ore., from see donated by Jacklin Seed Co., Spokane, Washington. The sod is unloaded in preparation for laying throughout the 100-acre site.

The fair, located on two islands and on the banks of the Spokane River in the heart of downtown Spokane, will be transformed to a city park after the exposition.

managed right," Davis said. "That's the important thing about drip irrigation, of course, cleaning up the water, using an adequate filtering system."

Davis says the emitters can be grouped into these classifications:

(1) **The long passageway.** Water travels around a spiral within each emitter,or a long tube, slowing from friction, to reduce the water head, or pressure.

(2) **The small diameter insert.** A tiny plastic nozzle is inserted into plastic water tubing. Sometimes the tubing has a protective flap to keep dirt from the nozzle.

(3) **Flushing.** The emitter has a ball or other device to control the water. When water first enters from the supply line, it can flow freely, flushing out the opening. As pressure builds up in the line, the ball closes the large opening, leaving only a tiny orifice for water emission.

(4) **Line sources.** The supply line, either of plastic or ceramic material, oozes water through small openings at a set rate according to the pressure within. This system can sometimes be flushed by increasing the water pressure temporarily.

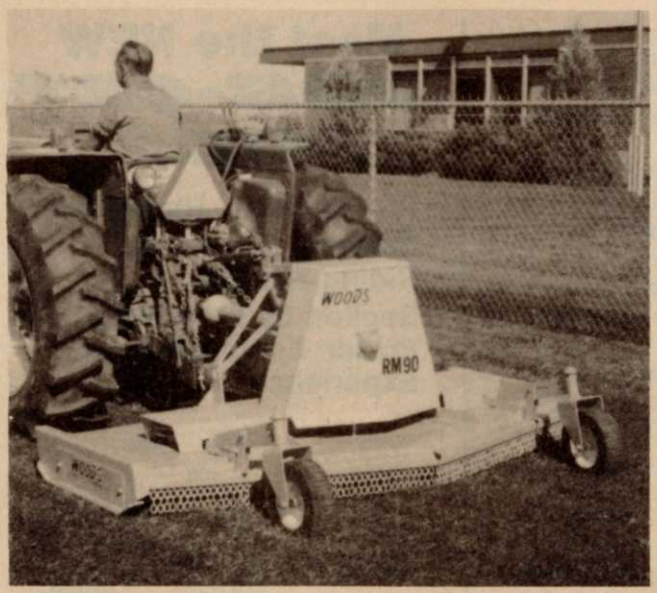
(5) **Adjustable.** The emitter can be individually adjusted for water flow.

(6) **Twin wall.** This system consists of a double tube. The inner tube, about an inch in diameter, carries the main water supply. Water leaks through holes at regular intervals into the smaller passageway in the outer tube. From this outer passageway the water escapes through the outer wall, which has about four times as many holes as the inner wall, under greatly reduced pressure.

Small emitter orifices and low water pressure are common to most systems, Davis noted. All of them require pressure control and filtration systems.

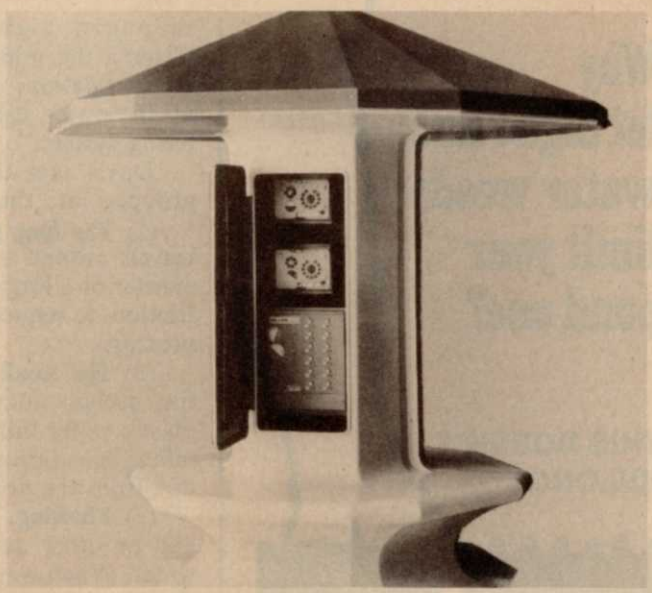
The 2nd International Drip Irrigation Congress in July, meeting at San Diego's Sheraton Harbor Island Hotel, will have the most comprehensive exhibition of drip irrigation equipment of any showing to date, according to Davis. The equipment exhibits will open July 11 and remain on display through July 13.

More than 90 papers will be presented during the Congress program. Researchers from 14 foreign nations and the U.S. will present papers categorized into



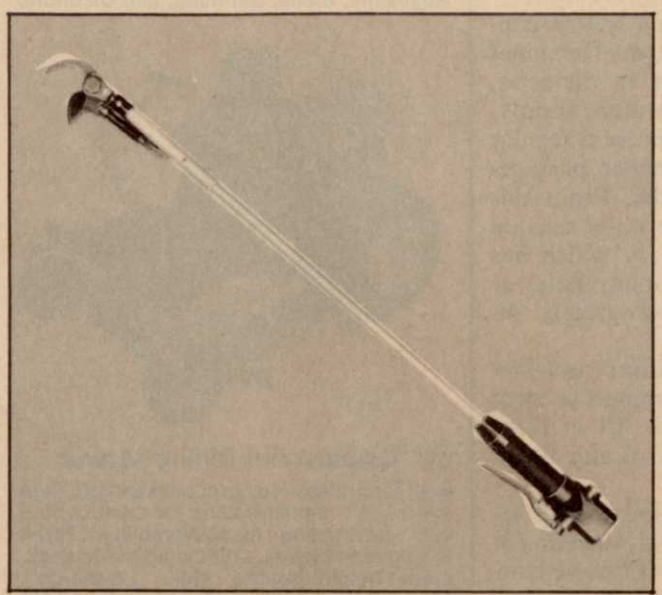
REAR-MOUNTED LAWN MOWER: Woods Division of Hesston Corp., Oregon, Ill.

The new model RM90 covers a 7 and one half foot cutting swath. The blades overlap for a smooth, clean cut that leaves turf with a freshly manicured appearance. The 3-point hitch hook-up is designed for fast, easy and safe attachment to tractors with 25 to 50 HP ratings. For more details, circle (709) on the reply card.



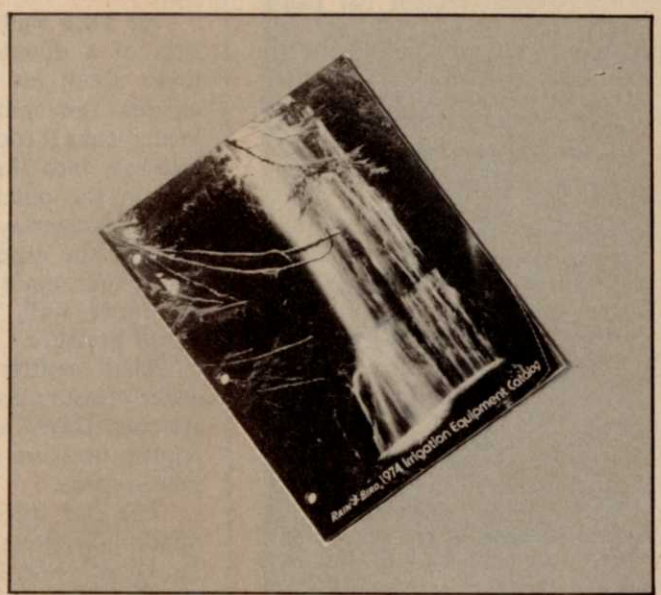
NODE-A-BODE: F.G.F. Corp., St. Charles, Ill.

Here's a golf course irrigation shelter that doesn't look like a big green tombstone. This unit is constructed from tough fiberglass and doubles as a tee bench. The overall height is 8 and one half feet with a roof diameter of 8 feet. It is available in a choice of colors for both roof and body to blend with any landscape. For more details, circle (710) on the reply card.



TREE PRUNER: New Draulics, Inc., Salt Lake City, Utah

This lightweight pruner bites off two inch thick branches instantly. The powerful, sharp jaws cut cleanly and quickly eliminating bruised and crushed branches. The pruner operates from your existing hydraulic system whether you own a truck, tractor, aerial lift or hydraulic power unit. For more details, circle (711) on the reply card.



IRRIGATION EQUIPMENT CATALOG: Rain Bird Sprinkler Mfg. Corp., Glendora, Calif.

This fully illustrated product catalog contains a complete and comprehensive description of the entire Rain Bird line of controllers, valves, sprinklers, accessories and hose. An appendix provides a ready source of detailed data on the more complex controllers, along with informative wire sizing and reference charts. For more details, circle (712) on the reply card.

seven subject areas: drip irrigation progress; methods and mechanics; physics and hydraulics; water use; salinity; fertilizing; and crop response.

The Congress program includes A one-day field tour of drip irrigation installations in greenhouses, orchards, vineyards, vegetable fields, and nurseries. The tour will be limited to 250 persons, and preference will be given to out-of-country and out-of-state guests.

The Congress is being co-sponsored by the USDA - ARS and the University of California. Preregistration is $25 for the Congress participants and $10 for their spouses. Deadline for preregistration is June 1. Registration fees after June 1 will be $35 and $10. Preregistration materials and a preliminary program for the Congress can be obtained by writing to International Drip Irrigation Congress, P.O. Box 2326, Riverside, CA, 92506.

Nitrogen Saving Solution

Many sod growers are looking for ways to conserve the use of nitrogen fertilizers they have available. One fertilizer-saving answer is a new nitrogen management product to be marketed by Dow Chemical.

According to the company's researchers, the key is in inhibiting the action of soil bacteria that rapidly convert ammonium nitrogen to nitrate ions. These ions are readily leached from the soil or converted to nitrogen gas and lost to the atmosphere. The rate of nitrification depends on weather conditions, soil type and condition, time of fertilizer application and other factors. Losses greater than 25 to 30 per cent fall-applied nitrogen fertilizer are not uncommon.

With the use of N-SERVE, Dow's new product, the ammonium nitrogen is slowly converted into nitrates and is more readily available for plant growth in a controlled amount over a long period of time. Plant losses can be reduced and yields increased because the nitrogen is available longer in the plant root zone.

Waterhyacinth Clearance Announced by Rhodia

The Environmental Protection Agency recently accepted two products manufactured by Chipman Division of Rhodia, Inc., for control of waterhyacinth. The products are Visko-Rhap Oil-Soluble Amine A-3D and Chipman 2,4-D Amine No. 4.

Visko-Rhap is a controlled drift formulation product for use where susceptible crops are growing nearby or in areas where drift may harm ornamental trees and shrubs. 2,4-D Amine No. 4 can be used in areas such as marshes where drift will not cause problems.

Both products can be applied by air, boat or ground sprayer. However, the company advises that you consult your state game and fish or water control agency prior to application.

Swift Forms Trade Unit

Worldwide shortages of fertilizers, fertilizer raw materials and other basic chemicals have necessitated the formation of international trade units by many U.S. companies. Swiftchem International, one of the newer overseas trade units, was established to place Swift in a position to deal directly with key material sources in other countries.

The new overseas trading organization will be a division of Swift Chemical and will headquarter in Chicago.

Edward R. Vrablik, president of Swift, said that "in the near term, growth of domestic fertilizer industry sales volumes will depend upon expanded imports, particularly nitrogen materials and possibly potash and selected grades of complete fertilizers."

Toro, Spartan Fund Study

In an effort to ensure the continuation of research into the mysteries of turfgrass shade adaptation, the Toro Co., of Minneapolis, and Spartan Distributors, Sparta, Mich., presented Prof. James B. Beard, of the Dept. of Soil and Crop Science at Michigan State University, with a $4,000 grant.

Beard hopes to discover how grass adapts to shade or what can be done to breed grass best suited to growing in the shade.

A piece of cake it ain't. But these signs were designed to celebrate the Westchester Tree Protective Association (New York) on its 40th anniversary. From left: H. Palmer Starner, Harrison, N.Y., Jack Flanagan, Elmsford, N.Y., current president and John Crockett, who designed and made the signs.

Experimental Insecticide Controls Japanese Beetle

Fensulfothion, approved for control of nematodes, proved the best of 15 insecticides tested last year at the USDA Station in Wooster, Ohio for control of Japanese beetles resistant to approved insecticides.

There are increasing reports of Japanese beetle populations developing resistance to cyclodiene insecticides like chlordane, dieldrin and heptachlor. Fensulfothion has not been approved for control of Japanese beetles.

Kenneth O. Lawrence, USDA entomologist in the Agricultural Research Service, recently reported on work conducted in cooperation with Harry D. Niemczyk, entomologist at the Ohio Agricultural Research and Development Center in Wooster. Lawrence spoke at the 1974 meeting of the North Central Branch of the Entomological Society of America.

Ten insecticides were applied on the golf course at Wooster on August 24, 1972. Fensulfothion applied at the rate of 10 pounds per acre gave 100 percent control by October 16. Diazinon was next best with 79 percent control.

Fifteen insecticides were tried against resistant grubs at three locations in April and May 1973, when most of the larvae were in the third stage. Fensulfothion at 10 and 6.4 pounds per acre gave excellent control.

"Aside from three other experimental compounds," Lawrence said, "nothing approached the activity of fensulfothion where the thatch layer was a half inch or more thick.

In other 1973 tests on golf courses, fairways were treated with 1, 2.5, and 5 pounds of fensulfothion per acre. "We consistently obtained excellent and rapid kill," Lawrence said. We showed that spring applications retain efficacy throught the summer and will control the new generation.

After one calendar year the 10-pound rate showed evidence of breaking down and killed only 63 percent of the new generation. Futhermore, granules applied at the 1 and 2.5-pound rates at one golf course remained on the surface for periods of 7, 11, and 15 days during the heat of August before rainfall washed the toxicant into the soil.

It was back to school for the distributorship personnel of Hahn, Inc. A recent series of service schools was conducted to train its representatives in the maintenance and servicing of its turfgrass equipment. Hopefully the trainees will use the expertise gained from this advanced course to instruct individual groups of golf course superintendents and other key maintenance people in the care of Hahn equipment.

Essentials of Borrowing

By DR. ERIC LAWSON*

WE ALL BORROW money. Our needs may be different and the risks associated have different limitations. For every so-called rule-of-thumb to borrowing, it is possible to find a firm which has violated the rule and benefited. Yet, it is useful to look at the general rules which have wide use.

For short term temporary purposes, a cash budget is a useful device for determining both the amount and length of need.

One problem faced by many growing firms is the need for temporary financing that grows as the firm grows. In fact, it is possible that what was a temporary need for funds one year will become a permanent need later on. Permanent needs should not be financed from temporary sources. Borrowing should not take place unless there is a need — and no more should be borrowed than is needed.

The need for long term funds should be basically determined on the grounds of profitability of the proposed capital projects. No funds, borrowed or otherwise, should be invested in unprofitable projects. Once the prospective profitability has been determined the remaining decision depends on the alternatives and their relative attractiveness.

The small firm generally has few alternatives since it does not have access to the major capital markets. Even so, cost should be a factor to keep in mind. If the funds are available only on excessively prohibitive terms they should be rejected. The ability of the firm to generate the cash flow necessary to meet the requirements is an important consideration — and must be determined.

Small firm credit funds are most readily available from commercial banks. This is particularly true of short term funds. Banks are in the business of making short term loans and the good banks are aggressively seeking new customers.

The ideal arrangement for both the bank and the customer is one in which the customer knows in advance the maximum amount he may borrow during the year, although he may not wish to borrow the maximum amount for a long time, if at all. Many bankers will say that most of their lending experience involves making an unbankable loan application into an acceptable deal. This process generally involves arranging for some kind of security for the loan.

Commercial banks are also a source for long term funds, almost always secured by a mortgage. Frequently a bank knows of other sources, such as an insurance company, where the funds may be obtained if the terms are right. Other sources of long term funds include special industrial corporations, the Small Business Administration and specialized agricultural institutions.

Term loans are available from some commercial banks. Such loans combine short and long term features. They are usually paid off in annual installments over a period of years. In this manner it is possible to match the cash flow of the firm to the loan repayment provisions.

A firm in the market for borrowing should consider that borrowing as a competitive process. It should be prepared to make full disclosure of all pertinent financial information including operating cash and capital budget for the future. The firm should consider as many lenders as possible and use the forces of competition to keep the ultimate terms as favorable to itself as possible.

The borrowing firms should recognize both the advantages and disadvantages of borrowing. The out-of-pocket costs of borrowing should be at a rate that is profitable to borrow. If a firm can use its capital to earn a 15% return it should be able to borrow at 10%. Obviously, if these figures are reversed borrowing should not take place.

The risk associated with borrowing is a basic question that must be answered. In the previous illustration the real question relates to the adequacy of the extra 5%: Is the 5% enough to compensate for the additional risk incurred by the indebtedness? If the answer is no, do not borrow; if it is yes, borrow. This determination must be made by the borrower.

**The author is chairman of the Department of Finance and Accounting at Syracuse University. This article is based from his presentation at the 1974 Landscape Management Clinic.*

These men are from Union Carbide Corporation's Aquatic Environmental Sciences Group and they're part of a unique new program from the firm. The group, known as AES, gathers information on water and offer it to consulting engineers and people responsible for water quality in industries.

Industrial Roundup Uses Approved by EPA

Monsanto Company's new Roundup herbicide has received Environmental Protection agency registration approval for industrial uses. Roundup is a postemergence, non-selective herbicide which controls a broad spectrum of annual and perennial weeds of both grass and broadleaf species.

The EPA registration permits the use of Roundup for industrial commercial applications, such as the control of weeds along highway, railroad, fuel and power-transmission rights-of-way, airport runway areas and other similar areas with problem weeds.

A company representative said that Roundup effectively controls more than 100 species of annual and perennial weeds, including perennials with well-established root systems such as johnsongrass, quackgrass, dallasgrass, paragrass, Canada thistle, bermudagrass and common mullein.

Further information for the industrial use of Roundup is available by writing to: Agricultural Division, Monsanto Company, 800 N. Lindbergh Blvd., St. Louis 63166.

Chemist Predicts Lasting Fertilizer Shortages

Shortages of one sort or another are plaguing most green industry firms. But diminishing petro chemical supplies are causing across-the-board headaches for large and small firms alike.

A recent issue of **Chemical and Engineering News,** the weekly newsmagazine of the American Chemical Society, reported that the current world fertilizer shortage will continue indefinitely, perhaps for the rest of human history.

Although this shortage is serious, it does not mean the world will have widespread famine, says Dr. Raymond Ewell, recently retired vice president for research at the State University of New York at Buffalo, and widely recognized authority on chemical economics.

"A shortfall doesn't necessarily mean that we won't have enough supplies to feed people at somewhere just above a starvation diet," he explains."But much depends on how our available supplies are divided up."

Ewell cites slowing the world's population growth as the fundamental issue we now face. And he foresees that the rate of world population growth will peak sometime during the 1970's at a little more than two percent a year.

"This will be one of the crucial dates in world history," he states. "For the first time ever, the rate will have begun to decline."

Even so, he adds, the growth rate will decline only very slowly and will probably continue at close to the two percent figure until the year 2000.

Right now, high food prices are serving as a magnet for fertilizer, the article continues. The high demand and rising prices are attracting new investment into the fertilizer industry.

"But the big question," says Ewell, "is whether this will pull in new money fast enough to keep up with demand."

The world will have to spend about $8 billion annually on new fertilizer plants and related facilities now, and about $12 billion by 1980, just to keep pace with increasing demand, he estimates.

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