Even this will not help overcome past shortages, he notes. "In addition, the competition for investment funds from nuclear power, coal conversion, and a number of other industrial projects makes it unlikely that the fertilizer industry will attract all the new capital it needs.

"Another bottleneck," Ewell says, "is the world's relatively small pool of engineers qualified to design and build large-scale fertilizer facilities." Only about 4,000 to 5,000 engineers are properly prepared, he estimates, and these must be spread over other industries as well.

While fertilizer will continue to be in short supply, the actual amount produced will rise, he says. During the next few years, capacities will increase at about seven percent a year, and by the turn of the century the industry will rank second only to petroleum in tonnage of production.

The problem is that demand will rise even faster. And in underdeveloped countries, where population is growing most rapidly, the problem will be magnified.

Ewell calculates that a country must build a new 1,000-ton-a-day ammonia plant (the basis of the fertilizer industry) for every increase of six million people. For a country like India, he explains, this means an additional two and a half plants a year, just to keep pace.

Shigo Receives Award

Dr. Alex Shigo has been given an Award of Achievement by the New York State Arborists Association. His work has received attention among his peers at universities and in governmental agencies, and he is recognized internationally for his contributions to the field of tree research.

New Jersey Sod Industry Triples in Last Decade

New Jersey's sod industry has tripled in size during the last decade, according to Roy M. Atkinson, head of the state's certified sod program.

Atkinson has conducted a survey of the sod industry every three years since 1965. The latest shows that New Jersey growers now have a total of 5,837 acres in sod produc-
Mail Order Weed Science

Dr. Harold Alley, University of Wyoming, has published a 13-lesson correspondence course entitled *Weed Science and Technology*. The course emphasizes use and mode of action of herbicides.

Chapters in the bound study book also cover environmental implications of weed control, plus registration and safe application of herbicides. Three examinations, including a final, are mailed during the course. The syllabus contains a weed science glossary, herbicide compendium and index. For more information contact: Correspondence Study Department, University of Wyoming, Laramie, Wy. 82071.

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Toro Company has initiated a mobile service concept designed to eliminate costly down-time for turf maintenance equipment. These mobile units, fully equipped and staffed by factory-trained specialists, provide emergency as well as scheduled service for turf equipment users.

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2 sec. quiz:
Which irrigation cover will look better in your turf?

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That's why thousands are in use today coast-to-coast. Bought for their benefits. Blending beautifully with their turf.
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Nematode (from page 31)
exist with 25 pounds of DBCP per acre on fairways and 36 pounds on greens.

How about repeat treatments? A superintendent manager who is growing grass for a golf course has to grow good grass. If he is having nematode problems and he fumigates, he is going to grow better grass. Once he starts growing better grass, he can't take a chance of having it go bad, so he treats as needed.

"I think a club can pay for the cost of the injection and material with savings from water, fertilizer and other chemicals need in trying to solve the problem. We can definitely see this in stress periods during hot summer months. You can usually walk to the spot where the fumigation occurred because that is where the grass is greener," Horn explained.

Yancey believes he can save up to 50 per cent in fertilizer. Through January, Yancey said he had not fertilized the Ocala course since early last summer. Normally he has to apply it three times a year in northern Florida, while it was necessary every month in southern Florida.

While this discussion covers primarily Florida, Horn serves widely as a consultant, mainly in the South where the nematode problem is apparently more severe. However, Horn believes nematodes exist in more northern golf courses than is generally realized. Research into the problem in the North has been
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*Bonnieblue, Majestic, Sydsport and Birka Kentucky Bluegrasses and Koket Chewings Fescue.

For More Details Circle (162) on Reply Card
The initial response to the injection will be browning at the sight of application. The turf usually closes in completely in 4 to 8 weeks.

Nematodes (from page 52)

limited, primarily because of the belief that lower temperatures and a shorter growing season limit the opportunity of the nematode colony to build up. Perry has conducted some research that indicated significant nematode problems do occur on greens and fairways in the Midwest. Vigorous turf provides the best weed control anywhere, and a healthy turf is within reach of everyone, Horn concluded. Nematode eradication is part of the insurance package.

Trees (from page 20)

such as ammonium sulfate, sulfur, aluminum sulfate or sulfuric acid. Iron sprays will green up the foliage with which it makes contact. However, leaves that develop after the treatment are generally yellow. Sprays containing chelates are generally unsightly and therefore not too desirable. Treatments used to change the pH of the soil are slow with the exception of the sulfuric acid treatment which is rather critical and must be applied with caution. The best results have been obtained by the use of soil treatments, particularly with the use of iron chelates. However, these remedies have not been without their disappointments. Presently, the suggested treatment is the use of iron chelates or iron sequestrians adapted for use on alkaline soils. These products should be applied in early spring before or just after growth starts and at concentrations recommended by the manufacturers.

The use of iron-containing capsules inserted into the trunk of chlorotic trees has also shown promise. A number of holes are bored into the trunk of the chlorotic tree, with the aid of a high speed drill. The holes should be deep enough so that (continued on page 56)
People on the move

GAIL C. OLSEN, named director of customer service for the pipe and plastics group of Certain-teed Products Corp. Olsen will be responsible for all customer service and billing functions within the group.

CLEMENS C. OTTEN, joins Ciba-Geigy’s agricultural division as a market planning specialist. In other company moves VERNON WILBUR SEIM named field research representative in the northeast region. He will be responsible for research and development programs in Ohio and Kentucky. BOBBY JOE (BOB) CONNER, promoted to research specialist. His new position will involve researching plant growth regulators and micronutrients.

JOHN C. KRUG, appointed general service manager for Jacobsen Manufacturing Co. He replaces ROY PAUR, who retired after 47 years with the Racine firm.

GERALD C. OGREN, promoted to factory manager for Ryan Equipment Co. EDWARD E. SQUIRE, named material control manager. KEITH H. RHODES, hired as engineering manager for the turf care products division. Rhodes was previously employed with J.I. Case.

ROBERT W. BENNETT and SHERMAN K. REED, elected vice presidents of FMC Corp. Bennett will remain manager of the agricultural chemical division and Reed will continue as chemical group technology director.

EUGENE E. TAYLOR, promoted to director of the marketing agricultural business group of Velsicol Chemical Corp. His responsibilities include advertising, promotion, merchandising, market planning and market research.

BILL W. LINGREN, joins ICI America Inc., as a technical sales representative in the marketing department of its agricultural chemicals division.

NEAL D. CRANE, elected vice president of Allegheny Ludlum Industries, Inc. He will be responsible for the consumer products group and chairman of the board of Jacobsen Manufacturing Co. FRED W. SCHNEIDER, elected president of Jacobsen. Schneider has been president of the Lockwood Corp since 1968.

P. C. DUSSOL, appointed divisional director of materials for the outdoor power equipment division of the Toro Company. Dussol will coordinate production and inventory controls.

CECIL E. BAYLOR, assumes the new position of manager of the agricultural staff of the Vistron Corp. JACK W. BROWN, promoted to manager of agricultural services. TOM P. CHRISTEN, named manager of employee relations and advertising for the company’s agricultural chemicals division. HAROLD W. PAULSON, named manager of sales operations at the Lima, Ohio, headquarters.

JUNE 1974
the capsules when inserted will be situated in the sapwood with the head of the capsules flush with the cambium. This will allow the iron citrate to be dissolved in the sap and translocated to the leaves. Capsules inserted during the early stages of growth have produced positive results in 10 days or less.

Information for the correction of manganese deficiency is not as readily available since Mn deficiency of ornamental trees is not too common. But the use of manganese sprays has been effective in “greening up” the foliage. However, the use of manganese chelates injected into the soil in the spring should produce more lasting results.

Trees in well maintained turf areas are probably not starving to death. But in areas where turf is being irrigated with water that has a high pH, it is possible that certain species of trees may be lacking in iron or manganese. These deficiencies can be corrected by the use of Fe or Mn chelates or by inserting iron-containing capsules into the trunks of trees.

**BONDS**

In order to satisfy itself that you can perform a surety must inquire into and satisfy itself as to your:

1. **Background and history**
2. **Your organization**
3. **Your equipment or the availability of equipment**
4. **Your business acumen**
5. **The adequacy of your professional, i.e. legal, accounting, etc., advice**
6. **Your cost records and internal accounting system**

Similarly, in reviewing your ability to pay your bills the surety must satisfy itself as to:

1. **Your credit history or how you have paid your bills in the past**
2. **Your available bank credit**
3. **Your corporate or personal finances**

Since your ability to perform, once questioned, is rarely tested on a regular basis the emphasis in the long run rests on your continuing ability to pay your bills and finance new work. The more financial data you furnish a surety the more confidence you will engender.

For instance, your fiscal financial reports are going to carry more weight than your interim financial reports. There are a lot of reasons for this but it all boils down to the fact that if you have really made a profit you will have to pay a tax on it. If you are paying taxes you are making money. Now, there are four methods of recognizing income, namely:

- **Cash**
- **Accrual**
- **Percentage of Completion**
- **Completed Contract**

You can be on one method for taxes and another for credit. This is fine. But at the end of your fiscal year the surety can review your reported and unreported profits, determine what tax might be due on your unreported profit and arrive at an honest net worth or working capital for your company. The figure which they arrive at should not be what determines the amount of surety credit you receive but it will help them to determine your ability to pay your bills and finance new work.

Scheduling in a financial statement is almost a prerequisite since (continued on next page)
When answering ads where box number only is given, please address as follows: Box number, c/o Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

Rates: All classifications 50c per word. Box number, $1. All classified ads must be received by Publisher the 10th of the month preceding publication date and be accompanied by cash or money order covering full payment.

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4-FITCHBURG BRUSH CHIPPERS, six inch by 12 inch, mounted on trailers with Ford six engines — $2,000 each. Will fit on both ways — $24.00 plus postage. Made lo boll on both ways. $24.00 plus 5 years lieid Experience. Overall knowledge of private, municipal and utility field. Hospitalization, vacation, company vehicle. Salary plus. Send resume and photograph to James W. Taylor Tree Surgery, P.O. Box 311, Walden, N.Y. 12866.

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We want a man who can work independently and is knowledgeable in the commercial turfgrass industry. Must have experience and proven sales ability. 30 weeks air travel yearly, balance in office. All weekends at home. Qualified man can start at $20,000 yearly. Travel expenses paid. Send resume in confidence today. We will call you. Our staff is aware of this ad. Write WTT, Box 119, 9800 Detroit Ave., Cleveland, Ohio 44102.

DISTRIBUTORS for D. J. Andrews, Inc. stump cutter teeth, pockets and bolts. Best wholesale and retail price in U.S.A. Add to this exclusive local advertising at our expense, etc., and you have our story. D. J. Andrews, Inc., 17 Silver St., Rochester, N.Y. 14611. Call 716 235-1230, or 716 436-1515.

MISCELLANEOUS

TREE APPRAISALS, Surveys, loss evaluations and expert consultation services. For names of members of the American Society of Consulting Arborists, Inc., throughout the country, contact: Executive Director ASCA, 12 Lakeview Ave., Milltown, New Jersey 08850.

BONDS (from page 56)

the supporting schedules tell what goes into the make up of the balance sheet items. And, if we had to pick the most important we would pick a line with what you normally do. The final item a surety must consider in evaluating a surety case is the job itself. What is the job? Is it in line with what you normally do? What is straight material purchase? How does the scheduling of the work fit in with your other work? Is it 1-3 years old. "Big J" Sod harvester, Daymon sod rollers. Frank Deak Sod Loaders, R1, Limon Grove, Wisc. 53162. Phone 414 895-2446.

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LOVE CONQUERS ALL. A young Georgia couple stood before the Justice of the Peace and repeated vows and exchanged rings which bound them in matrimony. The scene was witnessed by a well-wishing throng of 100-150 persons. The setting was the No. 9 green of the Northwood Golf and Country Club in Lawrenceville, Ga.

Unusual, this wedding on a golf green? Not really. And yet, unusual because of all the participants.

The Justice of the Peace walked onto the green and stationed himself at the flagstick. A procession of five, blue and white streamer bedecked golf cars drove up from the south end of the clubhouse, headed north in front of the Pro Shop and dining room turned west down the car path to the level of the green, circled it, and one by one the cars deposited their passengers to join the Justice of the Peace. First, the groom stepped out, then in order, the flower girl and ring bearer, the mother of the bride and the mother and father of the groom. Then to the strains of “We’ve Only Just Begun” sung by a soloist, the father led the radiant bride down the steps to the green and placed her hand into that of the groom. Each promised to love and honor the other and the Justice pronounced them man and wife.

Unique, you say? Yes, because each of the participants is intimately connected with golf at Northwood Club. The bride is the daughter of Northwood’s course superintendent and the groom’s boss. The soloist is the daughter of Northwood’s club manager.

DID YOU KNOW that the average 18-hole golf course can provide the oxygen required by a town of 7,000 people? Philip A. Wogan, chairman of the Environmental Impact Committee of the American Society of Golf Course Architects, pointed out that golf courses have also been used to recreate areas of beauty where former scars once existed — sanitary landfills, strip mines and gravel pits.

“In many densely-populated areas, the golf course also serves to moderate the effects of noise pollution.” The Society is finding that many environmental changes aren’t harmful to an area, but merely change its character.

GESUNDHEIT! EPA scientists are studing fish “coughs”, a naturally-occurring phenomena which has stirred the interest of the agency’s water quality specialists. The coughing, which is actually a normal gill-clearing process to remove debris which has settled on the gills, is a natural action for many fish, including all species of trout and salmon. “The ultimate use of our findings,” said an EPA biologist, “could be a system for keeping tabs on concentrations of complex industrial wastes entering lakes and streams from waste treatment plants and industry. A sudden increase in fish coughs within a given body of water could trigger an alarm to warn plant personnel that potentially damaging effluent is leaving the plant.” I wonder how you say help in fish?

HOW BIG is the turfgrass business in Virginia? According to a 1973 report on a turfgrass survey conducted by the Virginia cooperative crop reporting service, turfgrass in Virginia is a $524 million industry. This includes $68 million spent for maintenance; over 58 million hours of unpaid family labor for the year valued at $94 million; new area establishment costing over $27 million and a replacement value for equipment of $333 million. Included in the replacement value for equipment is over $63 million for new equipment purchased. Commissioner S. Mason Carbaugh of the Virginia Department of Agriculture and Commerce notes that the total consumption of peanut butter and peanut butter sandwiches has topped 600 million pounds, according to the Georgia Peanut Commission who keeps tabs on these things. The demand for peanut products is at an all time high. Not since the end of WW II has the consumption rate increased so fast.
"The course looks great this summer."

"And he seems to be spraying less often than before."

This summer, give your members two things they will really appreciate. A green, healthy playing surface and far less interference from spraying equipment.

You can, if you take the second step in the Du Pont TERSAN® 1-2-3 Disease Control Program and start spraying TERSAN 1991 on your tees, fairways and greens now. It does an outstanding job of controlling Dollar Spot and Large Brown Patch. Used as directed, it can actually stop these summer turf diseases before they have a chance to damage your turf.

On greens and tees you reduce spraying time sharply, because you apply TERSAN 1991 only every 10 to 14 days. This Du Pont fungicide combines preventive and curative (eradicant) properties for better, longer-lasting disease control.

With this second step in the TERSAN 1-2-3 Program, along with the first and third steps taken in the spring and fall, you control all major turf diseases on all turf grasses all season long. (Should conditions for Pythium occur, at any time, an application of TERSAN SP will prevent or eradicate it.)

The TERSAN 1-2-3 Program is effective, economical and complete. For details and a supply of TERSAN turf fungicides, contact your golf course supplier today.

With any chemical, follow labeling instructions and warnings carefully.

TERSAN 1-2-3 DISEASE CONTROL PROGRAM