

NEW! PARK-TYPE PEDESTAL FOUNTAIN

Vandal-resistant
fittings

Stainless steel

Easy-to-install

MODEL No. 6837. Tapered
base and top of stainless steel.
Write for complete submittal
sheets.

Halsey Taylor

THE HALSEY W. TAYLOR CO.
1630 Thomas Rd., Warren, Ohio 44481



For more information circle number 185 on card

Beauty Reflects Their Performance



HILLERICH & BRADSBY CO.

P. O. Box 506

Louisville, Kentucky 40201

Sold exclusively in pro shops

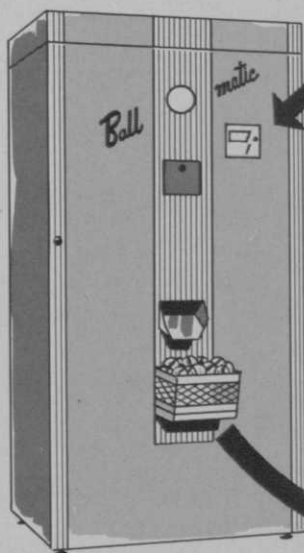
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Space Saver - Money Maker

• Accurate ball count

• Maintains inventory
control

- Every ball used is paid for
- Makes money from 1st day of operation
- 100% money control
- Increases ball life by rotation of stock
- Decreases labor cost
- Increases storage space



The improved Ball-o-Matic automatic golf ball dispensing machines are rolling off the assembly line in South Bend. The new 2D models are equipped with a new long life, service-free electric coin drop which eliminates jamming and unnecessary downtime. If profit is your goal — use a rifle, not a shotgun. Take a good look at the Ball-o-Matic line. The dollars you save will be your own.



For information on valuable territory, circle Reader Card or write to Carl Shellhouse, Vice-President, Marketing.

THE VIKING CORPORATION, P.O. Box 3628, South Bend, Ind. 46628

For more information circle number 267 on card

Skinner has been planning the world's finest automatic irrigation systems for a long time.

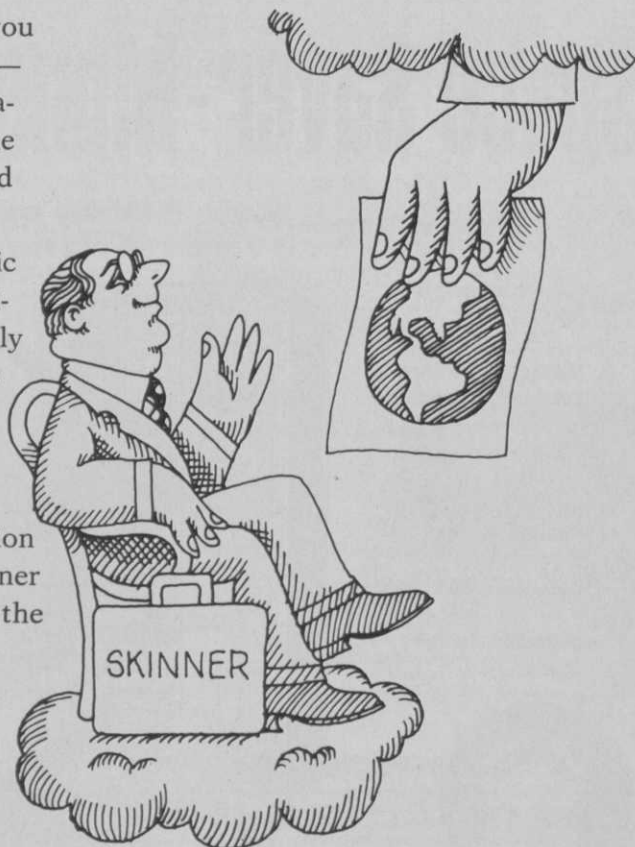
And because we spend a longer time planning, you always get an irrigation system that's as right as rain—and then some. From planning to designing to installation, we leave nothing to chance. We do it right the first time so you're not stuck with a lot of service and reworking expenses later.

We specialize in the big jobs—golf courses, athletic fields, playgrounds, cemeteries, institutions and colleges, estates and farms. And we make the finest fully automatic systems you can find anywhere. All top quality materials that scientifically produce the right amount of water at the time you need it, every time you need it.

If you're thinking about installing an automatic irrigation system, talk it over with an expert first. Your Skinner representative. He can help you make rain while the sun shines.

SKINNER

The Skinner Irrigation Company,
Div. Ashley F. Ward, Inc.
2530 Spring Grove Avenue, Cincinnati, Ohio 45214
Fine irrigation products since 1896



"YOU SAY YOU'D LIKE US TO BEGIN WORK THE THIRD DAY."

For more information circle number 134 on card



Turfgrass research review

by Dr. James B. Beard

Effects of cutting and nitrogen levels on bluegrass varieties

Performance of Bluegrass Varieties at Two Cutting Heights and Two Nitrogen Levels.

R. L. Goss and A. G. Law. *Agronomy Journal*. 59(6):516-518. 1967. (from the Department of Agronomy, Washington State University, Pullman, Wash. 99163).

The game of golf demands a closely mowed, high quality turf, which is achieved through intense fertilization and irrigation. Field investigations were conducted to determine the influence of cutting height (0.5 and 1 inch) and nitrogen fertility level (2.4 and 8 pounds of actual nitrogen per 1,000 square feet a year) on the growth and development of the more erect growing versus the prostrate growing Kentucky bluegrass varieties. Park and Delta Kentucky bluegrasses represented the erect type of growth habit while Newport and Merion plus several experimental selections were of the low growing types. The nitrogen treatments were applied in four equal applications during the growing season with urea being the carrier. The data collected included shoot density, shoot growth and root growth.

A comparison between the varieties utilized in this test indicated that Merion produced the least total quantity of shoot growth. It

should be noted that a high quality turf is not necessarily one which has a high rate of shoot growth. In fact, a lower rate of shoot growth would be preferred to reduce the mowing frequency. However, a certain amount of shoot growth is desirable in order for the plant to recover rapidly should an injury occur. Newport, a low growing variety, produced the greatest amount of roots and rhizomes. The erect growing varieties, Park and Delta, produced the least quantity of roots and rhizomes. Merion was intermediate in total root production.

Higher nitrogen levels resulted in increased shoot density and shoot yield, but significantly reduced the quantity of roots produced. The lower cutting height also reduced the quantity of roots produced. In general, the low growing varieties had a higher root-shoot ratio. Also, the lower growing varieties included in this test tended to respond more to higher nitrogen fertility.

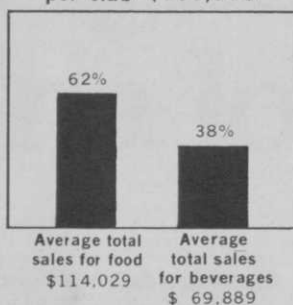
Comments: This paper illustrates one of the fundamental principles guiding the culture of turfgrasses. The growth of roots and shoots is closely integrated and can be altered considerably by cultural practices. The roots are dependent on the shoots to provide carbohydrates for growth, while

the shoots are dependent primarily on the root system for the absorption of nutrients and water. Both the root and shoot systems require carbohydrates for growth. Under conditions where the quantity of available carbohydrates is less than that required for root and shoot growth, the meristematic growth regions of the shoot which are closest to the photosynthetic tissues assume priority in utilization of the carbohydrates. Thus, shoot growth occurs at the expense of the root system and may even cause dieback of a substantial portion of the turfgrass root system.

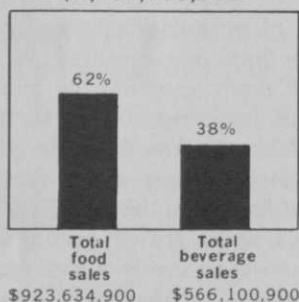
Close, frequent mowing or high nitrogen fertility levels will over stimulate shoot growth. Since shoot growth is generally inversely related to root growth, the result is a reduction in the root system. Although a reduced root system is not significant in visual, above ground turfgrass quality, it can be extremely important under adverse conditions caused by turfgrass pests, environmental stress or traffic. A deep root system is not necessary for the maintenance of a high quality turf, but does greatly facilitate and minimize the management problems and costs involved in maintaining a quality turf.

STUDY ADDS FACTS AND FIGURES

National average total sales of food and beverages per club \$183,918



Total sales for food and beverages \$1,489,735,000*



* based on 8,100 facilities serving food and beverages

An undertaking of the size and scope of GOLFDOM's First Annual Marketing and Research Study, published in the February issue of GOLFDOM, marked the first full-scale attempt to produce an overall marketing statement about the golf industry.

Editorially, we recognize that the path we chose to take would be fraught with hazards, which many times accompany such an initial undertaking. Thus, in certain computations, the study went awry, and the editors feel these areas should be corrected now.

In the section dealing with the club pro, a chart showed that prize money contributed 7.1 per cent to the pro's gross dollar volume. In fact, what is meant here is that 7.1 per cent of the pro's income comes from prize money. Moreover, this only appears to be true of one-third of the pros who replied to GOLFDOM's study and who earned prize money within the year. The remaining two-thirds gave no figure because possibly they have no prize money earnings.

In the article dealing with club

managers, total sales of food and beverage on an average were given as \$183,918 per club. This figure is based on an estimated 8,100 clubs and golf facilities serving food and beverages of some variety. Not all of the nation's 9,400 facilities (as of December, 1967) serve food and beverages.

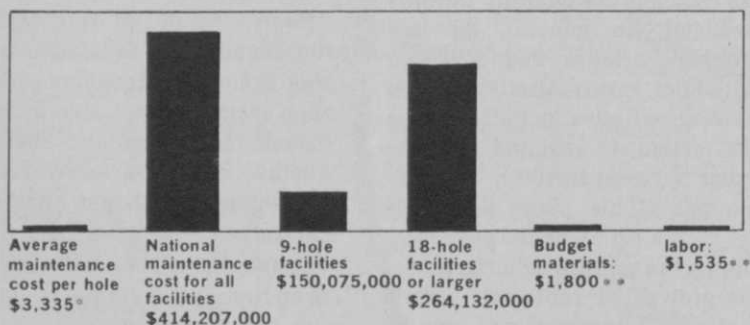
In the superintendent's category where cost of maintenance per hole is computed at \$3,335, nationally this figure should be \$150,075,000 for nine-hole facilities and \$264,132,000 for 18-hole facilities, or a grand total of \$414,207,000.

The per hole figure breaks down to \$1,800 for materials and \$1,535 for labor. The labor figure is a lesser figure because it does not include superintendents' salaries.

GOLFDOM's study indicates that of the nation's 9,400 golf facilities, only 7,100 have golf cars. On this basis, the study reported the average number of cars per facility at 28.1. In the February issue this figure was incorrectly listed as the average of

Continued on page 77

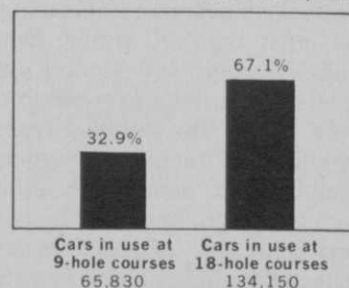
Golf course maintenance costs



* using a base of 9,400 golf facilities

** exclusive of superintendents' salaries

Total number of cars in the United States about 200,000*



* cars only at approximately 7,100 facilities



We've led the field for 54 years...

but what have we done for you lately?

Very little as far as the TORO 76" PROFESSIONAL® is concerned.

Because we just can't improve on what's become the standard of the industry. We may change a specification here and there—improve the trim, but when you've got something good going, you don't change just for the sake of change.

It's a true "PRO" in terms of smoothness of cut, maneuverability and handling ease. Cuts a full 76" swath—mows up to 20 acres a day of wide open mowing.

Pivot power steering makes tight turns and close trims a breeze. Squeeze one of the hand levers... the PROFESSIONAL turns quickly right or left. A slight finger pressure steers it along a gentle curve. Tighten the fingers a bit more and the PROFESSIONAL spins on its own axis. The result: less operator

fatigue, greater efficiency (saves valuable time, gives you better results).

The PROFESSIONAL has paid for itself in a single season (in many cases) in labor costs alone!

So if you're in the market for a medium width, multi-reel mower, think TORO.

P.S. TORO is also a leader in automatic underground sprinkler systems for golf courses, athletic fields, parks and industrial property. Your TORO distributor has all the facts.

**We keep thinking of you.
That's how we keep our reputation.**

TORO


Minneapolis, Minn. 55420



“Nearly 9,600 pounds-- and not a mark on the turf!”

“I could hardly believe it when they tested a loaded Champion Doo-All Trailer on our No. 11 fairway,” said Steve Zappe, Greens Superintendent at the Springfield (Ohio) Country Club.

“We had about 12 inches of rain in three weeks. The morning before the test, the course was closed because of standing water.

“I let them run the trailer only in the rough at first, then down the edge of the fairway and, finally,

right down the middle. There was not a mark on the turf — you couldn't even tell where the Terra-Tires had passed. My shoe heels were actually doing more damage than the Doo-All loaded with two yards of sand.”

Could you use this gentle work-saver on your course? Models in $\frac{3}{4}$, 1, $1\frac{1}{2}$ and 2 cubic yard capacities, convertible to flatbeds, and all with **Terra-Tires.**

ORDER FROM CHAMPION OR YOUR EQUIPMENT JOBBER



THE CHAMPION COMPANY
Springfield, Ohio 45501

DOO-ALL TRAILERS—WHERE FINE TURF NEEDS EXTRA PROTECTION

Study adds

Continued from page 74

9,400 facilities. As to the number of golf cars on nine-hole and 18-hole courses, an error arose from incorrectly stating the number of nine-hole and 18-hole facilities in the country. In fact, there were some 5,000 nine-hole and 4,400 18-hole facilities in the U.S. at the end of 1967.

The ratio of golf cars at these facilities cannot be accurately computed, other than the national average stated above. The predominant usage and number of cars, as indicated in the GOLFDOM study, would be at 18-hole facilities.

The revenue that golf cars contribute to total club revenues can only be stated in terms of a percentage of individual clubs, ranging from 2.5 per cent to 4.4 per cent depending on the size of the club, location and initial price charged.

There is no way of determining how much of green fees and car rentals is expended to offset course maintenance costs. Although there is some correlation between these two factors, the scope of GOLFDOM's First Annual Marketing and Research Study was not designed to show this relationship.

Consumers view pro shops

Continued from page 39

17. Deliberated one year because of price of clubs in pro shop.

The problems that confront the golfer and the pro in reaching a better understanding that would benefit both can be pin-pointed from the words of the following letter, a letter from a respondent to GOLF Magazine's new equipment survey.

'If my swing is wrong, I want to try to the best of my ability to correct it rather than have corrected equipment for a faulty swing. This summer I wanted to

Sixty-three per cent of the golfers responding bought a complete set of golf clubs within the last three years.

buy some better clubs, suggested by an ad I saw in GOLF. I went to a pro shop and they didn't have a brochure or literature to show me, just said, 'We know, we

know.' I was interested in seeing in black and white the specs of the clubs I was getting. I finally wrote to the company and they refused to send literature and said the only one that could help me was a golf pro. A very discouraging experience. I don't think this will change procedure, but I know a lot of amateur golfers who feel the same way.' □

MOTT



There is a difference
More **STRENGTH** and **SAFETY** in the new greatly improved MOTT model 72 for 1969.

YES
there is a difference —
The new MOTT offers:

GREATER SAFETY

Lightweight, free swinging knives fold back from obstructions, thus minimizing throwing struck objects, providing greater safety.

GREATER VERSATILITY

MOTT knives provide the ultimate in mowing performance for fairways or the rough, for leaf mulching, or turf renovation.

GREATER EFFICIENCY

MOTT knives use less power because they cut cleaner with an edgewise slicing action, like any good knife should. You can use lighter tractors—better for turf, lower first cost, reduce operating maintenance cost.

Mow, more for less—greater efficiency.

Greater Structural Integrity and Safety

- Unitized frame and housing
- Heavier construction
- Improved cutter shaft bearings and mounts
- Super heavy duty gear box
- Completely shielded power train
- Rear trash deflector bar

There are others — try them all! By your own test, you'll find MOTT best!

A full line from 18" to 19' gangs.

mott
HAMMER KNIFE



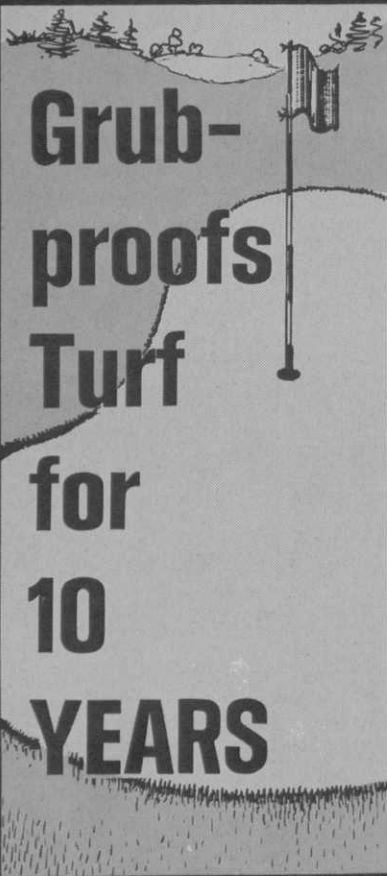
MOTT CORPORATION

547 Shawmut Avenue

La Grange, Illinois 60525

For more information circle number 206 on card

SOLEXTO



Grub- proofs Turf for 10 YEARS

ONE APPLICATION of SOLEXTO, two gallons to the acre (1-to-200 solution), grub-proofs the turf for at least ten years. Moles, too, are kept out by elimination of their food.

WHOLE SEASON CONTROL WITH ONE SPRAYING:

Solexto diluted 1 to 400 and sprayed on two to four acres gives season-long control of beetles, ants, crickets, chinchbugs, cut worms, rose chafers, chiggers, fleas, ticks, mosquitoes and many other pests.

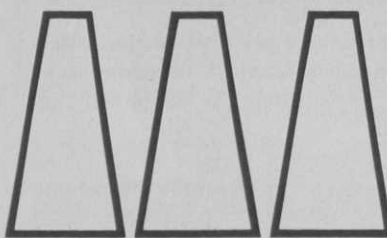
ECONOMICAL COVERAGE:

Because such high dilutions are possible, extensive coverage is very economical. Labor can also be saved by using E.W.T. Selective Weed Killer in the same solution for general spraying of turf.

Write to the C. B. Dolge Company, Westport, Connecticut for information about other insecticides; also inquire about weed killers, golf ball cleaner, mole and gopher killer.

dependable
DOLGE

For more information circle number 274 on card



NEWS OF THE INDUSTRY

ASGCA holds meeting

The American Society of Golf Course Architects at its annual meeting at the Hollywood Beach Hotel, Hollywood, Fla., adopted a definition of what a golf course architect is and should be: "A golf course architect is a man who, by education, training and experience, is in all ways qualified to design and construct golf courses which are carefully fitted to the particular site and which, through the vision and skills of the architect, provide a course well suited to the abilities of both skilled and average players."

One of the speakers was William Pack, executive director of the National Golf Foundation, who spoke on the necessity of having these standards established; and E.V. Roskam, national sales director of Metroganic Waste Company, which has developed a process for making artificial peat.

Guest of honor at the group's banquet was William B. Langford, 85, who has designed over 200 courses in his career. He was made a lifetime honorary member.

The society's purpose is to maintain quality standards in golf course design and construction.

Earnings reports

J.I. Case Company announced that in the first fiscal quarter ending January 31, 1969, net sales amounted to \$78,320,000, compared with \$70,760,000 for the same quarter last year. The 1968 figure is restated to include the consolidation of the company's French subsidiaries. The 1969 first quarter net loss of \$663,991 is less than last year's initial quarter net loss of \$808,624. Said James

L. Ketelson, Case president, "Because last year's results reflect an extraordinary credit from an operating standpoint, it is more meaningful to compare this year's loss with the 1968 loss of \$1,205,124 before the extraordinary item."

Toro Mfg. Corp. reported sales of \$14,452,000 and earnings after taxes of \$443,000 for the six-month period ended January 31, 1969. Although this figure reflects a decline from levels set for the same period last year, E.S. Conover, Toro president, said the company expects to recover the difference by the end of the fiscal year. The decline is related to the strikes last fall at the Toro plants in Windom, Minn., and Springfield, Ohio, when both were inactive for 12 weeks.

GT & R expands plant

The General Tire & Rubber Company's chemical/plastics plant in Jeannette, Pa., is undergoing an expansion program which will, reportedly, cost a million dollars. The new construction includes 60,000 square feet, doubling the current athletic products capacity and enlarging warehousing space, and new equipment and modern materials handling and conveying facilities. It's expected to be completed July, 1969.

Moves to larger plant

Giant-Vac Mfg., Inc., has purchased a 65,000-square-foot plant in South Windham, Conn., and has begun full production. The company manufactures litter vacs and blowers for home and industrial use. Future plans have been

Continued on page 84

The "can do" tractor. 39 hp Ford 3000 All-Purpose.

No specialist, the Ford 3000. Instead, it's a rugged, low-cost jack-of-many-jobs. Mowing. Spraying. Fertilizing. Even minor course rebuilding. Result? A bigger return on your investment.

Team up this tractor-of-all-work with an eye-opening parade of Ford grounds maintenance equipment: rotary cutters, flail mowers, cutterbar mowers, dozer blades, industrial loaders, scarifiers, rakes, special-purpose buckets. Get a smooth flow of power to spare from the tough 39 hp engine. "Square" in design for greater economy and durability.

On every job, you'll notice less operator fatigue. The reasons? Easier clutching and shifting. Deluxe seat. Convenient tractor hydraulic controls.

Make your grounds maintenance budget work harder with the "can do" tractor. Ask for a demonstration of the Ford 3000 All-Purpose from your Ford tractor and equipment dealer. Ford Motor Company, Birmingham, Michigan 48012.

For the name of your nearest Ford Industrial tractor dealer: call free any day, any night—Area Code 800-243-1890.

In Connecticut: call collect: 853-3600.



Ford—your key to time.
Time—your key to profits.

FORD TRACTOR



For more information circle number 251 on card



TROUBLE FREE RENTAL CART SERVICE

We furnish you all you need on rental share basis. No investment for you! We deliver and service carts regularly and keep them in good repair—FREE. Carts rebuilt yearly. Clubs not held responsible for damages, theft or breakage.

CADDY-ROLL RENTAL SERVICE

Three Rivers, Michigan



For more information circle number 202 on card

Graffis

Continued from page 37

now one of the world's wealthiest men, showed brilliant business sense and great luck when he assembled at the PGA National his all-star team, consisting of Lou Strong, managing director and head pro, Bob Thompson, house manager, and Bob McKinney, grounds superintendent. Strong has 32 on his staff.

Sale of Aurora, (Ohio) CC by Harold Paddock to club's members for \$1 million again calls attention to what stay-at-home pros are making out of courses they own. Sales of some of that course property best any tournament prize money. Recently a pro turned down \$500,000 for ground on which he had built an "executive course" a few years ago and paid off a good part of his land and building costs.

Robert C. Milligan, Gunpowder CC, Laurel, Md., was elected president of the Mid-Atlantic

Assn. GCSA, succeeding George Cleaver, Chestnut Ridge CC, Baltimore. Vice president is Russell Kerns, Woodholme CC, Baltimore; secretary-treasurer is Edward Dembnicki, Indian Spring CC, Silver Spring, Md. Directors are: Lee Dieter, Washington G & CC; Bert Yingling, Beaver Creek CC; J. Paul Barefoot, Soldiers' Home, Washington, D.C.; Robert C. Miller, Suburban CC; Dennis McCammon, Springfield (Va.) CC and George Cleaver, past president.

Angelo Cammarata, superintendent, Bonnie View CC, Baltimore CC, who began his course management career as an assistant to his father at Tavistock CC, Haddonfield, N.J., was named golf course superintendent of the year by Mid-Atlantic supers during their annual meeting. He was elected for "the way he maintains his course, his relations with the club's professional staff, manager, green chairman, officials and his fellow superintendents."

American TV contract signed

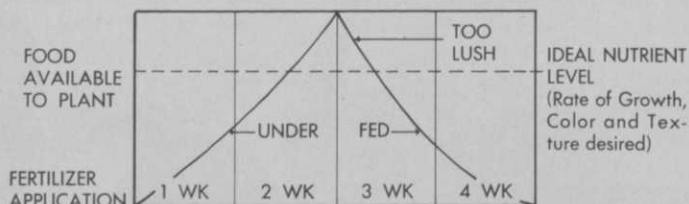
TURF DOESN'T CHEW IT'S FOOD — IT DRINKS IT!

The HYDRO-MATIC System represents a major development in the turf grass industry. For the first time, the golf course superintendent has complete and accurate control over the rate of growth, color and texture of the turf that he desires. Now it is possible to produce turf which meets the demands of the golfing industry and at the same time, save money, time and labor.

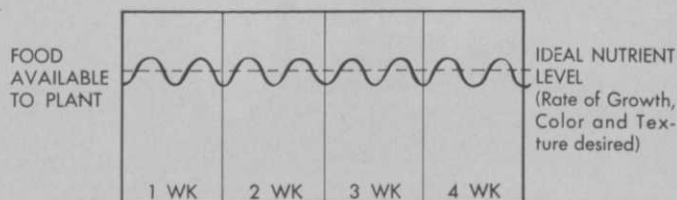
The HYDRO-MATIC System consists of a water sensing device, that precisely measures each gallon of water pumped from the main well pump. This measurement is carried electronically to the "Translator" which directs the feed control pump to automatically inject a pre-set ratio of fertilizer solution into the irrigation system in direct proportion to the water flow.

INVESTIGATE THIS MODERN,
ACCURATE TURF MAINTENANCE
METHOD . . . THE NEW
HYDRO-MATIC
System

Send for descriptive literature



WITH EXISTING INACCURATE DRY FERTILIZER APPLICATION METHODS: We have no control over plant food release (availability).



HYDROGATION SYSTEM: At each watering, you replace the quantity of plant food that the turf has used since the previous watering, thus, maintaining constant ideal nutrient levels with no waste of time, labor and fertilizer.

DOGGETT FISON COMPANY

PURCELL COURT / MOONACHIE, N. J.