IRRIGATION UNIVERSITY  
(from page 29)

Perhaps the best reason for training lies in a simply worded definition which Toro calls "the end result — A properly designed sprinkler system, which, after being properly installed, and is properly operated, applies the exact amount of water over the entire area, will not require excess labor for operation and maintenance, will be economical in first cost, and consists of components that will not require rapid replacement."

Initially, the idea of training developed out of a unique test facility for sprinkler heads which was built behind the company's manufacturing plant in Riverside, California.

"We are dedicated to the basic proposition that it is the manufacturer's responsibility to research, design, test, to find new ideas and better ways to irrigate," says Edwin J. Camenga, Toro's professor of irrigation. "We must then communicate our findings to those people who, in turn, have the responsibility to utilize our findings in the design and installation of better systems — systems that will be more efficient and will meet the challenge of water utilization and conservation."

Under that premise, Toro opened classes last semester to three groups of people: installers; landscape architects, engineers, sprinkler salesmen, park department employees, department managers, etc.; and distributor salesmen responsible in the total irrigation market. Course of instruction and course length have been altered slightly for this semester. Included for the first time are college and university instructors, golf course superintendents and other commercial turfgrass managers. (See Box, page 29)

The first year of teaching formed the building blocks for this fall and winter series of courses. Thus it would be well to examine the three groups of people who made up the original classes.

Installers: this group, more than any other, needed the greatest amount of training. In a business as simple and yet as complex as this, it is not surprising that the turnover rate among new installers is exceedingly high.

A man will become enthused with the idea of underground automatic sprinkler irrigation, invest a small fortune in time and money and then rapidly lose interest because he doesn't understand the total concept of system design, installation, selling, service, how to run a small business, how to advertise, etc. The course of instruction offered to the industry dispelled many of the fears and unknowns. Combining classroom and field work, instructors gave a highly intensified "crab" course.

Intermediate: "Students" in this category usually have had some training. They know the basics, says Bruce Camenga, Toro's professor of irrigation. What they need is additional information in new innovations such as the advantages of low precipitation, electric and hydraulic control, valve-in-head, etc. to understand how special features affect the overall cost of the system.

Advanced: Just as the new installer needs to know basics and the intermediate "student" is concerned with reduction in cost through new ideas, the advanced pupil desires greater knowledge of the marketplace itself. An extensive "seminar" was designed for the distributor salesman whose responsibilities in irrigation are market-wide. It was much more advanced, more technical and more market oriented than the other courses.

On the outside, this fall's courses of instruction appear to be a notebook and pencil affair. Don't count on it, though. "These courses are designed to get the student exposed to the greatest amount of knowledge in the shortest time," says Robert Landesman, director of marketing for the division. "Students actually install an irrigation system in the field. We expect them to physically dig in the ground and get dirt under their fingernails. We want them to completely understand every facet of the operation; to know how to problem solve a situation; to know the shortcuts and the various techniques about the job."

Like the recruit who is subjected to the rigors of military life and later turned into a fighting man, so the curriculum at Irrigation University takes the student and prepares him to accept the challenges of the field. Installers are taught drafting techniques, how to survey, types of sprinklers, sprinkler performance and spacing, application and selection, plumbing and electrical codes, drain valves, hydraulics and many other important concepts. They are then taken to the field and required to use this knowledge in installation of an irrigation system.

Training for intermediate students (continued on page 34)

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Weeds, Trees and Turf
insect report

TURF INSECTS

BROWN GARDEN SNAIL

(Helix aspersa)

NEW MEXICO: Immatures collected in yard at residence in Albuquerque, Bernalillo County. This is a new State record, and has been determined to be an established infestation.

FALL ARMYWORM

(Spodoptera frugiperda)

ALABAMA: Heavy and damaged several newly established centipede grass lawns in Linden, Marengo County. MISSISSIPPI: Larval migration into pastures heavy in Issaquena County. Growers should watch for this pest. Could be major problem due to heavy rainfall. ARKANSAS: Infestations economic, some pastures treated across southern part of State. Ranged 10-15 larvae per square foot in one pasture of Coastal Bermuda grass in Miller County.

SOUTHERN CINCH BUG

(Blissus insularis)

MISSISSIPPI: Damaged St. Augustine turf in southern counties. Heavy in Pike County.

BLUEGRASS BILLBUG

(Sphenophorus parvulus)

UTAH: Increased, caused extensive damage to lawns in Salt Lake and Davis Counties.

INSECTS OF ORNAMENTALS

NANTUCKET PINE TIP MOTH

(Rhyacionia frustrana)

KANSAS: Significant damage reported in pine Christmas tree plantings in Reno County.

CALIFORNIA TORTOISESHELL

(Nymphalis californica)

CALIFORNIA: Second-generation larvae severely defoliated shrubs, mostly ceanothus, in Placer County. First Generation defoliated several thousand acres of native brush. Adult flights very limited compared to 1972 when millions of adults were nuisance and hazard.

MIMOSA WEBWORM

(Homadaula anisocentra)

MARYLAND: Severe on mimosa and honeylocust statewide. ALABAMA: Larvae folding, webbing, and destroying much of foliage of mimosa and honeylocust statewide. MISSISSIPPI: Severe on mimosa throughout State. Seriously weakened some trees, contributing factor in death of others.

TREE INSECTS

FOREST TENT CATERPILLAR

(Malacosoma disstria)

Pennsylvania: Damaged mostly red oak. Population collapsed in Somerset, Fayette, and Westmoreland Counties. Only 50 acres moderately to heavily defoliated in Somerset County near Fayette County border. This pest believed to be cause of 2,250 defoliated acres in past two years.

ELM LEAF BEETLE

(Pyrhaltha luteola)

MISSISSIPPI: Damage to elms still heavy Statewide. TENNESSEE: Caused severe defoliation of elm trees in western area. MISSOURI: Complete defoliation of many Siberian elms occurred throughout southern and central areas. Heavy populations present statewide.

WHITEMARKED TUSSOCK MOTH

(Hemerocampa leucostigma)

WEST VIRGINIA: Larvae noted on Damson plum in Raleigh County. This is a new county record.

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IRRIGATION UNIVERSITY
(from page 31)

includes some of the concepts above plus additional technical instruction. Factors affecting cost of the system, special features of components, programming, and installation (in the field) at more difficult to irrigate sites are thoroughly covered by course instructor, Bruce Camenga.

The advanced course for distributor salesmen looks in depth at institutional, commercial and residential. It also teaches a man how to call on architects, installers, institutions and golf course superintendents. Special emphasis is placed on pump stations and service operations to which salesman are regularly exposed. Again, practical field experience is stressed because Toro believes that getting a little closer to the dirt in the field will make a better salesman in the market.

“We believe in educating all those concerned about irrigation in the Green Industry,” says Ed Hunter. “In a small way we can improve the environment by educating those who can pass knowledge on to others in the field. Whether they be an installer, an architect, an irrigation contractor or a foreign student, our goal is to broaden the knowledge of those who have a desire to learn more.”

The need for training has already been pointed out. In a larger sense, however, the Green Industry today is confronted with a growing concern about conservation of our natural resources. Preservation of water resources is a big challenge. And industry, distributors and even the public are beginning to face up to the fact that conservation is a cooperative effort.

Nine U.S. States, Canada Declare War On Pest

Scientists in nine states and Ontario, Canada, have combined forces in an all-out battle against soil insects that cost farmers and those in the Green Industry millions of dollars each year.

As of August 1, 1973, and for at least four years thereafter, researchers will look for ways to “manage” these pests without extensive use of pesticides. The Environmental Protection Agency has contributed $300,000 and the Cooperative State Research Service another $185,000 to support the research in Missouri, Illinois, Indiana, Ohio, Nebraska, Iowa, Michigan, Wisconsin, New York, and Ontario.

The North Central Regional effort was developed and will be coordinated by Mahlon Fairchild, chairman of the University of Missouri-Columbia department of entomology. “We wanted a regional research project,” he said, “because this is too big for one state to handle.”

“If we’re going to manage pests while minimizing damage to the environment, we’re going to have to know more about these pests. “Right now, our only weapons are pesticides, and many of these are being banned from use. Furthermore, pests are developing resistance to the pesticides we are using.”

The value of the regional, interdisciplinary soil pest research effort was underscored by Dr. Richard J. Aldrich, director of the UMC agricultural experiment station.

“T’d much rather see us build a good research base now,” he said, “rather than getting involved in expensive crash programs to try to stop problems after they are well underway.”

Aldrich and Fairchild believe the projects will give each participant better research information than any could get if they took on he project alone.

“We intend to keep this research program going beyond 1977 and expand it to a nationwide effort,” said Fairchild.

Fairchild started urging the multi-state effort as government regulation of pesticides and more intensified culture of agriculture and ornamental horticulture made pest control extremely complicated.

All 300,000 EPA money for supporting the research comes directly to Fairchild who subcontract and coordinates with the other states for research programs. The CSRS funding has been split up and sent directly to the states involved.

Cutrine-Plus Algaecide
Registered By EPA

Applied Biochemists, Inc. has introduced a new algaecide—Cutrine-Plus—to its line of aquatic nuisance control chemicals. The product has been registered for use by the Environmental Protection Agency.

Cutrine-Plus is a major improvement from the company which pioneered chelated and complex copper algaecides. The product eliminates sulfates, has increased stability, reduces cost of treatment and is less corrosive.

It is registered for potable water supplies; fish, farm and fire ponds; lakes and fish hatcheries. Introduction of Cutrine-Plus was made in New Orleans at the Hyacinth Control Society meeting and has been featured at trade and consumer shows.

Two recent tests point to the product’s effectiveness. While registered only as an algaecide, a Florida test found Cutrine-Plus more than 50 percent effective against the noxious weed hydrilla. In New Jersey, the product controlled curlyleaf pondweed.

It is expected that Cutrine-Plus will be available in granular form for control of chara and other bottom growing algae for the 1974 algae season.

Southern Ag. Chem. Assoc.,
To Hold Meeting

The Southern Agricultural Chemicals Association will hold their 19th annual meeting at Callaway Gardens, Pine Mountain, Georgia Oct. 28-31.

Dr. Charles Ellington, director of extension service, University of Georgia, Athens, Ga., will be the keynote speaker.

The main speaker will be J. Phil Campbell, Under Secretary of Agriculture.
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The Labor-Saving Plant Food

The pictures tell the story. The picture at the left with the lady watering the flowers is a bluegrass lawn that annually receives eight pounds of nitrogen per thousand square feet. All of it is applied as Blue Chip ureaform (UF) at one time toward the end of summer.

The picture at the left was taken in the same yard but with a different fertilization program. This section received only soluble nitrogen. It has been fertilized both in spring and in late summer. Total nitrogen was halved to two pounds (4.6 lbs. of urea) per application.

The difference can be noted in an imaginary line where the finger is pointing. There are “thin” patches of discolored grass that have been severely afflicted with leafspot and “summer brownout” because of overly lush growth following the late April fertilization. After a May flush of foliage, this section remained semi-starved through summer, and has not yet had its late summer feeding.

The area treated with ureaform is in the third year of this program. From the first grass growth, the turf has been uniform, without the flush of “soft” growth experienced in the companion area.

By 1972, delayed release from the applications of earlier years was beginning to feed back. The fertility response through summer was more reliable than in the previous two summers.

J. T. Hayes of Hercules, Inc., has published information indicating that about 65 percent of UF nitrogen is mineralized the first year, 25 percent the second year, and 10 percent the third year. The persistent use of UF for three years builds up nitrogen release to nearly 100 percent feed back the third year and thereafter.

It is not my intention to belabor the merits of gradual-release fertilization. Its usefulness has been well substantiated for turf, and it is becoming increasingly recognized for ornamentals, garden vegetables and woody plants. Any use in which the slow feedout of nitrogen is advantageous should profit from UF IBDU and other “slow release” nitrogen sources.

For more details, send a self addressed stamped envelope to: The Lawn Institute, Route 4, Marysville, Ohio 43040. Ask for reprints: Perspectives on Golf Green Fertilization, and All-Purpose Fertilizer Suits Roses to a Tea.
"Shortcuts" is a word with bad overtones in a business as hazardous as ours, but not all shortcuts are dangerous. Most "tricks" of any trade are essentially shortcuts... more efficient ways of doing the same job with less effort or in less time.

Let's face it. We all know guys who've been doing some things over and over again the hardest, slowest way, year after year. Experience may be the greatest teacher, but unfortunately it doesn't always have the best pupils.

Here are a few simple common sense short cuts passed on by some experienced students of the trade. They are worth trying:

When taking down a tree on a nice lawn you can save time and minimize damage by cutting up the limbs as they come off into about 4 to 6 ft. lengths and placing them perpendicular to the intended path where the trunk will be felled. This will prevent the trunk from "trenching" or gouging into the lawn and will help prevent a big dent in the ground from the heavy trunk.

It will also serve to elevate the trunk so it can be cut up without any chance of cutting into the ground with your saw. A wider cushion area can be made by placing the logs in an alternating or staggered pattern so that the log ends overlap about ¼ of their length. Stack your brush in the line-of-fall also for added cushion.

Working on a busy street and want to sell or unload for free some firewood? Cut it into fireplace length as you work and keep stacking it between the curb or pavement or in front yard near the street. You'll get customers! If it's more than a one day job and you want to dispose of it just stack it near the curb, chances are excellent that it will all be gone by morning.

If you do sell wood off the job, sell it cheap, you'll sell more and that beats hauling it. Besides you can get a lot of new tree customers that way.

Then there's the limb-over-a-wire-technique that's obvious once you see it done, but few practice it. Briefly stated, it's this: Many limbs over wires, especially telephone wires can be removed simply and without rigging, just by doing it in two steps with the help of the ground man.

Have him throw a dry manilla rope over the wires (or use the hook on back of your pole saw) and pull them towards the tree trunk. You should get a 3 to 5 foot pull depending how much slack is in the wires. Climber (or other ground man using a pole saw) then cuts off the end of the limb.

Now pull wires the other way (they should clear point where first cut was made by 2 to 3 ft.) Now cut the rest of limb off flush. Both pieces should fall safely to ground with no danger of falling on wire... and, no ropes! Be careful, though, about those wires. It's best to determine what type of power is being transmitted. Call the Utility Company!

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First best, we'll admit, is a good soaking rain. But an underground system using Certain-teed PVC pipe comes in second to nothing else.

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Certain-teed makes the 2nd best irrigation system you can get.


Wisconsin Golf Turf Symposium, eighth annual, Pfister Hotel, Milwaukee, Oct. 24-25.


Michigan Council of Landscape Architects, annual meeting, Ahwahnee Hotel, Yosemite Park, Calif., Nov. 2-4.


University of Georgia Turfgrass Short Course, 4th annual GGCSA, Center for Continuing Education, Univ. of Ga., Nov. 12-13.


Colorado Crop Protection Institute, 3rd annual, Colorado State University, Fort Collins, Colo., Nov. 14-15.

New Jersey Federation of Shade Tree Commissions, annual meeting, Haddon Hall Hotel, Atlantic City, N.J., Nov. 17-19.

North Central Weed Control Conference, annual meeting, Sheraton-Jefferson Hotel, St. Louis, Mo., Dec. 4-6.


Western Association of Nurserymen, trade show and 84th annual meeting, Plaza Inn, Kansas City, Mo., Jan. 6-8.


Kansas State Shade Tree Conference and Kansas Arborist's Association, annual meeting, Student Union, Kansas State University, Manhattan, Kans., Jan. 8-9.


New York State Arborist Association, annual convention, Raleigh Hotel, So. Fallsburg, N.Y., Jan. 13-16.


EDITORIAL (from page 6)
sponsibility to support, nurture and help make these groups grow and thrive. Ignorance of meeting dates, dissatisfaction with the governing group, inordinate distance to travel, hotel accommodations, and other reasons are but lame excuses which satisfy only the people who make them.

Any well-known national organization today didn't gain it's prominence by member laziness and platonic attitude. It's people in attendance; people in action for a united effort; people who desire to make the organization meaningful, and people who have the fortitude to stand up and be represented. That's what Green Industry associations need. And it's about time we started recognizing the fact that without people, associations will fold. What have you done for your association this year?
PALLIGATOR: Pallet Pullers, Oakland, Calif.

Here's a quick way to remove pallets from trucks, or move pallets at the front of trucks to the back. It is a one man operation. Unit utilizes an activated jaw which grips the center 2x4 of the pallet. It has only three moving parts. Pulls pallet either straight or sideways. Total weight is 14 pounds. For more details, circle (701) on the reply card.

PORTABLE SPRAYER: Terminator Products, Oakland, Calif.

Spraymate 8 is a lightweight unit — 169 pounds — specially designed for weed and insect control spraying. An 8 gpm pump with working pressures up to 600 psi forms the heart of the self-contained system. It is powered with a 4.6 Hp gas engine. Tank holds 100 gallons and is constructed of aluminum alloy. Engine and pump sit atop a locking tool box. Unit is easily mounted in a pickup truck. For more details, circle (702) on the reply card.


Easy to install and adjust, this new fertilizer injector is ideally suited for applying fertilizer to turfgrass areas through existing underground sprinkler systems. It's available in two models, F-100, 1 inch by 1 inch and the F-075, 3/4 inch by 1 inch. Unit is made of non-corrosive PVC and comes complete with a 36 inch plastic vacuum tube, screened at one end to prevent debris from entering the system. For more details, circle (703) on the reply card.

K-LOX ALGAECIDE: Kennecott Copper Corporation, Houston, Tex.

Control various filamentous and planktonic algae in potable water reservoirs, recreational lakes, golf courses, industrial ponds and moving or stagnated waterways with this new algaecide, just registered by EPA. K-Lox is a copper-triethanolamine complex. Treated water may be used immediately to irrigate turfgrass and ornamental plants. Product is non-corrosive and has excellent shelf stability. Can be used as a tank-mix in combination with Diquat to provide better “knock-down” of Hydrilla Verticillata (Florida). For more details, circle (704) on the reply card.
Larry Brinkel, superintendent, and inspect an area which has not yet been developed. Plans call for landscaping the area to conform to the natural terrain.

**USED STRIP MINE?**
(from page 10)

Old superintendent from Mammoth Springs, Arkansas, is so enthused about his work.

"I'll eventually fill in this ravine and make a new green for number eighteen," he says. Over there we'll haul top soil in and make another new green for the number five hole."

"I also plan to put in a driving range beside the clubhouse." The driving range is probably the most unusual alteration Larry would like to make. The present range is at a far end of the course, not comfortably located for those who need to take a kink out of their back swing.

"We have an ideal location for a driving range right beside the clubhouse," explained Larry. "The members can drive the balls right into the lake."

When asked about collecting the golf balls, "Brickel ingenuity" prevailed again. "That's the simple part. If we use floating golf balls, the wind will blow the balls right up to the bank; after that, it's a simple matter of netting them out. I figure this will be a service to the members and bring in additional revenue to the club as well."

Along with new construction, Wee-Ma-Tuk faces similar problems that affect most other courses. "Our disease problems are primarily leafspot and dollarspot, but by using a good spray program, we stay out of trouble. Our basic program is Daconil 2787 at a 3 oz. per 1,000 square feet rate every week if conditions favor disease. Sometimes I increase the rate to 4 oz. if conditions are severe," states Larry.

The next problem I'll go after is Poa Annu. I've had excellent results with Dacthal in controlling crabgrass and I plan to use a fall application for poa on all the tees."

Larry doesn't attribute the condition of the course only to the chemicals he uses or his supervision.

"I like to give credit where it's due, and my assistant, Andy Hamilton, is one of the best around," he says. "I can rely on him to take over when I can't, and believe me that makes a difference. Also, the grounds crew, managed by Gene Ford does a great job taking care of the roads and general areas. That's the first thing you see when you come to Wee-Ma-Tuk."

The next time you hear someone say, "Man doesn't know how to treat his environment," remember Wee-Ma-Tuk. Some people are changing our environment—for the better.

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