



Dick, ProTurf already has a 15-0-30 High K fertilizer for fairways. Why did you feel you needed something for greens?

"On greens, you want a fertilizer with a very small particle size. Much smaller than our fairway product designed for the big rotary spreaders."

Why does particle size make a difference? "The smaller particles disperse evenly from the spreader, filter down into the turf, and disappear when you water. There's less chance they'll affect a putt or stick to shoes and get tracked around."

That sounds good for the golfers. "Superintendents will like it, too. In addition to being small, each particle is homogeneous. So, even at half the regular application rate, there's no chance of getting the kind of speckling you might see if you used a coarse blend. And more particles per square inch produces a more desirable, uniform greening response."

"We developed this new version of 15-0-30 High K fertilizer especially for greens. And golfers."

Dick Westfall, Scotts Research project leader (Fertilizer R&D), talks about new High K Greens Fertilizer.

Now tell me why High K will be good for my greens.

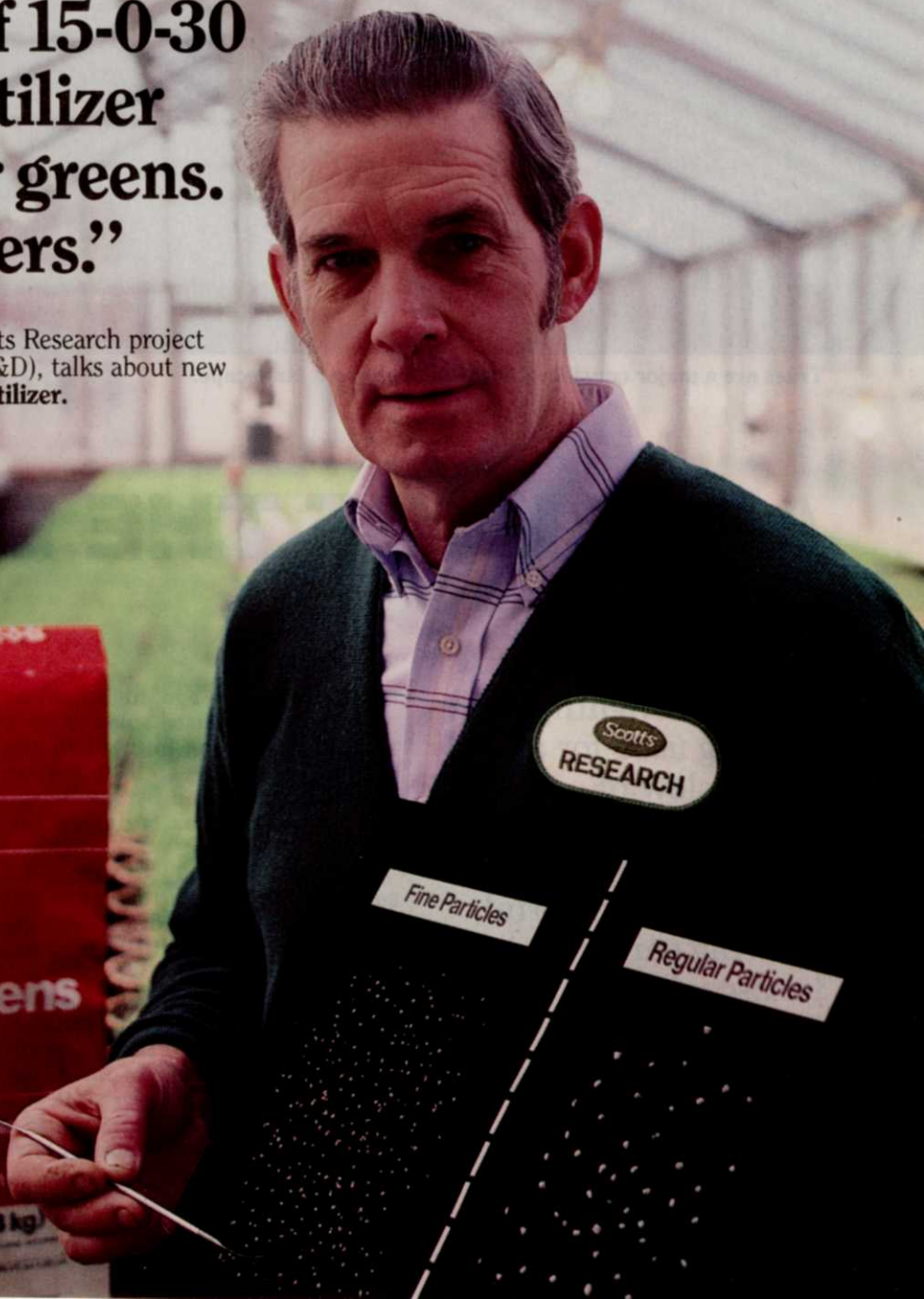
"High potassium levels have been found to enhance turf performance, particularly under stress conditions—improving drought hardiness, resistance to disease, and wear tolerance. There's also evidence that high potassium reduces winter kill in bermudagrass."

Why is there so little nitrogen? "To prevent over-stimulating top growth. For example, High K Greens can be used at double rates to build potassium levels in sand greens and you'd still be applying only 1 pound of N per 1,000 square feet. Or you can use it at regular rates on any greens that are on a low nitrogen diet. It can also be used at any time of the year."

Anything else we should know about ProTurf High K? "If you like what it does for fairways, you'll love what it does for greens."

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Trees are a major consideration when lighting a landscape.

AFRAID OF THE DARK?

Don't be. Nightlighting is being used for a whole slew of applications; security is only one segment of a colorful, growing part of landscaping.

by Jeff Sobul, assistant editor

Thirty years ago, nightlighting was being used solely to keep from getting mugged in the parking lot or to keep little Johnny from being attacked by the Boogie Man while he was trying to fall asleep.

Well, little Johnny grew up. And so did nightlighting; to the point that it's an entirely new dimension for landscapers with a little imagination.

William J. Locklin, a licensed electrical contractor and electrical engineer, literally created the industry when "a hobby got out of control," he says. He formed his company, Loran, Inc., in 1960, and began to market the concept of low-voltage (12-volt) lighting.

Cost was not a factor in creating

the low-voltage market, Locklin says. Indeed, electricity prices were negligible. He began because there was an empty niche in the market. "There was nothing to compete with it (12-volt lighting)," he says. "There still isn't."

Convincing everyone of this was not so easy. Locklin says that he used to go to colleagues and say "I have 12-volt lighting," and they'd give him a "That's-nice—what-the-hell-is-that?" look. "But in the last 10 years the industry's come into its own," he observes.

Locklin cites a number of reasons for the industry's slow start but recent rapid growth into an approximately \$75 million annual business.

In the post-World War II era, thou-

'We're afraid of what's in the dark. It's kind of a nice feeling to have that light.'

—William J. Locklin
Loran, Inc.

sands of small homes were built to "get the soldiers out of the trenches and into homes," Locklin says. Little emphasis was put on landscaping. The home was merely a place to live, nothing else.

But through the 1950s, as Americans became more affluent, homeowners began taking a little more interest in their homes. "People were placing a much greater emphasis on their homes," Locklin says. The lawn care and landscaping industries blossomed and flourished, and as the idea became more widely accepted, so too did landscape lighting.

Other factors were involved as well. Before 1960, Locklin says, few homes were built with outdoor electrical outlets. When these became part of the building plan, the possibility for outdoor lighting did also.

But even more importantly, "we're afraid of what's in the dark," Locklin

notes. "It's kind of a nice feeling to have that light."

Lighting takes root

Once landscape lighting became accepted, its growth was rapid. From simple beginnings have come major advancements in technology and landscape concepts.

In the beginning, single light sources—sometimes nothing more than a tractor headlamp—were used. Now, says Locklin, the industry has developed quartz halogen multi-mirror light sources with controls for dimming and remote switching.

While sophisticated equipment is good, it is not always best. Simple equipment will also do just as well depending on the landscape design circumstances (see chart). Much more important than the equipment itself is how the equipment will be used.

Take a good look

The landscaper must take into consideration a number of factors when planning the installation.

Space relationship is a major consideration in the design planning. Walls, hedges, fences, buildings and trees have to be taken into consideration, as well as what lighted areas will be used for. Lighting levels for lighted areas should be in scale with the areas and their uses. Unless a homeowner wants to use it for recreational purposes, a garden shouldn't be floodlit. Proper lighting can create a stunning visual effect.

Other factors like contour and perspective must also be considered carefully. And other possibilities can include specifically highlighting one subject, such as a statue in a garden.

Personal touch

The light must invariably fit the sub-



Major advances in technology and lighting concepts allow for creativity in lighting designs.

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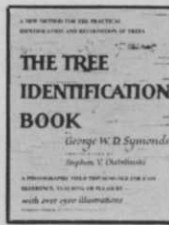
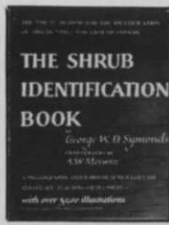
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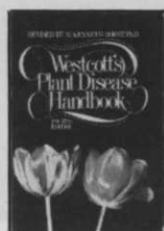
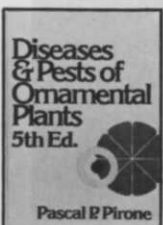
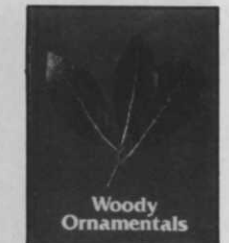
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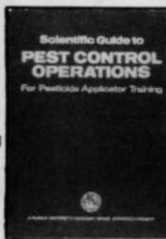


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Plant materials and lamps criteria

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Foliage density	Viewer distance	Recommended lamps	Remarks
OPEN	CLOSE	Low wattage I/F mercury vapor lamps PAR 38 and compact fluorescent lamps Blue-white lamps	When flowers are not important When flower and branch structures are nice When branches and leaves are important
MEDIUM	MID-DISTANCE	Combination of incandescent, fluorescent, and mercury vapor lamps	When foliage, trunk and flowers are important; switch based on season
		Same approach as when CLOSE, but increase wattage	Check plant material textures
COMPACT	FAR	Quartz and compact fluorescent lamps	Same
		Same approach; increase wattage and number	Check plant material textures, color of flower
		Use blue fluorescent lamps Use Chroma 50	For greenery For greenery and background
		Mercury vapor PAR 38	Only for far and very dark greens

● DECIDUOUS

Foliage density	Viewer distance	Recommended lamps	Remarks
OPEN	CLOSE	Incandescent PAR 38 in combination with blue-white lamps	For structure and flowers, for greenery
MEDIUM	MID-DISTANCE	Blue fluorescent	For fences and background
		Same approach, increase watts	Check colors and textures
COMPACT	FAR	Combination of fluorescent with incandescent lamps	Small and medium size gardens; check colors
		Mercury vapor I/F color corrected lamps	For trees in background
		Combination of mercury vapor and incandescent	Have two circuits for seasons
		Chroma 50 and blue-white incandescent	For backgrounds including flowers
		Use high-watt quartz lamps	For large areas and big trees; check colors and textures

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ject. For something like an open-branching tree, a 100-watt household bulb can be used as a floodlight, illuminating the leaves to create a surrounding effect.

Seasonal changes can be beautifully highlighted, especially fall colors and the stark beauty of naked trees and snow.

Garden steps or paths are also good subjects for lighting, mainly from a safety standpoint. But the underlying

factor, which Locklin stresses when he works with a contractor or a homeowner, is to do the job the way the customer wants it done. "I like anything where I can work with the owner because it's fun to transfer his wishes, dreams into reality," Locklin says.

He believes the landscape should be a personal reflection of the owner rather than the landscaper.

As a result, Locklin makes it a re-

Speaking the language

The landscape lighting industry has only become an influence on landscaping in the last 10 years. Here is a short dictionary of nightlighting terms, with a little help from William Locklin and Loran, Inc.

Lighting has three basic techniques:

Downlighting: a natural and efficient manner of lighting, much like sunlight or moonlight. Sources are directed down through trees or plants and are hidden.

Uplighting: The fixture is placed on the ground and directed up through plant material.

Backlighting: a subtle form of lighting. Backgrounds such as walls and fences are softly illuminated. Plants and trees are silhouetted against the lighted backdrop.

From these basic techniques a number of different combinations can be made to serve various functions. They include:

Safety lighting: one of the most common functions of outdoor lighting. Lights can illuminate walkways, steps and unexpected hazards or dark areas. Downlighting is the most common method used for this.

Security lighting: an offshoot of safety lighting. It can be used effectively as a defense against intruders. With proper timing controls, such as photoelectric cells, safety lighting can give the impression that someone is home.

Mirror lighting: effective for use with dark-bottomed pools or ponds. Lighted areas on the opposite side from the viewer can create a similar effect to that of moonlight reflecting off the surface.

Highlighting: creating a focal point by lighting it a bit more intensely than other areas, drawing visual interest.

Skeleton lighting: for use especially during fall and winter, uplighting or backlighting bare tree skeletons can create a dramatic effect.

Cross lighting: two light sources opposite each other focused on one object cross at the object to create a visual focal point.

Underwater lighting: (for landscape lighting only) colored lenses and a current can create a stunning visual effect in clear water of ponds or non-swimming pools.



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OBERLIN, OHIO, GETS IN SYNC

When Edward Thompson first came to Oberlin (Ohio) College as landscape manager, 108 different types of lights were being used.

Many of the lights used 400-watt mercury vapor bulbs, sometimes on double-headed fixtures. In effect, they created black holes, with pedestrians going from incredibly bright areas to virtual darkness. Human eyes couldn't adjust fast enough to the change.

On top of that, lights were burning out and pieces were breaking. Replacements weren't always available, and Thompson often had to dig up building plans just to figure out what type of lights he was dealing with. The town of Oberlin had the same problem.

A solution was definitely needed as was cooperation between the town and college.

Standardizing

It took six months for Thompson to convince the city government that aesthetic light fixtures could be both functional and effective. "The real pain and agony was getting things standardized," he comments.

But eventually, standards were agreed upon. That was three-and-a-half years ago.

In that time, the entire plan for fixture and bulb replacement has been about 25 percent completed. The first major overhaul came in the town square, which was the main subject of the original proposal for light renovation.

Tappan Square's 13 acres are surrounded on three sides by the college, the fourth by the town. A number of events and festivals held in the square require versatile lighting.

The town needed the capability to turn off part of the system, while leaving some of the lights on. This was especially true for events like Ohio Ballet performances, which didn't require lights in the performance area but elsewhere during performances.

'Beyond lights'

What resulted was a system that "went beyond lights themselves," says Thompson. Control panels were necessary to keep the lights operating up to specifications, and extensive work was done underground laying the system. For the square alone, the system cost about \$124,000.

Halogen RSL-3 high-pressure sodium lights have replaced the mercury bulbs. The fixtures can handle bulb wattages of 35, 70 and 150. The 150-watt bulbs give off 21,000 lumens compared with 24,000 from the 400-watt mercury lights. Wattage savings far outweighs losing 3,000 lumens.

Work has been completed on a number of main streets in the city and on campus. "It's kind of fun in the areas it has developed to see the same fixtures on campus and then in the town square," Thompson comments.

He projects that, based on previous progress, if things go well, complete renovation of the light fixtures should be finished within 10 years.

—Jeff Sobul

quirement to get to know the homeowner. Part of that acquainting process includes dinner with the owner and contractor or landscape architect. Locklin feels this is the best way to get knowledge of a family's living habits. It is essential.

It is also successful. Locklin's success has created an industry made up of many companies, new and established.

A notable entry is Toro. In 1985, the

company bought LunaLite, an established company that dealt in outdoor landscape lighting. Toro expanded the line, marketing separate systems for contractors (a more complex one) and homeowners.

"We saw it as an opportunity for Toro to enter into a new, up-and-coming market," says Bill Barkalow, marketing director for the low-voltage lighting division. Though he could not quote specific figures, Barkalow

said Toro's growth in the market has been rapid.

One of Europe's leading sources of landscape lighting, Bega, joined forces with Forms&Surfaces to create Bega/FS. The joint venture has recently introduced a line of lighting equipment and accessories into the U.S. market.

And with continued affluence in America, the outdoor lighting industry should diversify and continue to grow.

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