Show Time '93

What does the year 2000 hold in store?

University of Arizona's Dr. David Kopec has some educated prognostications

By MARK LESLIE

ANAHEIM, Calif. — Regional greens construction specifications, less overseeding, more natural ecosystem products and genetic breakthroughs in turfgrass breeding will be on the palette of golf course maintenance in the year 2000, according to Dr. David Kopec.

Kopec, an associate extension specialist in turfgrass at the University of Arizona in Tucson, told an audience of superintendents at the International Golf Course Conference and Show to expect major changes in their jobs due to new technologies, products and perceptions.

"In order to provide areas for wildlife — and with pesticide remuneration — the cost of golf courses is going to go up astronomically," predicted Kopec, who conducts applied field research programs in turfgrass and weed control, water use and irrigation, cultural management and germplasm evaluation for desert turfs.

"The major issues for golf courses by the year 2000 will revolve around environmental management (not just managing the golf course proper but the ecosystem surrounding the course itself), water quality and quantity, and development and changes and retaining qualified personnel," he said.

"The overshadowing issues ... will be ground-water and surface-water contamination potential, pesticide contamination potential, protection of the public and employees, and wildlife protection, enhancement and what we do about endangered species."

These concerns, he said, are going "to change how we operate golf courses and the size of golf courses and the ratio of turf in the golf course facility."

Kopec, who holds a PhD from the University of Nebraska and provides state and regional educational programs in turfgrass management, said wildlife providership programs have already been started. Because of this, he said the future will see:

- larger acreage of courses;
- transfer of development rights (A person who wants to build a golf course may have to buy 200 acres, build the course on 120 and maintain 80 acres as a wildlife sanctuary);
- maintenance of existing species; and
- change in lake management and design.

"We will use lakes and ponds for irrigation, course features and catching runoff," Kopec said. "But I think the days of driving a golf cart to the end of a pond or lake are coming to an end. We will see laws mandating a 50- or 75-foot strip to protect surface runoff."

ENVIRONMENTAL RESPONSIBILITIES

"Doesn't the golf course superintendent have enough to do today?" Kopec asked. "I think so. He works 10, 12, 14 hours a day and is on the golf course three or four. He is in the office doing his many responsibilities."

Golf courses must ask themselves if they need an environmental plant protection specialist, and, more importantly, "Whose risk is this — the superintendent's, the owner's, the management company's, the risk manager's? These things have to be addressed."

He predicted more and continued use of effluent.

"It is a logical water source for golf courses, and it was shown 15 years ago that use of secondary [treated] water on a turf system provides tertiary water at the bottom of the system."

Saline water use will increase as well, he said, adding that there are pockets of saline water in the Western United States, and the industry may see "changes in how a golf course is built for using saline water."

GREENS CONSTRUCTION

Regional specifications for greens construction also looms as a possibility, Kopec said.

"I believe we will see regional recommendations for USGA greens and on the [turfgrass] varieties that are adapted to them. A germplasm that has adapted to the arid Southwest will have different properties in a humid Southeast... For the same reason, I believe we may see regional cultural programs on different USGA greens for different purposes," he said.

He said because peat bogs may not be harvested forever, other sources of organic matter must be investigated and studied for their properties, compaction and nutrient procapabilities for a golf course system and sand greens.

New bentgrass and Ber-

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Changes galore foreseen for 2000

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mudagrass varieties will be growing in different places.

In the future, superintendents may be responsible for collecting leachate from drain pipes on greens, filtering it and putting it back on the roughs and fairways, Kopec said.

FAIRWAYS AND ROUGHS

He predicted that Southerners be doing less overseeding because of reduced water availability and a trend toward playing on dormant Bermudagrass.

Because of the demand to maintain out-of-play areas to enhance wildlife, Kopec said he foresees decreased fairway size and the development of "transition roughs," with a primary which is playable, a secondary rough which acts more as a penalty, and a tertiary rough of native grasses.

"You won't see houses butted up to the rough," he said. "You might see 75 to 80 feet between housing tract developments where you will see a sign posted: 'Agricultural chemicals applied.'

"I'd like to see six-foot-high grass between my property and that, and maintain the status of a golf course as environmentally safe and wildlife sensitive at the same time. It can be done."

ROOT-ZONE MODIFICATIONS

"In the next 10 years we'll see big increase in science," Kopec said, specifying sports fibers. "Research in sports turf management can be applied to our fairways."

"By the year 2000 I hope there is a not a single one of you who is applying a toxic insecticide, herbicide or fungicide," he said. "If you have to, apply an agricultural chemical, apply a plant protectant... Get an IPM [Integrated Plant Management] program. And if you do have to apply a chemical, make it a plant protectant agent.

He said future products will be more species-specific, "so there is less chance of eradicating beneficial predators. They will have a shorter half-life residual because they will be used to control a short-term problem... In most cases it will be more expensive because development costs will increase and registration of these materials will as well."

The industry will also benefit from advances in using natural ecosystem products, Kopec said.

MICROCHIPS & GENETICS

Genetic engineering, he said, offers some potential for progress in genes for heat, drought and salt tolerance, insect and disease resistance, herbicide tolerance, pest inoculants and parasitoids.

"The microchip is here to stay," he said, pointing to maintaining service records, payroll, shop inventories, irrigation system, and pesticide application equipment.

"And it might be on your three-gang mowers by the year 2000," he said. "Pollution control devices may be controlled by microchip."

International trade agreements between Canada, the United States and Mexico open up some exciting possibilities.

"For you as superintendents and for researchers at large, exchange of germplasm, ideas and new developments in golf with Mexico and Asia is very exciting," he said.

Kopec also suggested that superintendents be proactive and that they better reward their crews. "They might have more specialized jobs to do and you will want to keep them around," he said.

Professor: Learn to manipulate

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ANAHEIM, Calif. — University of Georgia Professor Lee Burpee told superintendents here that advances in pesticide research and disease-resistant turfgrass species and cultivars hold hope for making biological control of diseases a reality.

Speaking at a forum on the future direction of pesticide technology, Dr. Burpee said: "Unfortunately, we're only attacking the pathogen from one side. We want to attack it from all three sides... chemical controls, changing species or cultivars, and manipulating the environment."

He said superintendents can practice "biocontrol" by manipulating cultivars and environments.

Changing species of grass can provide biocontrol, he said, such as shifting turf on a tee from bluegrass to rye.

"Kentucky bluegrass is much less susceptible to snow mold than annual bluegras, for instance," he said.

In the same way perennial ryegrass is more resistant to snow mold than is creeping bentgrass.

"Unfortunately, we are only in the beginning stages of being able to recommend cultivars," Burpee said.

He added that there are no biological fungicides, but studies are being done to discover some.

Burpee said few economic incentives and the narrow spectrum of biological controls are roadblocks to their commercialization.

In many cases they're not as broad spectrum as existing chemical pesticides, he said. And they are predominantly less effective than chemical controlas at low rates of application.