Growth in golf industry breathes life into

BY PETER BLAIS

The growth of golf has breathed new life into aeration companies with products designed to keep ponds clear and odor free.

"Although we have tremendous experience with water treatment, we're fairly new to the golf market," said Daniel Durda, co-founder and president of Aeration Industries International, Inc. "But we're approaching the golf-water market this year with an aggressive marketing and advertising program.

"We've been selling aerators to golf courses for several years in response to the industry's need for a proven, effective water restoration technology. We're projecting it to be a significant portion of our domestic business in 1990."

Results of Aeration Industries International Inc.'s circulation dye test after eight minutes (left) and 16 minutes (right).

Aeration Industries, the largest manufacturer of aspirator aeration equipment in the world, markets a patented, surface-mounted aerator that injects (aspirates) air under the water's surface, creating a horizontal circulation throughout the pond. It is a relatively new alternative to vertical aerators (fountains) and chemicals, the traditional methods of treating ponds at golf courses.

"We got into the golf market in 1980," said Chuck Barebo, president of Barebo, Inc. (Otterbine trademark), one of the leading manufacturers of vertical aerators. "Now it represents 30 to 35 percent of our business."

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The purpose of an aerator is to add oxygen and reduce the growth of algae that can cloud relatively stagnant water. In addition to being an eyesore, an algae-clogged pond often has an offensive smell. And when used for irrigation, the algae-containing water can clog filters, valves and screens, fouling sprinkler heads and choking irrigation lines.

Algae-filled irrigation water can adversely affect turf growth before eventually washing back into ponds where the algae can grow again. Uncontrolled water-quality problems translate into expensive maintenance headaches.

Superintendents often resort to copper sulfate to treat stagnant water. Besides the expense, the heavy metal eventually sinks to the bottom, creating a hazardous waste that may require the pond to be drained, the toxic waste collected and hauled to a special disposal facility, an expensive and time-consuming process. Dead algae also sinks to the bottom, providing a fertile environment for new algae to bloom.

Manufacturers tout aerators as a natural alternative to such chemical treatment. The oxygen enervates zooplankton that feeds on the algae. The circulation created by an aerator's flow pattern breaks up stagnant water and prevents algae from growing back.

Whether aeration or circulation is more important is one of the selling tools used by manufacturers of horizontal flow and vertical flow aerators.

"Aeration and circulation are both vital to a pond's total water-quality management," said Durda in support of Aeration Industries International's horizontal flow aerator. "The algae already produces a lot of oxygen. Our product aerates and, equally important, circulates water. This creates an environment that promotes the growth of beneficial algae and other micro-organisms whose by-products are water, carbon dioxide and oxygen instead of toxic chemicals present in poorly circulated ponds. Lack of proper circulation encourages adverse algae growth that results in unsightly, floating mats of organics that die, producing by-products like hydrogen sulfide 'rotten

pond aeration equipment companies

egg odor' and methane gas.

"Fountains have a place. They are pretty and they aerate some. But they are designed to throw water up in the air versus mixing the entire water volume from below the surface. Thus, they cannot mechanically circulate water effectively."

Countered Barebo: "Each has its advantages and disadvantages. Ponds of five acres or less and a depth of four to 15 feet are effective places for our floating surface aerators.

"If you have a long, rectangular pond and you don't want any type of display hardware, then a horizontal aerator might be better."

Steve Brown, president of Airlake Aeration, Inc., sees a need for both, often in conjunction with one another.

"Put a 2-horsepower fountain in a three-acre pond, and you don't have a chance. But add another piece of equipment to get the water circulating and it will work," said Brown, who was director of golf division sales for Aeration Industries International before opening his own firm a year ago.

The rule-of-thumb for aerators is 2 h.p. per surface acre of water. A perfectly round one-acre pond may get by with a 2 h.p. machine.

An irregular-shaped, one-acre pond with many nooks and crannies may require two aeration devices, or more if it contains effluent water, an increasingly important source of golf course irrigation water.

"Anyone using effluent water has a big nutrient load coming in. If it just sits there, it will grow the wrong types of algae. It also has an odor that can permeate into the air. A fountain wouldn't be right in that situation," said Brown.

It's interesting that both vertical and horizontal flow type aerators emerged from technologies invented for other uses. Barebo bought his firm from an aquaculture company that marketed its vertical aerators primarily to fish growers.

"There are a lot of fountain people who are calling their products aerators. But you have to look at their primary and secondary circulation rates and their oxygen transfer rates," said Barebo.

The Pennsylvania floating surface aerator manufacturer boasts primary pumping rates of up to 3,000 gallons per minute, secondary circulation rates up to 30,000 gallons per minute, and oxygen transfer rates of 2.2 to 3.0 pounds per horsepower.

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Horizontal golf course aerators manufactured by Aeration Industries International are small (1 to 5 h.p.) compared to larger aeration systems (up to 100 h.p.) the Minnesota-based firm has used worldwide since the early 1970s to solve wastewater problems, increase aquaculture production and restore rivers and harbors. The golf course units are based on the same technology, although they only weigh about about 65 pounds and generally run 2-by-4 feet in size.

Horizontal aerators are not particularly attractive compared to their vertical counterparts. Both Aeration Industries International and Airlake offer decorative fiberglass covers resembling boulders to camouflage their units.

"Some golf course superintendents operate the aerators without any decorative covers," said Durda. "We offer several options for the more aesthetically concerned golf course superintendent."

Aerator costs vary. Brown prices his horizontal unit at $2,500. Vertical models run from $1,500 to $15,000, he said. Diffused air systems, an oxygen-carrying gridwork of pipes and disks laid out on the bottom of a pond, range from $3,000 to $15,000.

On price, Durda said his company's horizontal flow type units "are very competitive in the marketplace, options and all. But, more importantly, they eliminate golf course maintenance headaches and water-quality problems."