

**STUDY** from page 11  
1987, assessed the health of 100 specialists who apply pesticides and fertilizers as a part of their jobs. Those studied had been working with pesticides for at least nine years.

"The study answers many concerns that people have about the health effects of long-term exposure to landscape care products that are properly handled and applied," says Dr. Roger Yeary, ChemLawn's vice president of Health, Safety and Environmental Affairs.

"The results speak for themselves. The study showed no long-term adverse health effects attributable to the specialists' work with chemicals."

The findings were released by Dr. Douglas Linz of the Occupational and Environmental Medicine Group of the University of Cincinnati Medical Center, where the study was conducted. Linz had participated in the study.

Workers were reviewed through a standardized occupational work history developed by an industrial hygienist. Physical exams and laboratory evaluations were also performed.

Sought were known or potential adverse health effects from exposure to insecticides, herbicides, fungicides and fertilizers.

The study also showed the group exhibited minor work-related ill effects.

ChemLawn asked for a follow-up examination on 26 specialists who exhibited nerve conduction velocity test results that were initially difficult to interpret because of a lack of a control group.

A later comparison with Cincinnati municipal sewer district workers, completed in 1990, does not show association between job exposure to pesticides and nerve conduction measurements.

ChemLawn will not release detailed information until the Occupational and Environmental Medicine Group publishes its findings in a scientific journal. □



An "intensive care unit" was set up around the tree (left) to control temperature and humidity. The actual wound created by a chainsaw is shown above.

## TREES

# Experts out on limb to save jumbo tree

MAGNOLIA SPRINGS, Ala. — New concepts in tree care are the keys to saving a 500-year-old jumbo Southern live oak.

Last fall, the 27-foot circumference trunk was girdled by a chainsaw-toting vandal in the wake of a property dispute. The tree (*Quercus Virginiana*), which is 65 feet tall with a crown spread of 150 feet, faces a life-threatening battle as summer heat approaches.

Initial grafting efforts consisted of 138 small bridge grafts, while supplemental grafts amounted to 65 large bridge grafts. In addition, 32 smaller offspring trees were grafted on the main plant.

"We were trying to graft in the winter—which is unheard of," reports Stan Revis, a Crestview, Fla. forester who is working to save the tree. Revis says that 30 university experts have been solicited for their opinions.

"We're having to take what makes sense and try it," he says.

The grafts are an example. "The bark on this tree is four inches thick. Nobody's tried to graft with bark that thick before."

Pencil-sized live oak twigs were used. Like straws, the scions were lined up with the cambium

and inserted within the damaged area to allow the flow of water and nutrients.

A highly fibrous peat product supplied by the Canadian Sphagnum Peat Moss Association was placed around the grafts as a bandage.

Thirty two trees are grafted below and above the stricken area. The potted offspring are bent over with one side grafted below the wound and the other side attached above the gash. Other potted saplings may be grafted onto overhanging limbs.

Scrub oaks under the canopy were removed to avoid robbing the tree of additional nutrients.

"We took a radar sounding to see where the root structure was," recalls Stan Foote of the Committee to Save the Tree. They extended about 40 feet past the crown, and a six-inch layer of peat moss and mulch was placed around the tree.

A tree that's near death will secrete a hormone causing it to produce more seeds to reproduce itself. Therefore, this jumbo tree is likely to have a bumper crop of acorns this year. But acorns can rob a tree of about 15 percent of its nutrients, so Revis would like to limit the tree's acorn production.

He's counting on using water to wet the pollen and soak it right out of the sky. "We have a sprinkler system set up on top of the tree, and when the pollen starts flying we're going to run the sprinkler system 10 minutes every hour for 24 hours a day," he says.

The sprinkler system is a 65-foot telephone pole that's leaned up the tree. Attached is a firehose-like setup that's fed by a 140-foot well.

"The sprinkler head is a way to cool the tree in the heat of the summer," Foote adds.

Also, the heat pump in the 'intensive care unit' will be replaced by an air conditioner to keep the tree cool. "We've got to get the tree through the summer or it's not going to live," Revis cautions.

—James E. Guyette □

## ENVIRONMENT

# Ice storms blister East and Midwest

FAIRPORT, N.Y. and BATTLEFIELD, Ind. — Severe ice storms last month ravaged central Indiana and then felled about 100 mature oak and beech trees at Oak Hills Country Club in New York.

Oak Hill, considered one of the top 100 U.S. golf courses and site of the 1989, 1968 and 1956 U.S. Open championships, was expected to open the season on schedule April 18. About 65 of the mature trees fell in wooded areas the public does not visit.

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Many trees destroyed at Oak Hill were in out-of-bounds areas; nonetheless, a massive clean-up ensued.

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Still, the damage claimed two trees at the course's notable "Hill of Fame" where one tree dedicated to comedian Bob Hope and another honoring Arnold Palmer, Gary Player and Jack Nicklaus were lost.

The damage severity at first astounded Hahn, but outside help was hired for clean-up and pruning, and normal seasonal staffers were reassigned.

"Mother Nature took a long time to make Oak Hill beautiful. She did a lot of damage in a short period of time," Hahn says.

"It was kind of ironic. In its own way, at first the sight was beautiful: the area had kind of a crystal look. But then there was the damage's ugliness."

As of mid-March, Hahn's crews were "moving along pretty well" as greens, tees and fairways were largely unharmed. Volunteers were also assisting in clearing away debris.

Hahn is no stranger to nature's fickleness. In 1989, just prior to the U.S. Open, Oak Hill was drenched by three inches of rain. And in 1983, the course iced up overnight.

"This was the worst as far as devastation," Hahn notes. "But we'll get it cleaned up and go on from there. You can't dwell on it."

The Indiana ice storm hit a 19-county area in the north central part of the state, taking out "everything smaller than my wrist" says Daniel Skinner,

a Fort Wayne landscaper who drove through Battlefield, Ind. afterward.

Areas in the storm's wake have been declared federal disaster areas by Pres. George Bush. Six died and 43 were injured.

"It was as if the trees had been topped out. Limbs were down everywhere," recalls Skinner.

Heavier trees "looked like they'd been cleanly cut," he says. Softer poplars appeared more sheared.

Skinner's Landscape Services clients largely were unaffected by the storm, but Skinner says his company followed the general rule of not touching plants until ice melts.

Steve Goodwin agrees. He is a supervisor, arborist and sales representative for Bartlett Tree, Ft. Wayne.

Goodwin says 99 percent of the trees in the area were likely affected by the ice. Originally about 10 crews from his company were sent into the region around Battlefield, but within two weeks crews were reduced to five or six.

His biggest concern was for homeowners who don't attend to tree repair because damage wasn't immediately visible. Ice-related tree damage, says Goodwin, can lead to disease and insect infestation.

Goodwin says few stands of trees were left unaffected and ice coatings of an inch or more glazed hardwoods like oak, hickory and hard maple, along with softer trees.

—Jack Simonds □