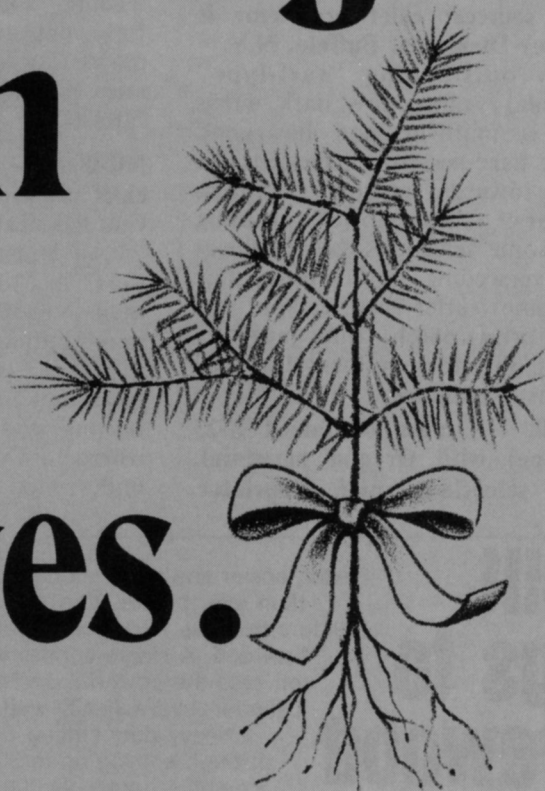


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# CULTIVAR GLOSSARY

Continued

cultivar economical for massive use such as athletic fields; reported to be broadly adapted hard-wearing and quite winter-hardy; well-suited for temporary cover; resistant to rust.

**MANHATTAN** — 16-clone multi-line chiefly from Central Park, New York sources; chief proprietor is Whitney-Dickinson, Buffalo, N.Y.

An outstanding "turf-type" perennial ryegrass, low, dark, mows well, is uniform, and has good winter hardiness: the pace-setter in trend towards improved ryegrass cultivars; a little slower sprouting than some selections, but excellent for overseeding golf greens; may sometimes suffer rust, leafspot and light brownpatch, but generally rates highly for continental as well as coastal climates.

**NK-100** — cross of famed S-23 (Europe) with Oregon perennial, mass selection; chief proprietor,

**Northrup, King & Co., Minneapolis, Minn.**

Persistent, leafy, rust-resistant, reasonably heat-and-drought-tolerant; rates highly on the eastern seaboard but weaker in continental climates and for southern overseeding; somewhat susceptible to Fusarium and Helminthosporium; mows less neatly than more recent releases, and not so winter hardy as NK-200.

**NK-200** — selection from Minn.; chief proprietor, Northrup, King & Co., Minneapolis, Minn.

An unusually hardy cultivar (to  $-34^{\circ}$  in Minnesota), finer-textured than NK-100; establishes rapidly, mows rather neatly, and resists most diseases (although somewhat susceptible to brownpatch); deep rooting, good for recreational areas where durability is needed; does well under modest maintenance; more

apt to suffer from summer than winter stress.

**PELO** — synthetic, from Holland; chief proprietor, Northrup, King & Co., Minneapolis, Minn.

Reasonably fine-textured, dense; more durable, winter-hardy and neater mowing than common perennial, with a deeper color; fairly resistant to rust and snowmold (but somewhat attacked by brownpatch, Fusarium and Helminthosporium); an early improved cultivar generally not rating so highly as recent domestic releases; provides good quality in mixtures and for winter-seeding in the South.

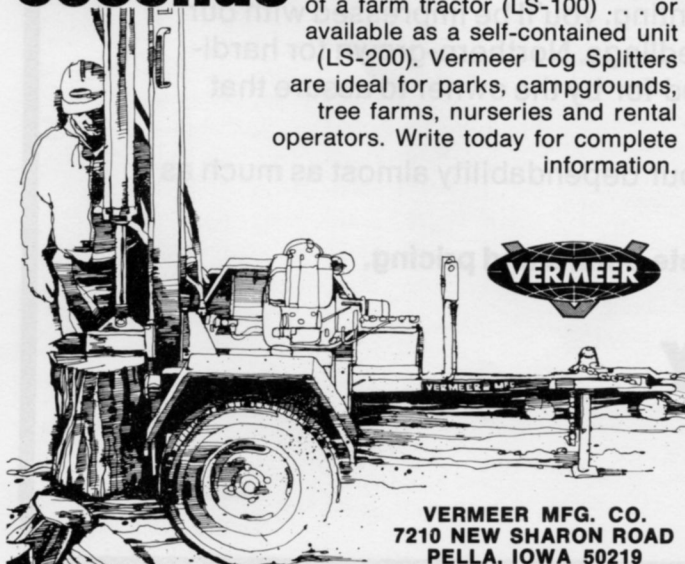
**PENNFINE** — 3-clone synthetic from Pennsylvania State Univ.; proprietor is Seed Production Improvement Corp., Assoc., Minneapolis, Minn.

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### **YORKTOWN — Rutgers synthetic multi-clone polycross; proprietor is Loft, Bound Brook, N.Y.**

Dense, fine-textured, dark-green, with an attractive sheen; excellent seedling vigor, and moderate growth rate; too new to have been tested widely, but apparently adapted wherever perennial ryegrass is used; good disease resistance, but some brownpatch; many of the characteristics of Manhattan.

### **\*KENTUCKY BLUEGRASSES —**

Bluegrass is the outstanding lawngrass for the North, sometimes a bit slow to make cover but once established highly recuperative and easily cared for (spreading by rhizomes, mowing neatly), excellent for all except very poor situations.

**\*\*FINE FESCUES —** Fescues are mostly used in bluegrass mixtures, or planted in dry, poor soil, shaded locations. They are very attractive during cooler portions of the year, beautiful in texture and color, but often suffer summer stress. Fescues do not spread by rhizomes so abundantly as do bluegrasses, nor mow so cleanly.

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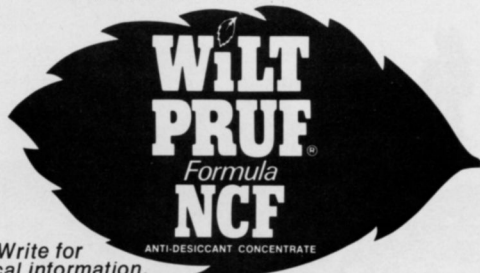
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## Meeting Dates

**1976 NCTD Irrigation Seminar**, Oakland Hilton Inn, Oakland, Cal., Oct. 6.

### International Society of Arboriculture 1976-77 Annual Meetings

New England Chapter — Woodstock Inn, Woodstock, Vt., Oct. 24-26.

New Jersey Chapter — Sheraton Post Inn, Cherry Hill, N.J., Nov. 13.

Indiana Chapter — Stouffer's Indianapolis Inn, Indianapolis, Ind., Jan. 4-6.

Kentucky Chapter — Galt House Motel, Louisville, Ky., Jan. 14-15.

Ohio Chapter — Sheraton-Columbus Motor Hotel, Columbus, Ohio, Jan. 23-27.

Rocky Mt. Chapter — Regency Motel, Denver, Col., Jan. 24-26.

Penn-Del Chapter — Marriot Motor Hotel, Philadelphia, Pa., Jan. 27-28.

Midwestern Chapter — Pfister Hotel, Milwaukee, Wisc., Feb. 1-3.

Southern Chapter — Holiday Inn, Pine Mountain, Ga., Mar. 6-9.

Western Chapter — Hilton Inn, San Diego, Cal., May 20-23.

**Sixth Annual Colorado Crop Protection Institute**, Colorado State University, Fort Collins, Col., Nov. 10-11.

**31st Oklahoma Turfgrass Conference**, Oklahoma State University, Stillwater, Okla., Dec. 1-3.

**Texas Turfgrass Conference**, Rudder Conference Center, Texas A & M University, College Station, Tex., Dec. 6-8.

**Wholesale Nursery Growers of America**, Hyatt Regency-O'Hare, Chicago, Ill., Jan. 9.

**National Association of Plant Patent Owners**, Hyatt Regency-O'Hare, Chicago, Ill., Jan. 10.

**Mailorder Association of Nurserymen**, Hyatt Regency-O'Hare, Chicago, Ill., Jan. 10.

**Landscape/Garden Center Management Clinic**, sponsored by the National Landscape Association and Garden Centers of America, The Galt House, Louisville, Ky., Feb. 2-23.

**29th Annual California Weed Conference**, Woodlake Inn, Sacramento, Calif., Jan. 17-19.

**Southern Turfgrass Conference and Show '77**, Cook Convention Center, Memphis, Tenn., Jan. 17-19.

**20th Annual USGS Green Section's Educational Conference**, Hyatt Regency (downtown), Atlanta, Ga., Jan. 28.

**Midwest Regional Turf Conference**, Purdue Memorial Union West Lafayette, Ind., Feb. 28-Mar. 2.



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HOW THEY LIKED . . .

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Creeping



BENTGRASS



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I am the Senior Golf Course Supervisor for the City of Santa Barbara, California. I would like to tell you about the changeover at the City Municipal 18-hole golf course and the four lawn bowling greens that are located within the city. In the past I have been overseeding the seaside bent greens with Penncross Bentgrass, and have achieved excellent results. I had always felt that golfers were the hardest people to provide good turf for, but when it comes to lawn bowlers it is even more of a challenge.

Robert L. Steele  
Santa Barbara, California  
Santa Barbara Community Golf Course

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Andy Birtoni  
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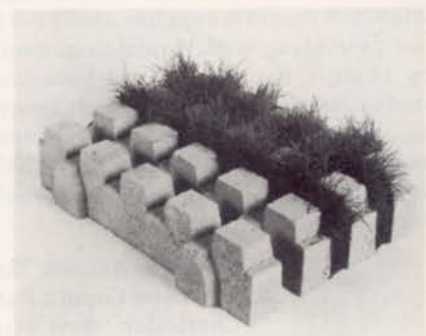
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# Victory Over Vectors

When Lynn Davis became superintendent of Brookfield Country Club in 1961, there was a lot of pressure from his Greens Committee to save the remaining elms not yet infected by Dutch Elm Disease (DED). Planners of the fifty-year-old course, located just outside Buffalo, had used nearly 2,000 of the fast and large growing American Elms to form doglegs on the fairways, shade the clubhouse area and in general add to the natural beauty of the western New York state course.

But, like many other areas of the country, Brookfield's elms were being infected with a DED plague. Davis quickly found that hundreds of the stately elms were showing signs of the disease.

"Being a superintendent means that you are an expert on turf grass production and management," says Davis. "I knew something about general shade tree care, but really nothing about a complicated disorder like Dutch Elm Disease."

However, in the nearly fifteen years that have elapsed, Davis has become quite knowledgeable about Dutch Elm Disease. While there aren't the vast numbers of elms on the course today as there were before, the remaining elms are healthy, vigorous and free of disease.

Tests made in June by Dr. Alex Shigo, plant pathologist, Northeastern Forest Experiment Station, U.S. Forest Service, indicate that Davis' program to save elms has caused little internal damage to the trees.

Using an unusual instrument called a Shigometer — which detects decay by the patterns of electrical resistance measurements — Dr. Shigo gave the Brookfield elms an exam comparable to that given to doctoral candidates at a medical

school. He probed the locked-in history of the elms to "see" what has happened since Davis began his preventive program. Without cutting any tree down, Dr. Shigo determined whether decay was present.

"I was like and expectant father at the hospital for the first time," recalls Davis. "I had worked on this program to save our elms for twelve years, yet I didn't know if what I had been doing was the right thing.



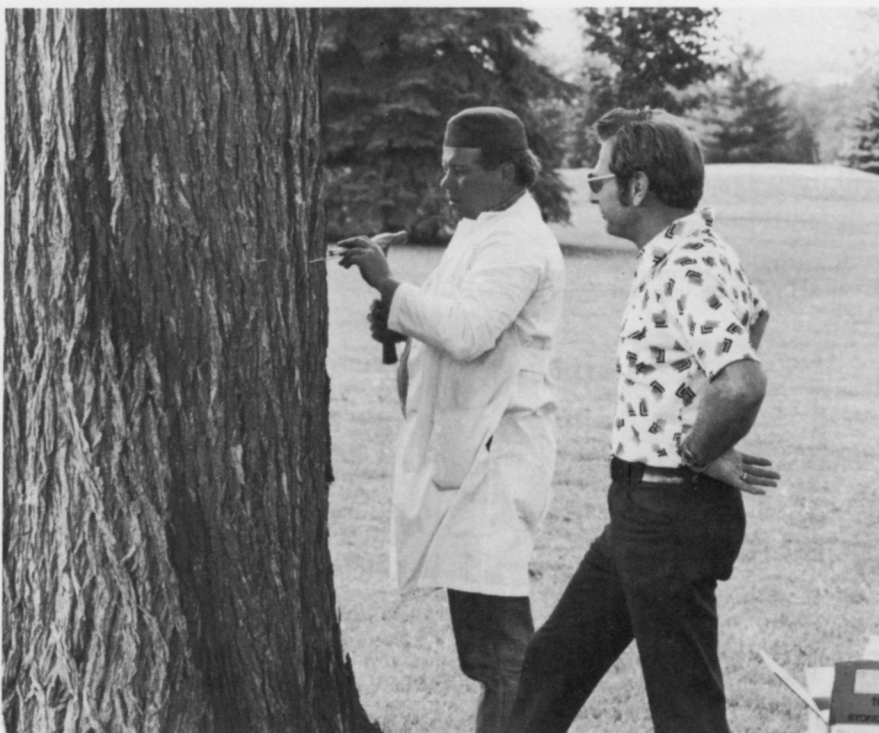


"When Dr. Shigo slipped his probe into the first big elm next to the clubhouse, I literally held my breath."

Dr. Shigo first drilled a hole perpendicular to the trunk about eight inches deep with a 3/32-inch bit. Then, slowly slipping the probe into the hole, he carefully watched the Shigometer.

"The needle on the meter jumped right away — and so did I," says Davis. "However, Dr. Shigo said not to be concerned as the probe was passing through the cambium layer, and the lower the relative resistance value, the better the score."

"Then the needle didn't respond for another 3 1/2 inches," he continued. "Dr. Shigo said that there was no decay present. When the Shigometer started showing response, the plant pathologist said that he thought the elm might have a wetwood condition, a bacterial condition present in many elm trees. He said it was something I didn't have to worry about." Three more probes



*Mauget feeder tubes are placed into the xylem tissues of this elm with an insertion tool and a hammer.*

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## Victory

*All eyes are on the Shigometer as Dr. Shigo probes this stately elm. The Shigometer was developed by Dr. Shigo as a means to detect decay in wood.*

on this elm confirmed the finding that the wood was sound. It was the same with other elms on the course.

Lynn Davis has reason to be enthusiastic about Dr. Shigo's report. Twelve years is a long time, especially when you have to report progress to an exacting Greens Committee.

"I have followed a plan that includes strict sanitation and chemical injections to control Elm Bark Beetle. My theory is that if you can control the vector, you can stop the disease."

Davis developed this plan after spending countless hours in conference with university specialists and local county extension agents. His first step was to sanitize the course of diseased trees.

"I secured the records of diseased trees from former Brookfield superintendents and updated them," he says. "In the eight year period from 1956 until 1964, 1,748 elms were lost to DED. We went throughout the course and removed any elms that were showing signs of disease."

Then he began his research program in tree injection. His first injection was on May 14, 1965, with Bidrin. The chemical was packaged in plastic capsules for direct tree injection. He figured that Bidrin would control the American Elm Bark Beetle (*Scolytus multistriatus*) and the European Elm Bark Beetle (*Hylurgopinus rufipes*) which feed on the elm twigs.

"That first spring there were only 47 elms remaining on the 18-hole course," Davis recalls. "As far as I could determine, only one of the treated trees was infected at that time with the *Ceratocystis ulmi* fungus." The single host tree contacted the disease through a root graft and was removed later that same year.

The superintendent continued



his treatment procedures and record keeping. By injecting the insecticide each spring just before the beetle enters its final life cycle and begins feeding on the elm twig, Davis was able to stop the fungus from entering the tree's vascular system.

The recorded life cycle of the Elm Bark Beetle from larvae through the feeding stage and into the egg laying stage lasts about 30 days. Davis discovered that by injecting one milliliter of insecticide per capsule into the tree's sap system, he could completely control all insect feeding for the first 30 days and keep the feeding to a minimum for up to 45 days after injection.

During the resulting twelve years of experimentation and record-keeping, Davis theorized that he had reduced the threat of DED to his remaining elms.

Environmentally, this method of chemical tree injection is totally safe. A feeder tube is inserted into the xylem tissue of the tree at about chest height with an insertion tool. The capsule is then pressurized (about 10 psi) by hand and placed on the end of the feeder tube. Capsules are used at approximately six-inch intervals around the trunk.