

Antipollution "Shot-in-the-Stem" for Tree Seedlings

Scientists at the Agricultural Research Service's Nursery Crops Research Laboratory in Delaware, OH, have found a chemical that, when injected into shade trees, can reduce leaf damage from ozone pollution by as much as 94 percent. Ozone is a major air pollutant that damages crop and causes tree leaves to yellow, wither and fall. It also reduces vigor and growth, leaving trees vulnerable to attack by insects and disease. How ethylenediurea (EDU), the chemical found to protect trees from ozone, works is not well understood, according to Bruce R. Roberts, a plant physiologist with the ARS. "Our test results indicate that when it is injected directly into the stem, it alters enzyme and membrane activity within the leaf cells where photosynthesis takes place," Roberts said.

According to Roberts, honeylocust, red maple, pin oak and sweetgum seedlings were treated with the chemical by two different methods a week before being fumigated with 0.30 and 0.95 parts per million of ozone, an amount well above the normal level found in smog. Leaves were checked for damage within six days after fumigation. Roberts and coworkers found that injecting EDU into a small cut in the stem was more efficient than drenching the soil around the potted seedlings. With one-fiftieth as much EDU solution, injection provided up to 94 percent protection, while drenching provided a high of only 46 percent protection.

The study was conducted on two-year-old seedlings because they would fit into the fumigation chambers, but Roberts says EDU injection should protect mature trees as well. The scientist believe that "EDU" is a relatively safe chemical for protecting the leaves of most trees and shrubs from ozone damage," according to Roberts.

Betty Solomon, Agricultural Research, Jan. 1986

What Others are Saying About the Professionals Who Manage Today's Golf Courses

by Arnold Palmer

"Some like long fairways, some like them short. Some like fast greens, some like medium to slow greens. There will always be someone who doesn't like what the superintendent is doing. You can't please everyone ... The rewards of being a superintendent are many ... There are things in this profession you can't put a dollars-and-cents sign on. It's the love of being in the midst of nature, the ability to counter a lot of adversities and the enjoyment of seeing your work make things happen ... any golf course superintendent should be happy with this great outdoors job, especially with the respect it carries in these times. See, years ago he was just the guy cutting the grass. Now the guy is a very important entity, more in the limelight than he ever was before."

Credit: On the Green, June '85

Used Equipment Buys

We currently have the following
tractors for sale:

1958 Ford 641 tractor.....	\$2,950.00
1969 Ford 3000 tractor.....	\$4,775.00
1969 IH 2444 tractor.....	\$3,200.00
1974 Ford 4110 LCG tractor.....	\$5,750.00
1975 Ford 3000 tractor.....	\$5,750.00
1981 Ford 231 LCG tractor.....	\$9,950.00
1973 Ford 3400 tractor-loader....	\$8,750.00
1973 Ford 3550 tractor-loader....	\$9,500.00
1972 IH 3400 TLB.....	\$7,000.00



Martin Implement Sales, Inc.
16400 South 104th Avenue
Orland Park, IL 60462
312-349-8430

BROOKSIDE SOIL TESTING and IRRIGATION WATER ANALYSIS

includes a complete report, and recommendations for producing quality turf on golf courses.

ADVANTAGES:

- Improves the environment of the grasses and eliminates turf diseases
- Decreases expenses for pesticides
- Reduces thatch and eliminates fairway renovation
- Decreases expenses for costly fertilizers
- Healthy turf attracts more golfers and increases income

Contact:

Golf course specialists for over 20 years

V. J. Zolman and Son
2618 Harvey Avenue
Berwyn, Illinois 60402

Phone: (312) - 788-4565
(312) - 461-3679