

WT&T

GREEN INDUSTRY NEWS

GOLF COURSE

Turf conference offers West Coast exposure

The 52nd International Turfgrass Conference and Show presented by the Golf Course Superintendents' Association of America in Anaheim, California, Jan. 25-30, continued a four-year tradition of record attendance despite uncooperative weather and the spread out nature of the hotel facilities.

More than 7,000 golf superintendents, students, and other turf specialists filled the exhibit hall and conference rooms. The exhibit floor was exceptionally impressive despite economic conditions. Suppliers were clearly willing to make the investment for professional displays for this show. Hospitality suites were as elaborate as ever. RainBird's hospitality appeared to exceed others with a Gold Rush theme where each person panned and received a small amount of gold.

Once again, the research session was clearly well attended. An obvious reason is the collection of speakers for that session. For someone strongly interested in turf the session had to be im-

pressive with nearly every major turf specialist in the country on the podium. In three hours the delegates heard Purdue University's Daniel, Californians Gibeault and Madison, Michigan's Rieke, Beard from Texas, Virginia's Couch, Washington's Goss, Arizona's Kneebone, Rhode Island's Skogley and Jackson, and Nebraska's Shearman.

Unfortunately at the same time a session on ornamental pest control was being held. Many superintendents were forced to miss the ornamental ses-

sions on insect and disease control although tapes of all sessions are available. Florida's James Reinert, Ohio's David Nielsen, California's Elmore, and Ontario, Canada's Clayton Switzer thoroughly covered control problems from both northern and southern views.

News subjects covered during the educational sessions included building solar greenhouses by Connecticut superintendent Mark Fuller, integrated pond management by California's Kent

Continues on page 90

ECONOMY

Chemical industry expects good year

The chemical industry has bright prospects for 1981, according to a survey of member companies of the Chemical Manufacturers Association. The level of investments which these companies have planned demonstrate their faith that the country's economy will rebound and more production will be needed.

The members predict record shipments of \$186 billion in 1981, which would be an increase of 16 percent over the expected 1980 level of \$160.6 billion and exceed the 1970-1980 growth rate of 12.7 percent. Expected net income of \$12.7 billion will mean an 18 percent increase, a significant improvement over the long-term average growth rate of 11.6 percent.

Chemical industry capital investment in the United States is expected to increase by 20 percent—an outlay of more than \$11.5 billion. Capital investment by domestic firms abroad is expected to grow at an even higher rate of 30 percent.

The survey respondents feel that inflation will remain the major nonregulatory problem of 1981, fueled by significant growth rates in costs. For example, raw material costs are expected to increase by 14 percent, and fuel and

energy costs at the rate of 16 percent.

ENERGY CONSERVATION

Study notes boom for energy-saving products

Fuel and power prices will jump 9 percent annually over the next 15 years, making investments in energy-saving materials increasingly advantageous, says Predicasts, Inc., a Cleveland-based business information and market research firm.

According to "Insulation & Energy Conservation in Housing," an analysis of the industry, escalating energy costs, government tax incentives and building specifications, and a generally healthy outlook for housing starts will combine to create an over \$16 billion market for energy conservation products by the mid-1990's.

Until 1985, shipments of energy conservation products will grow at an average of 12 percent annually, reaching \$7.6 billion, with the retrofit market expanding particularly rapidly.

CONFERENCE

Dr. Beard addresses turfgrass conference

Professional turf managers will be more important as the turf industry

Continues on page 11



Members of the Council of Tree & Landscape Appraisers met in Washington, DC, to review current activities and discuss future promotional and educational needs. Shown are (from left, seated) Ray Gustin, representing The International Society of Arboriculture; Chairman L.C. Chadwick, of The American Society of Consulting Arborists; (from left, standing) Fred Micha, The National Arborist Association; John Ferra, The American Association of Nurserymen; and Erik Haupt, representing The American Society of Consulting Arborists.

LANDSCAPE

News from page 8

faces higher energy costs and a lower supply of water—and they can expect to command higher salaries.

This outlook was presented by Dr. J.B. Beard, professor of turf and crop physiology at Texas A&M University, at the 1981 Nebraska Turfgrass Conference and Show held January 12 to 14 in Omaha, Nebraska. The annual event is sponsored by the Nebraska Turfgrass Foundation, the Nebraska Cooperative Extension Service, and the University of Nebraska Department of Horticulture.

With high energy costs, conservation will be a high priority, Beard told the 575 turf professionals attending the conference. Trends to selective mowing of certain areas, use of more energy-efficient reel mowers, and increased use of large equipment are on the horizon, he stated.

Since nitrogen costs are higher, he said, "there is a need to accept a less deep green color in some areas and develop varieties that will hold their green color at lower nitrogen levels." He predicted more research on growth regulators to develop grasses which require less frequent mowing.

Water quality may decline, Beard warned, as salt and boron levels build up with increased use of effluent. And the quantity of water available for turf also will be reduced. "We have far too many intensively managed turf areas that are overwatered."

MEETING

Weed science meeting held in Philadelphia

The 35th Annual Meeting of the Northeastern Weed Science Society, held January 6-8 at The Philadelphia Sheraton Hotel, drew more than 400 members.

About 140 scientific papers were presented on horticulture, ecology, agronomy, ornamentals, and forestry. "There was a lot of enthusiasm at the meeting because of the current nature of the papers," said Garry Schnappinger, NWSS president. "They discussed new chemical compounds and those that would be on the market in a year or so."

The keynote speaker, Dr. Jack D. Early, president of the National Agricultural Chemicals Association, spoke on "Pesticide Regulation: How Much Is Enough?" Dr. Early criticized the "unscientific handling of scientific data by regulatory officials," citing the recent recall of the proposed nitrite ban

Continues on page 14

CONTRACTOR NEWS

Landscape costs increased 14% over 1979

A recent management survey conducted by the National Landscape Association reveals that all costs of plant materials, supplies, and services have risen overall 14 percent from 1979 to 1980.

The survey asked members from all regions of the country to indicate the percent of increase (or decrease) they experienced in landscape costs for 1980. The particular categories included trees, shrubs, evergreens, ground covers, fuel, fertilizer, mulch, freight, and labor. Fuel was by far the largest area of increased costs, rated at 30 percent on a national basis. Freight, fertilizer, and labor also rose a high percentage.

In regional variations, it was interesting to note that for most items the greatest increases as a region were experienced in the Southeast, while the smallest increases were noted in the Great Lakes area.

LANDSCAPE COST COMPARISONS 1980 vs 1979
(% Change from 1979)

Region	Trees	Shrubs	Evergreens	Ground Covers	Fuel	Fertilizer	Mulch	Freight	Labor	Overall
Northeast	+12	+11	+13	+8	+27	+16	+13	+12	+13	+10
Southeast	+8	+13	+13	+8	+43	+22	+14	+18	+24	+19
Great Lakes	+6	+5	+7	+7	+28	+9	+8	+24	+15	+9
Plains	+10	+10	+11	+7	+25	+10	+12	+16	+13	+15
Others	+18	+13	+11	+8	+19	+17	+13	+23	+11	+15
National	+12%	+10%	+11%	+7%	+30%	+15%	+12%	+18%	+13%	+14%

Behnke installed as president of ASLA

William Behnke, a landscape architect from Cleveland, was installed as president of the American Society of Landscape Architects at the group's annual meeting last November.

To prepare for his service to ASLA, Behnke invited landscape architects from all over the U.S. and Canada to Cleveland to discuss how they might have more control over their economic destiny. After the meeting, he said, "Improvement of our financial potential need not lessen or endanger our professional ethics. Both improvement of the long range economic future and the need to maintain high standards of professionalism are possible."

Calvin Bishop, a Houston-based member, will serve as president-elect of the group. Vice presidents elected for 1981 include Donald Fox of Yosemite National Park and Brian Kubota of Kansas.

Also at the meeting, ASLA awarded their highest honor to William Grant Swain, president of GWSM, Inc., Landscape Architects, of Pittsburgh.

ALCA Field Day planned for Milwaukee

The student event of the year sponsored by the Associated Landscape Contractors of America and their student chapter at Milwaukee Area Technical College occurs April 3-5 at MATC in Milwaukee.

This event represents a chance for college students throughout the country to meet and compete in activities directly related to the skills necessary in the horticulture industry. It is also a time to meet with prospective employers in the landscape industry to discuss full or part-time employment.

Activities include identification of insects and plants, operating equipment and designing landscapes, and basic horticulture work with plants. For more information, write Milwaukee Area Technical College, North Campus Center, 5555 West Highland Rd., Mequon, WI 53092.

CAST asks EPA to dispose silvex by use

The president of the Council for Agricultural Science and Technology (CAST), R W Fogleman, has made the latest request to the Environmental Protection Agency to consider disposing of silvex by use rather than by incineration and burial.

Fogleman offered seven points to EPA Administrator Douglas Costle to consider. These include:

- The TCDD in silvex products would decompose in one day if they were applied to foliage as an herbicide or to soil as a fertilizer top dressing.
- TCDD in the solid products may last a long time if buried. Almost all of the TCDD in liquid silvex is decomposed if the incineration temperature is sufficiently high.
- Disposal of the silvex products by use would be a less expensive, more responsible use of public funds than disposal as hazardous wastes.
- If EPA goes ahead with the disposal of silvex as hazardous wastes, it "will be spending more than \$26 million to dispose of less than 0.03 pound (one-half ounce) of TCDD."
- "To destroy at great cost and as hazardous wastes the silvex-bearing products that could otherwise be used to improve societal welfare without constituting a significant hazard is a waste of the valuable resources used to produce, transport, and dispose of them, as well as a misrepresentation of the character of the products to the public."

U.S. Government promotes tree planting

The government is encouraging home owners to plant trees around their homes to save energy and money.

"The trees can easily pay for themselves in fuel savings in a matter of a few years," says a USDA representative. The agency says that a row of trees can cut down wind and reduce home heating bills by as much as 20 percent.

The government's basic premise contends that trees help cool the home in summer, cut wind and cold air in the winter, increase the value of the home, attract birds, and clean the air.

Trucking deregulation bill is passed

A new trucking deregulation act makes it easier to obtain certification by the Interstate Commerce Commission. The act retains agricultural exemption (which includes nursery stock) and also eliminates the gateway requirements and circuitous route limitations imposed on motor carriers. Carriers now are permitted to carry mixed loads of both regulated and exempt commodities. Nursery stock may still be transported by nonregulated carriers.

AAN Traffic Consultants have published a booklet entitled "Trucking Deregulation: How Far It Actually Goes," available from Bohman Industrial Traffic Consultants, 335 East Broadway, Gardner, MA 01144. Prepaid orders are \$8.95 each.

Government regulation will be curtailed

Government regulation will decrease in the Reagan Administration, owing to protests against the cost of government paperwork by the business community. No new regulations will be issued by agencies until the new Administration has had the opportunity to review them and determine whether they are needed.

Crop insurance amendment covers nurseries

The Federal crop insurance program has been amended to cover nursery crops. The amendment was requested by the American Association of Nurserymen and introduced by Representatives Panetta and Coehlo (D-Calif.). Under the provisions of the act, participation in a program is voluntary, and the Federal government will pay 30 of up to 65 percent of normal crop yield.

and the suspended use of the herbicide 2,4,5-T. Such actions, he said, have sparked anti-pesticide sentiment in many local areas and helped influence a growing trend by some states to out-regulate the federal pesticide law.

To reverse this trend, the NWSS has recently launched a plan to offer expertise and advice to state pesticide associations in dealing with legislative issues. This plan includes legislative workshops and an enlarged media tour program for the coming year. Dr. Early also called for "an increased level of cooperation between state pesticide associations and allied agricultural and scientific groups."

On Wednesday, January 7th, a special symposium was held on biological weed control with the use of plant pathogens. Dr. D.S. Kenney of the Abbott Research Center, and Dr. S.W.T. Batra and Dr. Bob Enge, both of USDA, discussed this alternative method of control.

At a business meeting, Tom Watschke, weed control turf specialist at Pennsylvania State University, was elected vice president. The 1980 president-elect, R.B. Taylorson, automatically became president during 1981, and the new president-elect is Steve Dennis.

PEOPLE

Golf course builders elect new officers

The Golf Course Builders of America, an association of golf course contractors and industry suppliers, has elected Frank A. Underwood of Bowie, Texas, president. Mr. Underwood, who served as president in 1974 and 1975, succeeds Nick A. Siemens of Fresno, CA.

Robert Ryan, vice president of Moore Golf, Inc., in Culpeper, VA, was chosen vice president. Carl Hedlund and James J. Kirchdorfer were re-elected secretary and treasurer.

ACQUISITION

Florida nurserymen buy plant exposition

The Florida Nurserymen and Growers Association has purchased The Tropical Plant Industries Exposition held annually in January at the Diplomat Hotel in Hollywood, Florida.

Terms of the sale call for FNGA to continue the annual exposition as a high-quality foliage show with at least a

Continues on page 82

75 percent green-goods display. The association has agreed to pay the present 25 stockholders \$60,000 plus a booth credit in the show for the next four years.

FNGA's executive vice president, Charles W. Dunn, said that the exposition will offer the association's foliage division a vehicle to promote its Florida product further. "The production of some of the world's finest foliage is based in Florida," he said. "These growers need to expand markets and seize every opportunity to develop new ones."

RESEARCH

Study on California's use of pesticides

California, the nation's leading agricultural state, is also its leading user of pesticides, reports Security Pacific National Bank in a study, "California Agriculture." The study shows that in 1979 the state used an estimated 139 million pounds of pesticides, which included more than 118 million pounds used for agricultural purposes.

Vernon M. Crowder, assistant vice president of the bank's research department, says, "California has regulated pesticide usage for more than 40 years." He emphasizes that many of these pesticides are nontoxic, and that the last recorded death from pesticide usage involving an agricultural worker occurred in 1972.

California growers, says Crowder, also use a variety of "natural" means of control, such as weather, irrigation, crop rotation, natural predators, selection of resistant plant varieties, sex attractants, and the introduction of sterile male pests.

New regulations governing the use of pesticide will increase the costs of the state's agricultural industry. "Ultimately," says Crowder, "the added financial burden would fall on the consumer—either at the checkout stand in the market or on the tax bill." He reports that California growers also are concerned that freedom to use pesticides when needed is essential to the production of reasonably priced, high quality food products.

CONFERENCE

Annual weed control conference held

The North Central Weed Control Conference elected new officers recently at its 35th annual gathering in

Omaha, Nebraska. James D. DiVall of Stauffer Chemical Co. was elected second vice president; James W. Herron, University of Kentucky, agronomy department, was named president; and Robert L. Benson, Monsanto Co., became first vice president.

The conference's two keynote speakers lauded the accomplishments of weed scientists during the past decade, but said they need to be more active in public affairs in order to meet the challenges of the '80s.

Will D. Carpenter, president of the Weed Science Society of America, urged his audience "to work toward responsible regulations—not no regulations. If you choose not to become involved, you can be assured that others will," he warned. He said that although research and development professionals have little control over inflation, the declining food supply, the decreasing availability of resources, and the political environment, they need to be active in public issues which affect agriculture.

G.F. Warren, professor emeritus of Ohio State University, reviewed developments in herbicides and biological weed control during the '70s. Reduced tillage to conserve moisture and reduce soil erosion has grown popular, he said. But finding ways to control resistant weed species continues to be a problem.

The speakers mentioned two new trends in weed science personnel: many noted scientists who began their careers in the World War II era will retire in the 1980s, and more women are choosing careers in weed science than a decade ago.

CONFERENCE

Turfgrass meeting draws huge crowd

The Ohio Turfgrass Conference and Show, held December 2-4 at the Ohio Center in Columbus, drew a record number of 1,745 people from 34 states.

Some 85 show exhibitors, representing fertilizer, seed, and equipment companies, chemical firms, irrigation specialists, and even a computer company, filled all 180 booth spaces.

The keynote speaker at the opening session, Dr. Roger Blackwell, professor of marketing at Ohio State University, spoke on "Changing Consumer Lifestyles: Implications for the Turfgrass Industry." The educational program was split into concurrent sessions on golf courses and on professional lawn

Continues on page 86

Embark® Plant Growth Regulator Distributor Locations

California

Moyer Chemical Co.
San Jose
Santa Ana

Target Chemical Co.

Cerritos

San Jose

Van Waters and

Rogers

San Jose

Los Angeles

San Diego

Wilbur-Ellis Co.

Chula Vista

Santa Fe Springs

Fresno

Woodland

Colorado

Balcom Chemical Inc.

Greenley

Florida

Souther Agricultural

Insecticides, Inc.

Palmetto

Georgia

Regal-Chemical Co.

Alpharetta

Illinois

Chicago Toro

Drake-Scruggs

Equip. Inc.

Decatur

Turf Products, Ltd.

West Chicago

Indiana

The Daltons Inc.

Warsaw

Iowa

Big Bear Equipment

Des Moines

Davenport

Kansas

Champion Turf

Equipment

Wichita

Kentucky

George W. Hill & Co.

Florence Ky.

Maryland

Commercial Lawn

Services Inc.

Rockville

Cornell Chemical &

Equip.

Linthicum Heights

Massachusetts

Richey and Clapper

Co.

Natick

Michigan

Lawn Equipment

Corp.

Novi

W. F. Miller Co.

Birmingham

Minnesota

Minnesota Toro

Minneapolis

Turf Supply Co.

St. Paul

Missouri

Beckmanns Turf

Chesterfield

Champion Turf

Kansas City

Nebraska

Big Bear Equipment

Omaha

New Jersey

Andrew Wilson Inc.

Mountainside

New York

Agway Inc.

Syracuse

Green Spaces

Yonkers

J & L Adikes

Jamaica

North Carolina

So. Agricultural

Insecticides Inc.

Hendersonville

Boone

Ohio

Chemi-Trol Chemical

Co.

Gibsonburg

Lakeshore Equipment

& Supply

Elyria

Oregon

Van Waters & Rogers

Portland

Wilbur Ellis

Portland

Pennsylvania

Farm and Golf

Course Supply

Philadelphia

Lawn and Golf Supply

Phoenixville

Miller Chemical

Hanover

Rhode Island

Old Fox Chemical

East Providence

Texas

Chemical & Turf

Specialty

Dallas

Virginia

Wilson Feed and Seed

Richmond

Washington

Van Waters and

Rogers

Kent

Seattle

Wilbur-Ellis Co.

Seattle

Spokane

Wisconsin

Reinders Bros. Inc.

Elm Grove

service and grounds maintenance. Among the speakers were Dr. Roy Goss of Washington State University, who talked about "Fertility Programs and Other Methods of Annual Bluegrass Management," and Dr. Win Hock of Pennsylvania State University, who discussed "Pesticide Spills." On the last morning, there was a third session—a disease and insect identification workshop.

At a business meeting, Mark Yoder was elected president and Dick Warner became president-elect. Tom Baker was elected vice president, and Gary Rasor is the new treasurer.

The Banquet Guest Speaker was Wayne Woodrow "Woody" Hayes, who served for 28 years as head football coach at Ohio State University. Hayes reviewed the history of Ohio State football, which he related to political history, concluding "That's the way the ball bounces."

The "Man of the Year" Award for Professional Excellence was presented to Wilbur Waters. He recently retired as superintendent of Inverness Golf Club in Sylvania, Ohio, and had been

associated with the golf course business for 54 years.

CONFERENCE

Maryland turf group meets in Baltimore

Some 600 people attended the Maryland Turfgrass Council's Educational Conference & Trade Show at the new Baltimore Convention Center in Baltimore, Maryland, on January 5-7.

Several out-of-state speakers delivered talks, including Dr. Harry Niemczyk of the Ohio Agricultural Research and Development Center, whose subject was the absorption of insecticides by thatch. He told how to control chinch bugs and billbugs with one application of insecticides during the spring.

Two speakers discussed the severe drought and practical ways to conserve water. Dr. Jack Butler of Colorado State University talked about managing water with limited quantity and quality. Dr. Al Dudeck of the University of Florida spoke on water management

problems and related research in Florida.

Dr. Tom Watschke of Pennsylvania State University covered the subject of growth regulators for turfgrass, including their current use and the potential for in-depth research at the university.

Mr. J. M. Jalone of J. M. Malone & Sons talked about aquatic vegetation and control with a hybrid white amur. This fish, a type of carp developed by breeding, controls weeds and cannot reproduce. Thus, it does not stifle native species, and efforts are being made to legalize its use.

PARKS

Park Service halts use of 2,4-D

The National Park Service is suspending the use of the herbicide 2,4-D in its 325 parks and recreation areas.

A park spokesman said that the action stems from pressure from environmental groups, which claim adverse reaction to the weed killer. Dow Chemical, a major manufacturer of 2,4-D, says that in 30 years of marketing there has been "absolutely no problem associated with the chemical." EPA in its study of the chemical has said the evidence of adverse health effects is inconclusive and they have no plans to ban it.

LEGISLATION

Congress extends mower deadline

Congress has granted mower manufacturers a six-month extension to comply with the Consumer Product Safety Commission safety standard for walk-behinds. The action delays the effective date to June 30, 1982.

The extension is part of the CPSC appropriations measure, which is part of a larger bill including the Department of Housing & Urban Development. It was proposed by Rep. Lawrence Coughlin (R-Pa.), ranking minority member of the House appropriations subcommittee, and strongly supported by Sen. William Proxmire (D-Wisc.), chairman of the Senate subcommittee.

PUBLICATION

Free copies available of restoration news

Free copies of the first issue of Restora-

Continues on page 90

Does the condition of your turf make you see red?

Switching to Pennfine Perennial Ryegrass could color your outlook. It's long been the standard of quality against which other varieties are compared. Why not simplify your life? Go with the most widely used fine-leaved perennial ryegrass in the nation. By the way, if you have trouble finding Pennfine, just ask the turf pro with the best-looking turf around. Chances are he's already using it. Pennfine Perennial Ryegrass, P.O. Box 923, Minneapolis, MN 55440

Write 151 on reader service card

tion and Management Notes, a new publication from the University of Wisconsin-Madison Arboretum, will be available to interested persons on request.

The publication, to be made up mostly of short notices dealing with the techniques and principles of restoring and managing communities of native plants and animals, is intended to en-

courage communication between researchers, managers, naturalists, landowners, and others involved in the active conservation of natural and semi-natural areas.

To obtain a copy, contact WR Jordan, III, The University of Wisconsin-Madison Arboretum, 1207 Seminole Highway, Madison, WI 53711, 608/263-7888.

PLANTS

Perlite Institute offers plant guide

The Perlite Institute has announced publication of a two-page plant guide for the use of lime on plants susceptible to fluoride.

The guide, prepared by Dr. Raymond Sheldrake, states that when limestone is added to a soil mix, the amount of fluoride in the plant leaves and soil solution decreases. Copies of Perlite Plant Guide Number 1 may be obtained from Perlite Institute, Inc., 45 West 45 Street, New York, NY 10036.

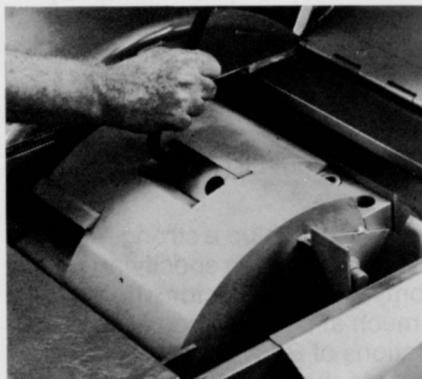
"Sound Conditioned" M & M Brush Chippers

for...
less noise...
more efficiency

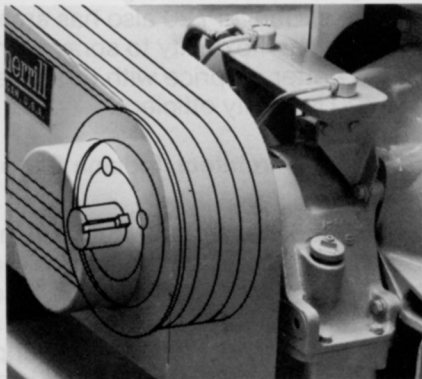


Applying engineering designs which "Sound Conditioned"* our industrial scrap reduction machinery, Mitts & Merrill can modify our brush chippers for low noise levels. At the same time, those engineering features which have made Mitts & Merrill the leader for years have been retained.

*Copyright Mitts & Merrill, Inc., 1973, 1974, 1975. All rights reserved.

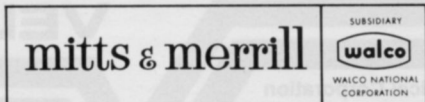


Staggered knife pattern, for years a Mitts & Merrill feature, has always resulted in a lower noise level. First, by segmenting the noise source. Second, through smoother cutting action. Third, by producing smaller chips.



Optional torque converters and the heaviest steel cylinder — even without an external flywheel — combine to give positive cutting action under the most rugged conditions. Isolates the engine from shock. Minimizes maintenance.

Plus • Positive safety-lock pin for greater operator safety • Swing-away, folding feed chute protects cutting chamber; allows instant access and increases maneuverability • Heavy duty construction includes coil spring, torsion-type suspension, and box tubular steel frame.



Dept. WTT 52, 109 McCoskry St., Saginaw, Michigan 48601

Write 142 on reader service card

Golf Show from page 8

Kurtz, and plant selection for the golf course by Dow Garden horticulturist Douglas Chapman. The United States Golf Association program on the final day discussed balancing quality with economy on the golf course.

One of the highlights of the research session was Dr. Noel Jackson's tracking of the turf disease *Ophiobolus* patch in the East. More cases are being reported in that area, especially with Penncross bentgrass. Bluegrass and ryegrass tend to move in where bentgrass has been weakened by the disease. The disease causes patches up to five feet in diameter after a few years of no control. Jackson said pH and moisture control and use of another bentgrass can help curb the spread of the disease. The disease was first noticed in turf in the Pacific Northwest where it is commonly found on cereal crops.

Dr. Houston Couch compared the phytotoxic conditions of the various systemic fungicides for turf. Couch warned that these compounds can accumulate in the soil and reach harmful levels. Common bluegrass and ryegrass are least sensitive to damage by systemic fungicides. Bentgrasses and Merion Kentucky bluegrass have exhibited higher susceptibility to damage.

Dr. Bob Kneebone from the University of Arizona provided a comprehensive study of turf water needs. Although subirrigation reduces evaporative loss it does not provide the necessary leaching out of salts required in many dry areas. Kneebone said evaporation rates can be reduced by changes in cutting height and texture, increasing infiltration rates of the soil, and se-

Continues on page 92