



. . . James B. Moncrief, U. S. Golf Association greens section, Athens, Ga.; Mike Johnson, Birmingham; Bill Norrie, Jr., secretary-treasurer of the Alabama-Northwest Florida Turfgrass Association, Pensacola, Fla.; and Dr. T. B. Haglen, chairman of plant science division, Auburn's Cooperative Extension Service.

some cases drying of the greens will help in disease control. He also advised that 5-10 pounds of hydrated lime per 1,000 square feet placed on grass when dry will help.

Some of the necessities for a healthy turf, he added, are good soil, aeration, the right grass, water, nutrition, and proper management. Zoysia, ryegrass, and fescues, he pointed out, seem to be the driest grasses at early morning.

Of course the most beautiful golf courses start with proper green construction. James B. Moncrief, director of Southern Region USGA-Green Section, Athens, Ga., said that the green should be one that resists compaction, supports proper growth, one constructed to attract fewer disease problems, proper drainage and good infiltration. An improperly drained area is usually where diseases show first. For proper sub-drainage he suggested that 100 linear feet of drainage pipe be used per 1,000 square feet of area. Drain bunkers, he said, are also helpful. A good soil mixture at least 12 inches in depth is necessary. A green-keeper should have plenty of good soil mixture and a place to store it properly.

Ed Kearley, graduate assistant, agronomy and soils, talked on research on the use of surfactants. He pointed out that the use of a surfactant most always increased the effectiveness of an herbicide. A surfactant, he said, is a tool trying to get more from an herbicide, allowing more efficient and effective use.

The two-day short course was sponsored by Auburn University and the Alabama-Northwest Florida Turfgrass Association.

## Interactions Significant For Trees and Turfgrasses

Established turfgrass has a striking effect on root development of newly planted trees, and established tree roots can greatly reduce root production and vigor of newly planted turfgrass.

Carl E. Whitcomb, ornamental horticulturist with the University of Florida, told members of the American Society for Horticultural Science Meeting at Washington State University at Pullman that when common Kentucky bluegrass was established before tree roots grew into that soil volume, silver maple root production was reduced by 50%. Honeylocust roots were not affected. The trees had no measurable effect on the bluegrass.

However, when bluegrass was seeded on soil containing well established silver maple or honeylocust roots, four major reductions in the vigor of bluegrass were noted with no measurable effect on tree roots:

(1) Germination of bluegrass seed was reduced by 29%, with no effect on subsequent tiller development.

(2) Clipping yields were reduced by as much as 30% immediately following fertilization.

(3) Grass sod yields were reduced by 40%.

(4) Grass root yields were reduced by 59%. Grass roots were very shallow, with few penetrating the established mass of tree roots more than a few inches.

## North Dakota State To Study Pesticide/Plant Metabolism

Research to learn how pesticides are metabolized by plants will be conducted at North Dakota State University, Fargo, under a two-year grant awarded by the U.S. Department of Agriculture.

USDA's Agricultural Research Service will provide \$17,118 for the study, which will be led by Dr. George Graf, biochemist at the University.

Researchers will be particularly concerned with determining how crop plants and weeds biochemically break down urea, amide, and carbamate pesticides.

Among common weeds to be included are lambsquarter, goosefoot, ragweed, and mustard.

Findings are expected to add to a better understanding of pesticide susceptibility and resistance in plants and to improved pesticide management.



## Big Wheel Turbo Blast Blower

Indoors, outdoors—parks, shopping centers, anywhere litter accumulates—find out how WINRO makes collection faster, easier, thorough.

- 20" Big Wheels roll easily over any surface.
- Big dual front casters make maneuvering easy.
- Forward or side air discharge with hand lever diverter.
- Handles fold for compact storage or hauling.
- 4-inch flexible hose carried on frame, ready at any time for use in hard-to-get-at places.\*
- Washer kit for misting or washing action.\*

\* Optional accessories

Powerful 7 or 4 H.P. motor, rugged ¼" steel impeller. 3 ways to regulate force of air discharge. Complete new design makes WINRO adaptable for many litter and leaf collection jobs. Write for illustrated brochures, specs or demonstration.



A full line of BILLY GOAT Vacuum Units is also available from the makers of WINRO.

**BILLY GOAT INDUSTRIES, INC.**

Dept. WT-10, P.O. Box 229 • Grandview, Missouri 64030

For More Details Circle (112) on Reply Card