



## Presidents, Man-of-the-Year . . . And the Whole Gang



Newly elected president of the Ohio Turfgrass Foundation, Richard Craig, left, is offered best wishes by Robert Reiman, outgoing president (upper left picture) Charles Tadge, right, receives OTF's "Man-of-the-Year" award from Harry Shrode, awards committee chairman. The leadership that produced the big show and will plan the one next year at Cincinnati

is, from the left: Robert Miller, executive secretary; Richard Craig, president; Tom Evans, first vice-president; Robert O'Brien (front), second vice-president; Robert Reiman, outgoing president; Gene Probasco, treasurer; Paul Morgan, director; Fred K. Buscher, director; Bill King, director; Harry Shrode, director; Paul Mechling, director.

(Continued from Page 11).

Temperature variation diminishes as soil depth increases, Latham pointed out. The depth where no change occurs is called the neutral layer. The neutral layer for daily temperature change is five inches deep; for annual variation, 40 feet. At 30 feet, he said, the seasons are reversed.

Dr. Paul R. Henderlong at Ohio State illustrated how temperature affected seed germination (percentages recorded 10 days after seeding) with this chart:

Species	90°-80°	75°-65°	60°-50°
Pelo ryegrass	65%	92%	62%
Pennlawn fescue	42	86	40
Penncross bent	50	58	46
Highland bent	53	43	45
K-31 fescue	36	55	58
Park bluegrass	32	45	20
Merion bluegrass	—	5	—

The optimum air temperature range for bluegrass and fescue growth has been reported to be about 75 to 85 degrees, Henderlong said. Yet the optimum soil or root temperature range is 60-70 degrees. Optimum soil temperature for root development of bentgrasses and ryegrasses is about 85-65 degrees. Growth rate for grasses in general indicates an optimum temperature somewhat higher than that for root growth.

Soil and air temperatures have profound influence on fertilization, stated R. E. Blaser, agronomist from Virginia Polytechnic Institute.

"The 14 mineral nutrients needed by turfgrasses do not diffuse into root tissue by themselves," he said. Temperature influences availability of nutrients in soils through chemical and physical effects on soil materials and through growth stimulation or retardation of microbes and turf plants.

Phosphorus availability is lowest when temperature is low. Too much nitrogen when soil temperature is favorable for growing can overstimulate above ground leaf growth at the expense of root health. With high nitrogen content in the leaf and reduced energy reserves in the roots, disease can be just around the corner, he warned.

Experienced turfmen know when it's "dollar spot weather" or "brown patch weather," claimed plant pathologist Dr. Robert E. Partyka. It's an indication, he said, that soil and air temperature is quite important in the development of turfgrass disease. As a rule of thumb, he listed these air temperature brackets "right" for producing the following diseases:

Show Mold, *Fusarium nivale*, 32-

45 degrees; Brown Patch, *Rhizoctonia solani*, 64-73 degrees for mycelial growth (But at 80-85 and a relative humidity of 100%, the fungus can completely blight a large area within six to eight hours. A rapid temperature drop to the 64-66 degree level favors sclerotial formation. In some cases, sclerotia may form within an hour.); *Helminthosporium sorokinianum*, leaf spotting at 68 degrees, leaf spotting with some blighting at 75-85 degrees, and severe blighting with no leaf spotting at 95 degrees; Dollar Spot, peak activity at 70-80 degrees;

Copper spot, *Gloeocercospora sorghi*, fungus begins to grow when soil temperature reaches minimum of 62 degrees for seven days (air temperature may be in the 68-75 range); Anthracnose, *Colletotrichum graminicola*, 80-85 degrees; Pythium blight, *Pythium aphanidermatum* and *P. utimum*, most favorable at 85-95 degrees; Powdery mildew, *Erysiphe graminis*, 65 degrees; Fusarium blight, *Fusarium roseum* and *F. tricinctum*, 77-95 degrees; rusts, *Puccinia graminis*, 70-75 degrees, once fungus has invaded the tissue, 85-95 degrees favors growth; stripe smut, *Ustilago striiformis*, 50-60 degrees; and soil-borne nematodes generally grow best at 65-75 degrees,