Greens Aerification vs Playing Compaction

By CHARLES J. COGAN

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How many golfers know what one of the principal causes of compaction of greens is on a golf course? True, there are several reasons, but one of the main causes is attributed to the constant walking on and off the greens by players themselves.

Take, for instance, our own golf course. We hosted 6,234 players during one of the busy summer months, which means there were, in round numbers, 6,000 players making ingress and egress to and from each green respectively, and averaging 200 players per day.

Take for Instance

1 day—1 player with 24 cleats averaging 28 paces per green

28 paces per green × 24 cleats equal 672 impressions

672 impressions × 18 greens equal 12,096 impressions for one player

200 players, daily average—2,419,200 impressions

200 players for one month—72,576,000 impressions

To combat this surface compaction, the Directors authorized the purchase of an "Aerator" especially designed for golf course greens. The machine selected by golf course superintendent, Arthur Sunderland, and Greens Chairman, C. J. Cogan, is one that is designed for keeping putting greens in perfect playing condition without interrupting daily play, and without damage to the putting surface. The machine punches 30,000 clean cut holes in every 1,000 square feet of turf, or approximately 300,000 holes each green, making a total of 5,400,000 holes, ¼" diameter, averaging 2½" deep, each round of 18 greens. This represents an approximate removal of three cubic yards of plugs from an average 10,000 square foot green, said plugs can be pulverized for top dressing.

The closely spaced perforations allow water and fertilizer to reach the zone root faster. Greens will require less frequent watering, and deep penetration of hollow tines promotes healthy root growth and uniform soil texture.

RADIOACTIVITY IN PLANT SCIENCE

One of the important peaceful uses of atomic energy is concerned with the production of radioisotopes for use in agricultural research. By the use of radioactively tagged phosphorus and other elements, scientists can trace the movements of fertilizers in the soil and in the plant and they are able to discover the mode of action of weed killers and hormone-like growth substances. Each time a new technique is used, more applications of this useful tool are suggested.

In the field of plant breeding, scientists are using irradiation techniques to force mutations. The mutations come about through the breaking and rearrangement of chromosomes and through the destruction of genes (the entities through which heritable characters are transmitted from parent to offspring). Inasmuch as mutant types are sometimes superior to parents, this technique holds promise of broadening the potential limits within which a plant breeder may strive for improvement.

Some scientists have attempted to control pests through the use of radiation. It is of interest that some pests, notably nematodes, are extremely resistant to radiation. United States Department of Agriculture scientists have found that the golden nematode can withstand 20,000 roentgens before the female is sterilized. More than 120,000 roentgens are required to kill this species. Lethal doses for some other species range from 350,000 to 640,000 roentgens. By comparison, some fatalities among humans result from exposure of 300 roentgens. A dosage of 650 roentgens is considered to be almost invariably fatal to man.

Because of the extreme resistance of nematodes to radiation, this project has been abandoned.

William H. Bengeyfield (right), Director of the USGA Green Section's Western Region, has been presented with a Certificate of Award from the Rocky Mountain Golf Course Superintendents Association. Joseph S. Shipp, President of the Association, made the presentation. He cited Mr. Bengeyfield's constructive and educational contributions to the superintendents in the Rocky Mountain Area.

COMING EVENTS

July 14-15
Lawn and Turf Conference
University of Missouri
Columbia, Mo.

July 20
Texas Turfgrass Association Field Day
Texas A. and M. College
College Station, Texas

July 27
First Illinois Turfgrass Field Day
Morton Arboretum
Lisle, Ill.

August 8
Mississippi Turfgrass Field Day
Mississippi State University
State College, Miss.

August 10-11
1960 Rutgers Turfgrass Field Day
Rutgers—The State University
New Brunswick, N. J.

September 15-16
Midwest Turf Field Days
Purdue University
Lafayette, Indiana

September 20-21
Ohio Lawn Clinic
Ohio Agricultural Experiment Station
Wooster, Ohio

September 21 noon to September 22 noon
Penn State Turfgrass Field Day
The Pennsylvania State University
University Park, Pa.

December 5-9
Fifty-Third Annual Meeting of
American Society of Agronomy
Morrison Hotel
Chicago, Ill.