

AERIFICATION IS A MUST

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While walking around the golf course on a tour of inspection, a superintendent overheard the following conversation amongst a group of players:

"When we were last over the course the greens were in perfect shape. Now they have been infested by Jap beetles. The pests have riddled the greens with numerous holes. They must be going into winter hibernation; yet their work has been done thoroughly and methodically and with very little harm, if any, to the putting surfaces. They seem imbedded in the soil by the thousands."

The truth was that an aerification operation had just been finished. The turf had not been attacked by the Japanese beetle, as the golfers thought. All the more reason why golf course superintendents should acquaint members with the why and wherefore of their plans and actions.

The benefits derived from aerifying and opening up grasslands are manifold. By this process we are able to make better use of air, water, soil, sand, lime and chemicals; each is a component of the whole, very closely related one to the other. Without their proper blending and entry into the physical structure of the soil, we would not enjoy the beautiful green carpets of playable turf that exist on our golf properties.

These materials were formerly applied to the surface of the ground as a top-dressing, and from there they slowly leached downward. Now with the employment of modern equipment, plant nutrients and soil amendments can be worked into the root zone of the soil profile. The results from these placements are soon noticeable.

Turf authorities tell us that compaction restricts the availability of plant food, air, and moisture. The fact has been well proved since, for these substances to be available, they must exist in the area of the root system. It is there that all growth receives nourishment.

A compacted land surface is much like a hard brick, a pane of glass or a block of concrete. Under a strong magnifying glass, each of the three is seen to contain pore spaces, but they are not large enough for the necessary entry and penetration of materials. Bad conditions may sooner or later occur on any golf course, especially where play is heavy and foot traffic is excessive around the cupping locations.

The only remedy for these conditions at the present time is the aerifier. Its use enables us to cultivate our fields beneath the sod, yet does not prevent them from remaining in play. We are able to secure artificially the same friable tilth that frost produces when it loosens the ground in the early spring. This tillage of the earth is as necessary to the successful maintenance and improvement of a golf course as the mowing of its tees, fairways and greens. Much has been said and written concerning the benefits of the performance; also, how and when the work should be done. All recommended methods are satisfactory, but which one to use depends on good judgment, local conditions, and the weather.

Case Histories

This article touches briefly on some of the advantages of the procedure, and cites a few personal experiences.

The first case history is that of a golf course in a southeastern city. The street department there had provided this club every fall with a large amount of tree leaves as they were cleaned from the highways. These leaves, when composted and allowed to decay, formed a very fine-textured silt high in moisture content and organic matter. For years this material had been applied straight as a topdressing with nothing added. The result of this practice was a thick surface layer which, in periods of wet weather, would hold water like a sponge, to the detriment of the turf. Almost the only way the excess

water could get away was through evaporation.

This bad soil condition was corrected by an aerifier. One-inch spoons were used and set for a depth penetration of five inches. These perforations into the soil formed vertical drainage channels and allowed excess water to seep deeper into the ground. After being repeated several times, this soon provided a firmer and drier top surface. The texture of the leaf compost was also improved by the addition of sharp sand to the mixture.

Another experience was where greens had been mowed infrequently at a high level of cut. As a consequence a heavy mat of thatched grass had developed, accompanied by a shallow root system. Numerous applications of topdressing had been made without any attempt to remove the excess covering of grass. Iron chlorosis and localized dry spots were quite prevalent. Fertilizers, when applied, often times did more harm than good, as it was difficult for the materials to penetrate their way through the almost impervious layers.

In this aggravated situation, machine aeration was resorted to in mid-summer. This time one-half-inch spoons were put into service and the areas were double aerified at right angles to each other. Within a period of seven days the formation and growth of white roots could be observed in the holes made by the machine. In addition to this, frequent light applications of ferrous sulphate (iron) were made so as to help clear up the chlorosis. Late in the fall another renovation was made. Dolomitic limestone was also applied so as to help decompose what was left of the remaining hide-bound mat. The following season these putting swards showed their first active growth in the cavities made by the aerifier.

Early the following spring, when the grass showed the first signs of life, the putting surfaces were closely mowed, brushed, cross-raked, aerified, and lightly topdressed with compost. This treatment followed by a change to a lower height of cutting, plus more frequent mowing, solved and eliminated the troubles of the year before.

COMING EVENTS

- February 18 - 21: Turf Conference. The Pennsylvania State College and Turf Advisory Committee. State College, Pa. H. B. Musser.
- February 26 - 28: Fifth Cornell Turf Conference, Cornell University, Ithaca, N. Y. J. F. Cornman.
- March 3 - 6: Turf Conference. Midwest Regional Turf Foundation and Purdue University. West Lafayette, Ind. W. H. Daniel.
- March 10 - 12: Turf Conference. Iowa Greenkeepers and Iowa State College. Ames, Iowa. H. L. Lantz.
- March 13 - 14: Turf Conference. University of Massachusetts, Amherst, Mass. Geoffrey Cornish.
- March 13 - 14: Turf Conference. Michigan State College, East Lansing, Mich. James Tyson.
- March 17 - 19: Turf and Soils School, Guelph, Ontario. Royal Canadian Golf Association. C. E. Robinson.
- April 7: Turf Conference. Colonial Country Club, Memphis, Tenn. Reg. Perry.
- April 23 - 24: Turf Conference and Field Day. Southeastern Turf Research Center, Tifton, Ga. G. W. Burton and B. P. Robinson.
- June 9: Field Day. Central Plains Turf Foundation, Boystown, Neb. L. E. Lambert and Harold Glissmann.
- June 16: Field Day. Oklahoma Turf Association, Oklahoma A. & M. College, Stillwater, Okla. Roy A. Chessmore.
- October 22 - 24: Third Turf Conference. Central Plains Turf Foundation and Kansas State College, Manhattan, Kans. William F. Pickett and L. E. Lambert.

One still hears skeptics disapprove of the use of the several different implements which provide mechanical cultivation of vegetative swards. They say, "Why not plow and regrade, do the job right, correct the situation, and replant?"

Yes; why not? The answer to the question is that it would put the location out of play. Aerification still permits continued use with only temporary inconvenience and, in most cases, will give the desired results.

(EDITOR'S NOTE: This article was written by Mr. Thomas especially for the USGA JOURNAL. A poll of members of the Mid-Atlantic Golf Course Superintendents Association revealed that Mr. Thomas had done the most outstanding job in the Mid-Atlantic area of improving turf by aerifying. It is significant that play was never interrupted. The procedure on the golf course and the preparation of this article has had the full support of the Green Chairman, Admiral Jack Phillips.)