

or moss. Success of highly maintained turf areas such as golf greens is dependent on the superintendent having control over soil moisture content of the turf area.

Reducing or redirecting the concentration of traffic is the first method of relieving soil compaction. For example, correct placement of cartpaths and sidewalks is important. Cartpaths should normally be a minimum of 8 ft. wide to allow two way traffic and larger maintenance vehicles such as trucks adequate passageway. Barriers such as curbs or railroads cross-tides should be used adjacent high traffic areas such as tees and greens to prevent carts straying from the path.

Traffic should also be minimized or prevented when soil is wet. Water in soil acts as a lubricant and traffic during these periods further aggravates soil compaction and a resulting reduction in turf-grass growth and vigor. Traffic should be regulated after heavy rains as well as any mowing with large, heavy units. Wide turf tires should be used on all equipment to help distribute weight of such vehicles over a larger area than allowed by regular tires.

One of the most important means of preventing soil compaction on areas receiving intense traffic, such as golf course greens, tees, and athletic fields, should be their construction with a predominately sandy soil. Usually a coarse-textured soil consisting of 80% or more sand is necessary to achieve these desired results. Soils containing a significant amount of clay or silt is unacceptable for golf green construction and all soils should be tested before use. Proper surface contouring and subsurface drainage in the form of tile lines also hasten the removal of excessive surface water.

Types of aerifiers

Many types of core aerifiers or cultivators are available. Most fall into one of two types of categories: vertical- and circular-motion units. Minimal surface disruption accompanies vertical-motion core cultivators and are the preferred choice on closely mowed turf surfaces such as golf greens (Fig. 5). Vertical units have the drawback of being relatively slow due to linking of vertical and forward operations, however, improvement in speed and operator ease have been achieved in recent years.

Circular-motion cultivators have tines or spoons mounted on a drum or metal wheels (Fig. 6). Tines or spoons are forced into soil as the drum or wheels turn in a circular motion. Hollow drum units are available which remove extracted cores from the soil surface while other units deposit cores back directly onto the soil surface. Circular-motion cultivators are preferred for aerifying large areas since the rotating units can cover more ground in a given time period than vertical-motion cultivators. However, circular-motion cultivators disrupt the turf surface more and do not penetrate as deeply as vertical-motion cultivators. Weights are often placed on top of these cultivators to increase penetration depth.



Fig. 5. Vertical-motion soil aerifier which minimizes surface disruption.

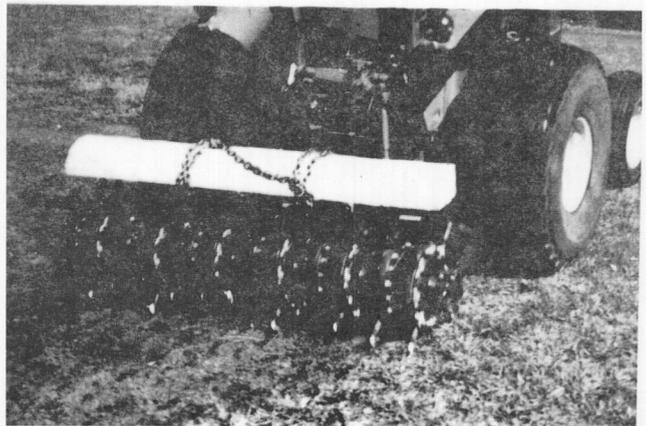


Fig. 6. Circular-motion soil cultivator used for aerifying larger areas.