Selection of Aerification Equipment
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What do we want aerification equipment to do?

- Reduce underlying soil compaction
- Smooth turf
- Encourage shoot growth
- Reduce layering
- Remove thatch

Effectiveness varies with equipment type and frequency of use.
THATCH
Cultivation

• Unlike other crops, turfgrass cultivation must:
  + not be disruptive to the playing surface
  + not be especially visible
  + heal/repair quickly
Cultivation in Turfgrass

- Vertical Mowing
- Aerification
- Spiking
- Slicing
- Topdressing
- Air injection
Aerification

• Insertion of a tine into the soil – may be hollow or solid.
• Some will include air or water injection in this group, slicing, spiking.
• Depth and size of the tine varies greatly.
• Topdressing may or may not follow.
• Excellent for relieving soil compaction.
• Excellent for fixing layered soils.
Aerification units and tines

Standard tines
10 cm long, 1.9 cm diam., hollow or solid

Deep depth tines
20 cm long, 2.2 cm diam., hollow or solid
Pull Behind Aerifier

9 cm long, 1.3 cm diam., hollow
Soil Resistance Over Depth.

Total of 8 Aerifications over 2 years.

Bermudagrass
Soil Resistance Over Depth.

Total of 8 aerifications in 2 years.
Soil Resistance Over Depth.

Total of 4 aerifications in 1 year.
### Root Weight and Shoot Density

<table>
<thead>
<tr>
<th>Trt</th>
<th>Dry weight of roots (g core⁻¹)</th>
<th>Shoot density (number core⁻¹)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deep, Hollow</td>
<td>3.9 a</td>
<td>101.1 c</td>
</tr>
<tr>
<td>Deep, Solid</td>
<td>4.4 a</td>
<td>120.7 a</td>
</tr>
<tr>
<td>Shallow, Hollow</td>
<td>5.3 a</td>
<td>105.7 bc</td>
</tr>
<tr>
<td>Shallow, Solid</td>
<td>6.0 a</td>
<td>99.8 c</td>
</tr>
<tr>
<td>Pull Behind</td>
<td>4.8 a</td>
<td>115.3 a</td>
</tr>
<tr>
<td>No Aerification</td>
<td>1.6 b</td>
<td>105.9 bc</td>
</tr>
</tbody>
</table>
Topdressing

– Topdressing is the application of a thin layer of sand or soil to the turfgrass.
– For our purposes, topdressing usually means a thin layer of sand.

Photo Credit - Sean Gault
Slicing
Sand Injection
Air Injection
Fraze Mowing