

# Soil Compaction

**What is soil compaction** - the definition is the physical movement of soil particles into closer association, thus changing the number, size and position of pores.

**Compaction** naturally occurs over time. Foot traffic, mowing, heavy rain, and parked vehicles all conspire to mash down your soil, compressing the top 2-3 inches into a dense, hard layer that seriously restricts the free movement of air, nutrients and water. The result: stunted roots and weak grass.

## Adverse Effects of Compaction

- restriction of grass root penetration
- lack of oxygen circulation
- lack of soil ability to diffuse CO<sub>2</sub> (produced by root respiration) which is toxic to the plant
- limits nutrient uptake by roots
- reduce infiltration of moisture
- increase casual water and run-off

## *Solution = Aeration*

Many lawns, particularly heavily used ones, have compacted soil, which restricts the movement of air and water to roots.

**Aeration is the penetration of the soil profile**, resulting in soil air being replaced by air from the atmosphere. This helps to improve drainage encourages deeper rooting of grasses. Intensively maintained lawns should be aerated once a year; those with moderate maintenance, every two years. Lawns with heavily compacted soil or severe thatch problems may need twice-yearly aeration. Best time for aeration is spring and/or autumn.

## Benefits of Aeration

- Overcome compacted soils
- Reduce water requirements
- Help decrease thatch
- Help alleviate stress
- Prepare a lawn for overseeding

