



Footprints, Tire Tracts and Your Soil

Often, when a plant is struggling, the two things considered are irrigation and fertilization. In many cases, the problem is the soil.

Here are some things about soil that you might not know:

Soil has texture:

Soil texture is determined by which soil separate is most predominate. A course texture has a higher percentage of sand. Course textured soils drain well but don't hold water or nutrients as well as other textures. Medium textured soils have a predominance of silt. Soils with medium texture are most ideal for plant growth. Fine textured soils have more clay than sand or silt. Soils with a fine texture hold water and nutrients better than soils of other soil textures, but don't drain as well.

Soil texture is impractical to change. However, it's good to know what texture your soil is so you can manage your irrigation and fertilization accordingly.

Soil has structure:

Soil can have a granular, blocky, prismatic, columnar or platy structure. Hopefully, your soil is more granular and blocky than prismatic or platy. Unlike soil texture, soil structure can be improved with soil amendments, tilling and aeration.

All soil amendments are not created equal:

Soil amendments include mulch, peat moss, manure, compost and sand. A soil amendment should improve soil structure, increase the soil infiltration rate, provide nutrients, increase the soil's water and nutrient holding capacity, improve the aeration of the soil and produce a favorable change in the soil's pH. A soil amendment shouldn't contain disease organisms, weed seed, toxic chemicals, have an adverse effect on a soil's pH and salt levels, or tie up nitrogen.

A soil's pH level is important to know and maintain:

Ideally a soil's pH level should between six and seven. Seven is neutral. Any soil with a pH above seven is alkaline. A soil with a pH level below seven is acidic. Vital plant nutrients are more abundant in soil with a proper pH level. You can raise pH with limestone and lower it with sulfur. Calcareous soil is an alkaline soil that can't economically be corrected. It contains free lime so adding sulfur won't have a lasting effect. Calcareous soils require the use of raised planters or mounds, or the use of plant material that performs better in alkaline soil.

A soil's salt level needs to be controlled:

Soil with high salt content can cause tip burn on plant leaves. Irrigation water, poor drainage and fertilizers can cause a soil's salt content to increase. To reduce the amount of salt in soil, a landscape manager should improve the soil's drainage and leach the soil. Leaching involves the use of excess water to remove excess salt.

If you have sodic soil, you need to replace sodium and then leach. Go figure.

Foot prints and tire marks bring out the worst in your soil:

Soil is composed of 45% mineral matter, 25% water, 5% organic matter and 25% air. When soil is walked on or driven over, it gets compacted and air is forced out. Air is as important to plants as water or nutrients. A good example is a new lawn, on a new property. When a structure is under construction, trucks drive and workers walk on the property, compacting the soil. Before a lawn is planted, an irrigation system is typically installed. When irrigation is being installed, trenches are dug for piping and then backfilled with soil. The rest of the lawn is left alone. Weeks later, the grass, where the trenches were dug, is outperforming the grass in other areas. You can see where the trenches were dug because the grass there is greener. Aeration can help reverse the effects of soil compaction.

There is much more than pruning and mowing to proper landscape management - irrigation and fertilization are two examples. A professional landscape manager will collect and test soil samples. This process will have more immediate results and can be more cost effective than a trial and error approach to plant care.