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Different Soil Types Have Different pH Levels

Let's talk about the soil that's underneath our lawns...

People are used to judging by what they see, on the surface, mainly... By that we mean, we look at the grass we're seeing right in front of us and we assess whether it's growing well or struggling... Right?

When it comes to our turf, we don't often think about the soil that's beneath it. Yet, that may be what's more determining of a healthy vibrant lawn than we realize. Sometimes the issues or problems we may be occasionally incurring with our lawns may have more to do with what's underneath the turf than what we're seeing above ground.

The pH scale ranges from 0 (extremely acidic) through 7 (the neutral zone) and all the way up to 14 (extremely alkaline). Most yard and garden soils will fall between 3.5 and 8.5 on this scale depending what the soil is like... There can be a lot of variables that factor into where your soil is within the pH spectrum. As close as you can get to the neutral zone is where you want your soil to be.

What might be the soil pH a local farmer experiences in his grain fields (with all the agricultural inputs they routinely add to make their crops have a better yield) may be considerably different than what a homeowner might experience with their soil where they live...

It's also perhaps important to note that when new home developers are building new homes and doing what they typically do for the initial clearing and levelling of the property around the new houses (though not sure we can call it professional landscaping unless that was a clearly defined key provision in the terms of the property sale), the best soil is oftentimes inadvertently removed, or spread about without much thought... Or shall we put it a different way – they don't necessarily go out of their way to bring in truck loads of the best pH balanced soil to add on top of what may be a clay or a sandy soil foundation. It would be nice if everybody's soil underneath their grass was that ideal black, nutrient rich, pH-balanced loam soil, but that's not necessarily what the reality is for most of us. That being said, conversely, in some newer upper-scale subdivisions or gated communities, the developer may indeed, be doing all the right things with their landscaping and the quality of soil for those new homes, and for lawns that will yet grow... You can be sure the above will factor into what the soil under your grass is really like.

It's hard to generalize about the soil pH levels in any given area. For example, in Alberta, there are pockets of very acidic soil existing in southern, western, central and especially the northern Peace River country part of the province. But generally, the farther south and east you go, the soil pH tends to be more on the alkaline side... Indeed, there are some very alkaline regions that you can't help but notice, too. You've probably driven by some of those areas – You're driving down the highway and you see the empty dried up shallow ponds or marsh areas in some farmer's fields that are covered in alkaline salts, almost powder-like or their encrusted shorelines. In some areas wherein the climate is definitely changing and trending towards drier, more arid conditions, we're seeing a lot more of this. The trending seems to be going more to the alkaline side of the pH spectrum in some places.

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Even a few too many Central and Southern Alberta lakes are undergoing a change from the normal slightly acidic pH levels toward more alkaline levels. Some can't even sustain fish anymore (or their numbers are dramatically decreasing) and some of those particular lakes are being overtaken by large fungi and algae blooms, and/or are becoming little more than water fowl lakes... Even the ducks and birds won't pause on their waters for very long. Many lakes within our coverage area are carbonate-rich and on the alkaline side (from 7 to 10 pH).

Though there's still some debate, the climate appears to be changing and trending towards drier conditions in our part of Alberta, which naturally affects the soil... which in turn, may alter the soil's pH and make it more alkaline, too. And yes, some other areas are still on the rather acidic side...

From a farmer's perspective, the best soil for the best crop yields are likely those in the neutral zone... the 7-ish pH range or slightly above or less than that. Depending upon what they're growing and what inputs they're periodically adding to their soil, it may be anywhere within the 6 to 7 range.

And for the soil under a homeowner's lawn the ideal range is also from a slightly acidic 6.5 to neutral 7 or so. That being said, residential yard soils typically fall anywhere between a very acidic 3.5 and a very alkaline 8.5 pH. However, if the owner has a professional lawn care regimen in place, like the kind of services we offer, it shouldn't be near to those extremes... but closer to the above ideal range.

As with anything, *what you put into something* (in effort... or fertilizer, weed control, soil enhancements, etc.) *will be the measure you get out of it*. Some people proudly spend a fair bit of time, doing everything they can to look after their yards and their lawns, and it's rather obvious if not enviable. Some don't and likewise that can show what's clearly missing, needless to say. It's fair to say that some of us have a green thumb and some of us don't.

So let's take a look at the different soil types... We can't be dogmatic or absolute about the following as though it guarantees what one's soil will always be like. But it does give us a general idea of what is normal for the type of soil. For the homeowner, it can help you identify what the soil pH beneath your grass is apt to be like —

SANDY SOIL

- Tends to range from very acidic (4.5 or so) to somewhat acidic (6 or so).
- Sand weighs less than clay, so the high sand content and little bit of clay makes this type of soil fairly light.
 - Sandy soils lose water very quickly, being particularly free-draining after rain or watering and are easy to work with.
 - But on the downside, during hotter weather, sandy soil can dry out quickly.
 - These light soils are usually low in nutrients, too, as they're quickly washed away by rain or excessive watering.
- Our GOLD ENRICH spray applications can help sandy soil to hold water for longer and provide much-needed nutrients for the lawn.

CLAY SOIL

- Tends to be somewhat alkaline (7.2 or so) to very alkaline (8.2 or so).
- Clay is normally a wet, heavy soil.
- Clay soil particulates are so tiny that they pack tightly together, locking in moisture and nutrients, but can restrict oxygen and proper drainage.
- Clay will hold water and stay cold throughout winter weather.
- Clay soils are easily compacted when trodden on while wet and they can dry out quickly and bake hard in summer.
 - Its slow drainage and tendency to dry out and crack in the sun can make it difficult to work with.
- Clay soils are generally rich in nutrients and can be quite fertile if their cloddiness can be broken up by the addition of organic matter such as our GOLD ENRICH treatments offer.
 - This breaks down the clay, making the water and nutrients held within the clay more easily available to grass roots.
 - Breaking up the clay also makes the soil warmer, more easily workable and less prone to compaction.

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SILT SOIL

- Tends to vary slightly on either side of the neutral pH range (slightly acidic to slightly alkaline).
- If you live in an area that may have previously been a riverbed, chances are good that you have silty soil.
- It's more fertile than sandy soil, as silt particles are very fine and soft and it does a good job of keeping its nutrients.
- The light particles of silty soil retain moisture better than sandy soil but also drain well.
 - However, the fine silt particles can be washed away by the rain.
- The downside to silty soil is its tendency to compact easily, which can reduce drainage and restrict water and oxygen from reaching grass roots.
- Our GOLD ENRICH treatments can help silty soil by making it more stable and balancing its pH levels.

LOAM SOIL

- Tends to be slightly acidic (6 or so) to neutral (7 or a little higher)
- This soil type is the ideal combination of sand, clay, and silt.
 - Those who have green thumbs for gardening or lawn care love this kind of soil.
- The excellent balance of the different soil particles in loam soil cancels out the inherent disadvantages of each soil type.
- Loam is easy to work with, drains well, and has high fertility.
- It's rich because it holds onto nutrients and releases them slowly, providing a consistent supply for grass or plant roots.

CHALKY SOIL

- Tends to be slightly alkaline (7.5 or so) to very alkaline (10 or so)
- Chalk soil contains a lot of calcium carbonate from sediment that has built up over time, or lime.
 - Very chalky soils may contain lumps of visible chalky white stone.
- It can be either light or heavy, but will not support plants that need acidic soil in order to grow.
- Chalky soil, which is commonly found in areas with heavy limestone formations, dries out rapidly in hot weather, making frequent watering of anything growing within it a must.
- Many chalky soils are typically shallow, free-draining and nutrient-deficient
 - Iron and manganese specifically get locked up in chalky soil.
 - Symptoms of nutrient deficiencies are yellowing leaves and irregular or stunted growth.
- When wet, chalky soil clumps up making it difficult to work with.
- Chalky soils are sometimes easy to identify by how they rarely flood or pool water; it just runs right through.
- Our GOLD ENRICH spray treatments can help with drainage issues and help re-balance this type of soil.

The above are some simple guidelines giving you a general idea of the characteristics of the different types of soil. They can help you best guesstimate what the approximate pH of the soil underneath your grass may be.

As we've mentioned throughout this article, it's not about what's the precise pH of your lawn. As we've said, there are many variables that can play into that. We generally know what is the ideal range but soil pH can fluctuate, too. Even rainfall for an extended period of time can temporarily alter your soil's pH as rain tends to be on the acidic side (5.5 to 7). And likewise, if your lawn is experiencing prolonged and repeated hot and dry or arid conditions it may be changing it towards the alkaline side of the pH spectrum.

***** The main point to take from this article is that one's soil can be re-balanced** — We can provide our customers with a cost-effective (comparatively lower cost than other pH rebalancing options) 3-application spray regimen via our GOLD ENRICH Soil Enhancer program. It can neutralize your soil, rebalancing it to that more optimal pH range where your grass will grow healthier and be less susceptible to any occasional turf issues or lawn diseases.

If you'd like more specific information about our GOLD ENRICH or our FERTILIZER/WEED CONTROL program or any of our other lawn care services, don't hesitate to give us a call. It would be our pleasure to do our part in enabling you to have a lawn that's the envy of your neighbours!

All the best to you from the Scott's Quality Lawn Care Team!

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