

SOIL pH

WHAT IS SOIL pH? It's a measure of the **ACIDITY** or **ALKALINITY** (hydrogen ion concentration) of the soil. It's largely determined by the rocks and minerals, and the weather that occurred when the soils were created over thousands of years!

Soil pH is IMPORTANT! It determines the availability of soluble plant nutrients and the microbial activity of the soil.

- **pH below 5.5** – low availability of calcium, magnesium, and phosphorus.
- **pH 7.8 or higher** – calcium and magnesium abundant, **BUT** high pH soils may have an inadequate availability of iron, manganese, copper, zinc, and (especially) phosphorus and boron.
- A pH of **6.6 to 7.3** is **most favourable** for microbial activities that contribute to the availability of nitrogen, sulfur, and phosphorus in soils.

The soils of the Kamloops region were formed by a combination of glacial sedimentary deposits and volcanic activity. Kamloops soils tend to be neutral to slightly alkaline (pH 7.3)

How to tell if a plant isn't suited to the pH of the soil?

- Chlorosis (yellowing of leaves); Stunted growth; Curling leaves.
- The nutrients the plant is lacking **MAY BE PRESENT IN THE SOIL** in relatively large amounts **BUT** not available due to the unfavourable pH.

How to determine the pH of your garden soil?

- The **BEST** way is to have a **LABORATORY** test your soil for you. **BUT** there are inexpensive home kits (widely available and easy to use) that will give you a reasonable estimate of your soil's pH level.

Can I change the pH of my soil?

- **IT DEPENDS!** Acidic soils can be successfully amended by the addition of ground limestone, **BUT** the soils in the **KAMLOOPS AREA** are generally **NOT ACIDIC**.
- Elemental sulfur can be added to alkaline soil, eventually forming an acid and lowering the soil pH.
 - Fertilizers like crushed sulfur and some ammonium-based nitrogen fertilizers lower pH and make soil more acid. **BUT**, over-use of fertilizer can contaminate ground water and run-off into lakes and streams!
 - Canadian sphagnum peatmoss can help to **TEMPORARILY** lower the pH but peat moss is a limited resource and should be used sparingly.
 - The **BEST** way to amend your soil and create a pH buffer for plants is to add **ORGANIC MATTER** to the soil.
 - **Compost** and **green manures** help to bring soils closer to a neutral pH; provide lots of nutrients, and **keep the microbial populations HAPPY!**



References

BC Ministry of Agriculture. Soil FACTSHEETS: Acidifying Soils; Soil pH, 2015.
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