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Life of a Lawn

Fact Sheet

Canada

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Life of a Lawn

Adopting an ecological approach to lawn care helps in understanding the nature and role of various elements in the lawn environment and how these elements interact.

The Soil Element

Cutting a deep vertical slice out of your lawn will reveal at least two soil layers with different colours and textures.

- Topsoil (top layer) contains more organic matter, usually making it darker and looser than the deeper layers.
- Subsoil (lower layer) is usually of a lighter colour and is often hard and poor in nutrients.

Soil is composed of mineral particles and organic material.

- The texture of your soil depends on the proportion and distribution of mineral particles—sand, silt and clay, from largest to smallest.

The best soil is a loamy soil containing all three particle sizes in ideal proportions.

- A sandy loam supports plant growth the best.
- Loam naturally contains a good proportion of air spaces.
- Loam also absorbs water easily and quickly, yet allows water, air, nutrients and organisms to circulate freely and roots to penetrate easily.

What type of soil do you have?

Take a handful of moist soil and squeeze it into a ball.

- Sandy soil doesn't hold its shape when pressed.
- Clay soil forms a lump that holds it shape.
- Loam forms a ball of soil but breaks easily.

What about pH?

The pH represents the level of acidity or alkalinity of your soil. Soil pH is measured on a scale of 0 to 14 with values below 7 being acidic, those above 7 being alkaline and 7 being neutral.

- Slightly acidic soil (pH 6.0 to 6.5) allows the soil to release the optimum amount of nutrients.
- Acidic soils are typically found in areas of high rainfall. Lime can be applied to raise the pH.
- Soil can also be too alkaline, especially where the bedrock is limestone. Sulphur can be added to lower the pH.

Soil analysis

A soil analysis is necessary to know the correct rate of amendment to apply. A professional lab can perform the testing for you.

- Using clean tools, take a soil sample to a depth of about 15 cm (6 inches) from several random spots in your lawn.
- Avoid taking soil samples from areas that are not typical of your yard, such as next to a driveway or in a low spot.

- Mix samples in a clean bucket and then put a sample of about 500 g in a clean plastic bag.

The Soil Environment

The soil is home to a large number of insects, spiders, mites, worms and microorganisms. All of these organisms form the soil's food-web and play an important role in maintaining soil health and in supporting plant growth.

Soil organisms benefit your lawn.

- They decompose lawn clippings and thatch.
- They help mix organic material with mineral matter throughout the soil, while creating pockets and channels for water and air to move.
- They digest organic material, helping to provide nutrients to plants and retaining nutrients in the root zone.

Lawn maintenance practices affect more than just the grass on the surface.

- Avoid excessive watering as the water fills up air spaces and reduces the oxygen supply in the soil.
- Avoid over fertilizing as it disrupts the nutrient balance and may decrease the amount of organisms in the soil.
- Protect beneficial insects and earthworms by reducing your use of pesticides.

What is Grass?

Like other vegetation, grass consists of leaves, stems and roots.

- Blades of grass are leaves that extend out of a sheath at the base where they wrap around the plant stem.
- The stem and blades grow upwards from a crown found at or near the soil surface. This type of growth allows the grass to tolerate and recover from repeated mowing.
- A grass plant can recover when it loses roots, leaves or stems, but not when the crown dies.
- A dense, deep root system is important to support top growth in grass.

Grasses reproduce by seed and by stolons (above-ground lateral stems) or rhizomes (underground lateral stems). They also form new shoots known as tillers that are attached to the original plant and add to the fullness of the lawn.

Plants for Biodiversity

Promote biodiversity in your yard by including a variety of plants and grass species in the landscape.

- A diverse landscape is better for the environment because it attracts birds, butterflies and other wildlife. It can be easier to maintain when the right plants are chosen to suit the conditions.
- Just like in the soil, a good diversity of organisms in the landscape supports a healthier plant environment.
- Consider other plants that can make good ground covers, especially for shaded, dry or other difficult sites. Some of these are hosta, lily of the valley, creeping phlox, Japanese spurge, periwinkle, bugleweed, sweet woodruff, thyme and creeping juniper.

Experiment with native plants and alternative landscapes, such as mulched perennial beds or rock and alpine gardens. Once established, these are drought resistant and require less maintenance.

Beneficial Fungi

Fungi known as endophytes grow inside certain grass species, but do not harm them.

- Grasses that contain endophytes are more resistant to certain insect pests because these fungi produce alkaloids that act either as a direct toxin to some pest species or as a feeding deterrent to others.

Although endophytes may deter chinch bugs, cutworms and sod webworms, they have no significant effect on root-feeding insects such as white grubs.

Soil contains millions of bacteria and fungi that can degrade pesticides. Although this is beneficial for the environment, it can cause pesticide treatments to fail.

Beneficial Insects

Many beneficial insects live in and around your lawn and you need to take precautions not to harm them. Beneficial insects fall into one of four categories:

- Predators are insects such as ladybugs, praying mantises, lacewings, syrphid fly larvae, dragonflies and ground beetles that feed on other insects.
- Parasitic insects are usually tiny wasps or flies such as the tachinid fly larvae that live in or on pest insects.
- Pollinators play an essential role in plant reproduction while feeding on nectar or pollen. Pollinators include bees, some flies, butterflies and moths.
- Soil-dwelling insects are vital for many aspects of a healthy soil.

What about Pests?

Healthy lawns are less susceptible to pest problems.

- Keep your lawn healthy using good maintenance practices. It will better tolerate drought, temperature extremes and general wear and tear.
- Healthy, vigorous, deep-rooted lawns are less susceptible to pest damage and do not usually require pesticides to control pests.
- Longer, thicker grass also prevents many pests from invading the lawn.

Manage pests by following integrated pest management (IPM) principles. The aim of IPM is to cause the least disruption possible to the ecological balance in your lawn.