

# Organic Fertilization



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**Nourish the soil to feed your plants**  
Plants need nutrients to grow properly. They feed by absorbing the minerals present in the soil. One of the main rules of fertilization is restoration. That means that to maintain the right amount of nutrients in the soil, we have to replace those that were used by the last crop.

The three main components of plant fertilizers are:

- ✓ **Nitrogen (N)** which promotes leaf growth.
- ✓ **Phosphorus (P)** which promotes a strong root system and increased flowering.
- ✓ **Potassium (K)** which promotes fruit ripening and makes plants more resistant to frost and pests.

On all packages of fertilizer, there are three letters and three numbers. These represent the percentage of each of the elements contained in the product. For example:

N     P     K  
0.3 - 0.3 - 4

Other nutrients, called micronutrients, are needed in smaller quantities for proper plant growth. These include calcium, boron and magnesium. Each plant has different nutrient and micronutrient needs.

The fertilizer schedule has to meet the changing needs of plants throughout the season and depends on how they grow, from root formation until fruit ripening.

*Consult your garden reference book for the specific needs of plants and when to fertilize them throughout the season. The library has many books you can consult.*

## Heavy feeders

Fruit-bearing plants, such as tomatoes, eggplants, peppers, squash and cucumbers, need more nutrients.  
Herbs, lettuce, radishes and carrots need fewer nutrients.

## Organic fertilizers vs. chemical fertilizers

There are a surprising number of fertilizers on the market. Some of them are produced through chemical processes. Others are derived from natural elements and have only been physically transformed (grinding, heat treatment, etc).

Chemical fertilizers are known to be harmful to the environment and health. In addition, in Côte Saint-Luc, as in many other cities, pesticides are prohibited. The following are organic solutions for fertilizing your vegetable garden.

## Application

There are three ways to apply fertilizer:

**Foliar feeding:** Add fertilizer solution to a sprayer, and then apply it to the leaves. This method provides for rapid absorption of nutrients.

**Side dressing:** Use a watering can filled with fertilizer solution and sprinkle fertilizer on the soil around the plants.

**Soil application:** For water-insoluble fertilizers, just spread them and till them into the soil.

*Fertilizer packages provide complete instructions on the application method and recommended doses.*

## Nutrient deficiencies

When plants get too much fertilizer or not enough of the nutrients required for their growth, they have an excess or deficiency of nutrients. Below are some of the signs of under and over fertilization for major nutrients.

	Nitrogen	Phosphorus	Potassium
<b>Under fertilization</b>	Uniform yellowing of leaves Yellowing of old leaves Reduced plant height Thinning of leaves Stunted growth	The inside of leaves and stem are purple or red Leaves are dark green and there are bronze spots on young leaves Premature shedding of leaves Lateral buds remain dormant or shrivel	Yellowing, then browning, of leaf base and tips Deformed or stunted growth Shrivelling Leaves curling under
<b>Over fertilization</b>	Accelerated growth of foliage to the detriment of flowers and fruits Long, weak stem Tissue weakening and wilting Increased sensitivity to aphids	Generalized yellowing of leaves Browning of leaf tips Risk of nitrogen, potassium or zinc deficiency Plants have a bitter taste	Few specific signs May cause a calcium and magnesium deficiency Yellowing of stem

## Recommended products

**Compost** (variable composition depending on degree of decomposition)  
*Decomposed organic matter to be worked into the soil.*

It balances pH, provides essential nutrients to the soil, contributes to good soil composition (aeration, drainage and water retention) and stimulates biological activity in the soil.

**Crab meal** (4.5-5.5-0.2)

*Crushed crab shells sold in powder form to be added to roots at the start of the growing season.*

It is very rich in calcium (15-18%) and also contains iron, boron, copper, magnesium, manganese and zinc.

**Liquid seaweed** (1-0.2-2)

*Seaweed concentrate in liquid form to be diluted in water for side dressing or foliar feeding.*

It is rich in potassium and various trace elements.

**Fish emulsion** (5-2-1)

*Fish concentrate and fish waste in the form of a liquid concentrate to be diluted in water and used in foliar feeding.*

It also contains calcium, magnesium, iron, manganese, zinc, sodium, boron, aluminum and smaller amounts of other elements.

**Hen manure** (4-6-8)

*Granular fertilizer made from hen manure to be applied to the soil surface. It gradually dissolves upon contact with water.*

It is rich in calcium and various nutrients. It plays an important role in balancing soil structure and living organisms in the soil.

**Slurry (manure)** (depending on the type of slurry)

*Liquid extracted by macerating or infusing plant materials (dandelions, nettles, tomato suckers, etc) that can be applied by side dressing or foliar feeding.*

Slurries eliminate and ward off insects and parasitic fungi, stimulate the natural defence mechanisms of plants (resistance to diseases and parasites) and provide the nutrients required for the development of garden plants. You can find a number of slurry recipes at the following Web site (in French only):

[www.terrevivante.org/420-purins-et-decoctions-quelles-plantes-pour-quels-usages-.htm](http://www.terrevivante.org/420-purins-et-decoctions-quelles-plantes-pour-quels-usages-.htm)