

# REDUCING PESTICIDES

it's perfectly natural.



## ORGANIC FERTILIZERS – THE BASICS

Organic fertilizers are generally by-products from animals or vegetables and minerals such as rock phosphates. Organic fertilizers come in a variety of forms, including granular, liquid and powder. This fact sheet presents an overview of the importance of fertilizing plants in the home landscape, the benefits of using organic fertilizers, their types and uses, and how to apply them in the garden.

### Importance of Fertilizers

Healthy plants are better able to defend against insects and disease. To sustain healthy growth plants need nutrients. The three most important of these are nitrogen (N), phosphorus (P) and potassium (K). Nitrogen promotes the growth of stems, leaves and other vegetative parts of plants. Phosphorus is necessary for the development of healthy roots, flowers and fruits. And potassium increases plant vigour, making plants more drought and cold hardy. There are also many micronutrients, such as calcium, magnesium, manganese and sulphur, which are needed by plants in smaller amounts. These are usually present in the soil in sufficient quantities that supplemental feeding is only needed under special circumstances.

Depending on their composition, fertilizers provide the three main nutrients. The amount and proportion of nitrogen, phosphorus and potassium in organic fertilizers is marked on the package whenever possible. For example, the numbers 10-6-4 indicate a content of 10 percent nitrogen, 6 percent phosphorus and 4 percent potassium. However, the nutrient content of many organic fertilizers varies greatly, and some are sold in bulk, so that the exact formulation may not be known.

### Benefits of Organic Fertilizers

The nutrients in organic fertilizers are released much more slowly than synthetically produced ones. To make nutrients available to plants, first the organic matter must be broken down by micro-organisms working in the soil and converted into a water-soluble form that plants are able to absorb. This process happens gradually, so that there is less chance of gardeners causing damage to plants through over fertilizing.

Organic fertilizers not only provide essential nutrients to plants, they also improve soil structure. Organic matter helps break up heavy clay soil, improve air circulation and drainage, and it increase the capacity for sandy soils to retain moisture. Good soil structure makes it easier for the roots of plants to reach moisture and to absorb the nutrients in the soil.



This fact sheet has been prepared by the Toronto Master Gardeners



## Types & Uses of Organic Fertilizers

There are many types of organic fertilizers, and a greater variety is becoming available. Organic fertilizers can have a high ratio of organic matter to nutrient value, such as compost and manures, or they can be offered in more concentrated forms such as bone meal and blood meal. All organic fertilizers exhibit slow-release characteristics.

Organic Fertilizers		
Fertilizer	Nutrients	Uses
Blood Meal	Excellent source of N	<ul style="list-style-type: none"><li>• Side-dress leafy vegetables, water-in well</li></ul>
Bone Meal	Excellent source of P	<ul style="list-style-type: none"><li>• In the bottom of planting holes of bulbs, shrubs and trees</li></ul>
Compost	Good all-round source of all three essential nutrients	<ul style="list-style-type: none"><li>• Top-dress beds and borders in early spring or fall</li><li>• In the bottom of planting holes when transplanting perennials and planting annuals</li><li>• Work into the soil of vegetable beds each season</li></ul>
Fish Fertilizers (Liquid)	Good source of micronutrients	<ul style="list-style-type: none"><li>• Feed container-grown plants every two weeks</li><li>• When transplanting or planting perennials</li></ul>
Kelp Meal	Rich in K, micronutrients and growth-enhancing hormones	<ul style="list-style-type: none"><li>• Apply to soil surface around (but not touching) the crowns of plants</li></ul>
Manure (Composted)	N-P-K content varies depending on type; excellent soil conditioner	<ul style="list-style-type: none"><li>• Dig into vegetable beds in early spring</li><li>• Top-dress beds and borders in early spring or late fall</li></ul>

## Applying Organic Fertilizers

Because they work as both fertilizer and soil enhancer, organic fertilizers are often used as part of an on-going program of garden and soil care. Manures and compost may be applied to garden beds in early spring or late fall to enrich the soil for the upcoming season.

During the growing season, fertilizers, such as kelp, can be used to enhance the flowering of shrubs and vines such as roses and clematis, and to feed container-grown plants. When planting shrubs, trees and bulbs, fertilizers high in phosphorus (e.g. bone meal) can be used to help establish a good root system.

Because of their slow-release properties, application rates and quantities are not as critical as they are when using synthetic fertilizers. However, here are some general rules:

1. Follow package directions, if available
2. Mix dry fertilizers such as bone and blood meal into the soil well
3. Thoroughly blend large chunks of material into the soil
4. Apply liquid fertilizers when the soil is moist to prevent burning the roots of plants