

Fertilizers, and Fertilizing 1

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Fertilizer Labels

- All fertilizer labels have three bold numbers. The first number is the amount of nitrogen (N), the second number is the amount of phosphate (P_2O_5) and the third number is the amount of potash (K_2O) it contains. These three numbers represent the primary nutrients (nitrogen(N) - phosphorus(P) - potassium(K)).
- The ratio of nutrients on any plant food is represented by N-P-K and states the amount of each. For instance, a 10-10-10 is a balanced food with equal parts nitrogen, phosphorus and potassium.
- All plants benefit from basic macro- and micro-nutrients. Grass, in particular, needs extra macro-nutrients which can come from air and water but which are used in such quantity that supplemental applications are beneficial.

Nitrogen (N)

- essential for growth of foliage;
- produces lush, tender, green leaves (or grass blades);
- deficiency results in a yellow-green color (chlorosis) and little or no growth;
- is easily flushed through the soil.

Phosphorus (P)

- stimulates root growth;
- hastens the maturity of plants;
- promotes development of flowers, fruits, seeds;
- deficiency can result in slow or stunted growth and purplish discoloration on leaves;
- remains in the soil quite well.

Phosphorus (K)

- gives vigor to tolerate changing weather conditions;
 - helps resist disease;
 - assists in the food manufacturing process;
 - strengthens cell wall structure for strong stems;
 - deficiency can cause weak stems and slow growth;
 - leaches from the soil, not so fast as nitrogen.
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- Most plants, including grasses, flowers, and vegetables, perform best in slightly acidic soil (6.0 to 6.5). Others, like rhododendrons, gardenias and blueberries, require a somewhat higher acidity (4.5-6) in order to thrive.

- While many companies or gardening centers offer soil acidity testing kits, you can usually obtain a soil test for free or low cost through your provincial government environmental office or your gardening society. Avoid having the soil tested whenever the soil is wet or when it's been recently fertilized.
- To take a sample for testing garden soil, use a small trowel to take thin slices of soil from various areas of the garden (about a cup's worth each). Allow it to air dry at room temperature and then place it into a clean plastic container or Ziploc baggie. Label the soil area and date for testing.

Lawns

- Using a fertilizer for lawns can be an effective way to prevent disease and pest damage and minimize maintenance.
- There are time-release fertilizers that are beneficial at feeding the lawn over many months and that prevent the gardener from having to remember to feed again at a certain time. The gradual release also allows plant roots to harvest the nutrients they need slowly, preventing these necessary elements from leaching away into the soil.
- This type of food is easy to apply and minimizes the chance of burning the lawn. Granular fertilizers may be time release or slow release. Either way, they are popular due to the ease of application.
- Liquid or water soluble fertilizers are spread using a hose and provide a quick effective way to introduce nutrients rapidly to plant roots. Many of these forms come in either synthetic or organic forms.
 - Synthetic formulas are chemical and offer immediate release and quick greening of the lawn.
 - Organic formulas are naturally made from once living organisms or their by-products.
- Nevertheless, the easiest way to develop a healthy lawn without adding purchased items is to mow it. Mow leaves onto the lawn and leave the clippings. If you mow frequently enough, the thatch will not build up because shorter clippings will compost in quicker and start amending the soil and adding nutrients.
- The combination of grass clippings and dried leaves hastens the composting process because one is a carbon source and the other is a primarily nitrogen source. This is a one-two punch in the composting world, which breaks down more quickly than nitrogen alone from the clippings. You may find this the best fertilizer for grass and save some pennies along the way.

Other Fertilizers

- Some types of fertilizer are meant to stimulate root growth, stem vigour, and flower and fruit production. Fertilizers of this sort contain little nitrogen and higher levels of phosphorus and potassium; the N-P-K ratio may be **3-20-20**, for example.

- Most lawn grasses are vigorous growers and therefore require significantly more nitrogen than the other plants in your yard. A lawn fertilizer would have an analysis of **26-3-3**, indicating a fertilizer high in nitrogen. However, you would not want to use a fertilizer containing such a high percentage of nitrogen on landscape plants because it would be very easy to burn them.

Balanced Fertilizers

- If you are still trying to figure out what fertilizer is best for your landscape, a general purpose formula of 5-1-3 or 5-1-2 is usually sufficient for most plants. This is not a balanced fertilizer but is a complete fertilizer with some of each macro-nutrient present in the formula.
- If you use a balanced fertilizer, do so only once per year and make sure to provide plenty of water so any unused nutrients can be leached away from plant roots. Otherwise, this can result in a build-up of one or more of the nutrients in soil and can actually increase the amount of that nutrient in water tables if consistently used.
- A better method is to skip the balanced fertilizer and use a formula that more directly targets your plant's needs.

Shrubs

- During the summer months the growth rate of most plants slows down, and when plants are not actively growing, they need very little nitrogen. Although not vigorously putting on new growth, many plants such as dogwoods and rhododendrons are quietly working to produce flower buds for next year. Annual and perennial flowers are also busy making new flower buds.
- To encourage flower bud production, apply a fertilizer that contains a small percentage of nitrogen, a higher percentage of phosphorous, and a little potassium. A liquid fertilizer with an analysis of **5-30-5** is ideal for flower production. Because the product is sold as a bloom producer, the manufacturer often adds a little chelated iron, manganese, and zinc, all also good for your plants.

The Marketing of Fertilizers

- The golden rule of applying fertilizers is "Not enough is always better than too much!"
- A bag of fertilizer on the garden department shelf is a marketing masterpiece, as each brand promises to be the perfect match for your lawn.
- Contrast that with a bag bought by professionals lawn care guys. Plain and simple, it just gives a formula (the fertilizer numbers) and a list of ingredients!

A Fourth Ingredient Number!

- Sometimes, you may see a bottle of fertilizer labeled 0.2.0.0. It may look like .02% N, but this not likely.
- Occasionally a fourth nutrient number is added to a fertilizer formula. Manufacturers will sometimes want to promote a particular fertilizer by denoting that it contains a significant portion of an important trace mineral. When a value is included for the

fourth number, it must be specified what that nutrient is, by name. Common entries for this fourth number refer to the presence of sulphur or iron or zinc.

- Knowing this, we should suspect that the product you have is: 0% nitrogen, 2% phosphorus, 0% potassium and 0% trace minerals.
- So why add a fourth number on the label, if it is zero? Simply because companies sometimes produce products which do use the #4 slot, so it standardizes their operation to show it, even when it is zero.

Rhododendrons

- **For all trees and shrubs:** If needed, the best time to fertilize is late April or early May, or in late fall once plants are dormant. The recommended fertilizer should be spread evenly across the soil surface. The amount of actual nitrogen applied should be three lbs per 1000 feet² (1.5 kg/ 100 m²).
- **Rhodos:** Feed the plant when its finished flowering by spreading fertilizer around the plant, soaking it in well. Foliage may be fed with a liquid fish fertilizer, but this is not enough to set buds for the following year. Use a good rhododendron fertilizer with trace elements, and do not feed after the end of June.
- Terry recommends a Borden Mercantile, Victoria, fertilizer: it is all organic mix of 4-2-2. It has calcium, magnesium and sulphur through the dolomite lime and the complete spectrum of trace elements contained in the other seven ingredients.
 - 10 kg is \$18.4; 20 kg is \$29.99

To Generally Fertilize or Not

- If your soil is fertile and your plants look happy, there's no urgency to learn about feeding rhododendrons. No fertilizer is always better than too much fertilizer, so you might do best leaving healthy plants alone.
- Be wary of nitrogen deficiencies, however, if you mulch with fresh sawdust or wood chips. As these materials disintegrate into the soil, they use up available nitrogen. If you see your rhododendron growth slowing and the leaves turning yellow, you'll need to start fertilizing rhododendron bushes with a nitrogen fertilizer.
- However, take care when applying nitrogen fertilizer. If you live in a cold climate, don't add nitrogen after early summer since it can produce lush new growth easily damaged in winter. Apply only what you need and no more, since excess fertilizer burns a plant's roots.
- Unless you know that your soil is deficient in one nutrient but not the other two, choose a complete fertilizer containing all three ingredients, like 10-8-6 or 4-2-2.
- Some fertilizers state they are specifically for azaleas and rhododendrons. These specialty fertilizers are formulated with ammonium sulfate to acidify the soil at the same time as providing nitrogen. If your soil is naturally acid, there is no need to buy these expensive specialty products for feeding your rhodies; just use a complete fertilizer.
- Granular fertilizers are less expensive than other types. You just sprinkle the amount specified on the label on the top of the soil around each plant and water it in.

- It's easy to figure out when to feed a rhododendron. You can start fertilizing rhododendron bushes at planting time, and do it again in early spring as flower buds swell. Use a light hand, since applying too much rhododendron fertilizer can do more harm than good. Sprinkle on once again very lightly at leaf emergence if the new leaves look pale.