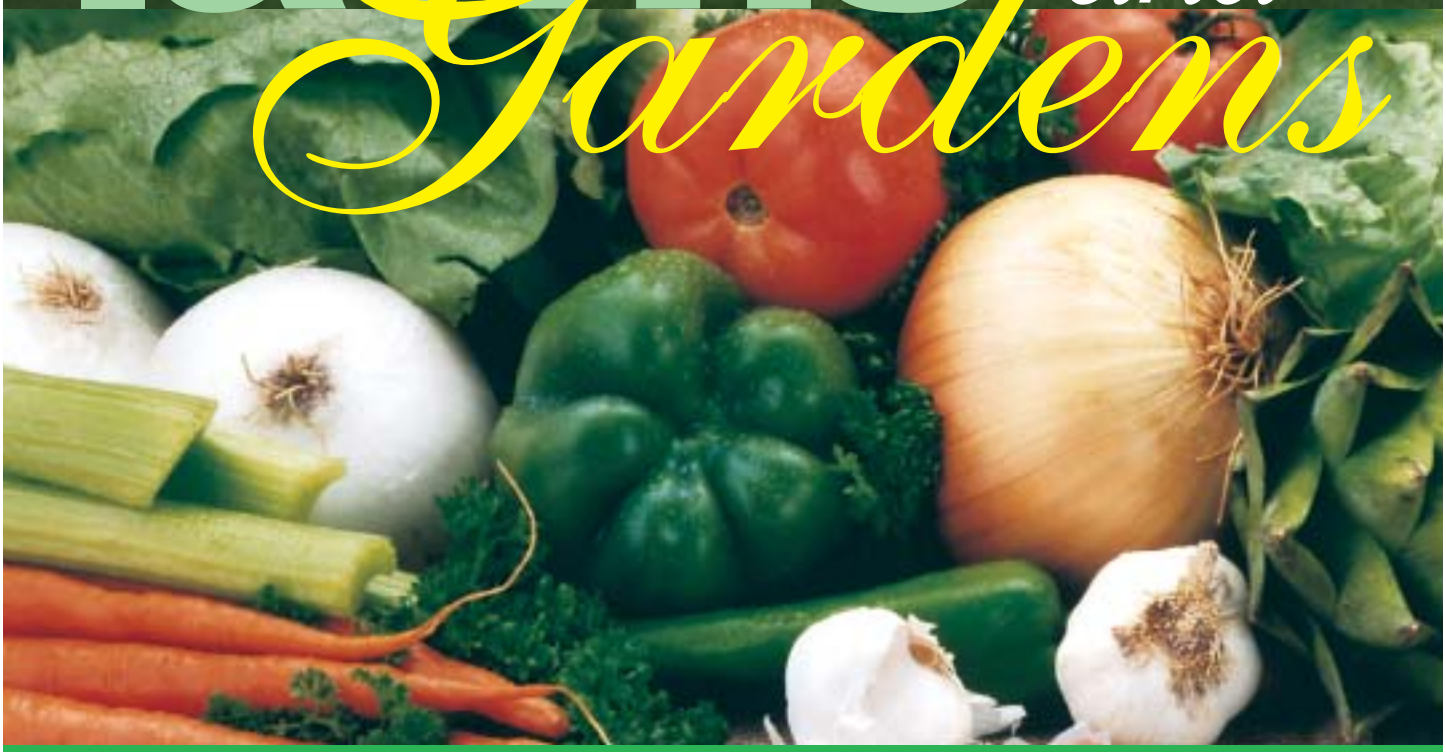
fertilizer for lawns and Gardens



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nutrients

nutrient deficiencies

For proper plant growth all plant nutrients must be available in sufficient quantities. Although there are 16 essential plant nutrients most of these nutrients do not need supplementation since the soil provides sufficient quantities for normal plant growth.

Of the 16 plant nutrients, nitrogen and phosphorus often require supplementation. Similarly, potassium and sulphur may be required on specific soils however, these deficiencies are less frequent.

nutrient function

Nitrogen, phosphorus, potassium and sulphur all play specific roles in plant nutrition.

Nitrogen promotes rich, lush growth and a healthy, dark green colour. Lawns, lettuce, spinach, and other green leafy plants require a plentiful supply of available nitrogen to produce abundant growth. Nitrogen is generally needed on lawns and gardens.

Phosphorus promotes the development of strong, healthy root systems (particularly storage roots such as beets), good flowers, seed development, early maturity, and a normal healthy green colour. Phosphorus is generally needed on all lawns and gardens, however it is important to note that phosphorus can accumulate with annual applications, thus negating the need for additional phosphorus additions.

Potassium has a strong balancing effect and promotes sturdy stems, strong root systems, and a resistance to disease. It is essential for starch formation and for the translocation of sugars in plants. Potassium is seldom deficient, however, many homeowners spend long hours and considerable money caring for their lawns and gardens, and in such cases, use of potassium is recommended. By so doing, poor results, because of unsuspected potassium deficiencies, are avoided.

Sulphur, like nitrogen, promotes a dark green colour, and a lack of sulphur may result in yellow leaves. Sulphur deficiency may also result in a failure of some plants to set seed. Sulphur seems particularly important for cole crops (cabbage, broccoli, and cauliflower). Sulphur deficiency is common in many Grey Wooded soils and may be lacking in coarser textured (sandy) soils as well.

Nutrients such as copper, zinc, manganese, boron, etc. are all required by plants in very small amounts. They are often called microelements, micronutrients or minor elements. Addition of these nutrients has not been required on most soils in Alberta. This does not mean that there is no possibility of improvements in plant growth from micronutrient additions.

Homeowners are cautioned when using borax, zinc sulphate, copper sulphate or other materials supplying micronutrients. Although minute quantities of these elements are essential to plant growth, even slight excesses can be seriously harmful. Those anxious to try any of the microelements as a fertilizer are advised to obtain a commercial fertilizer containing these elements and follow the manufacturer's directions.

fertilizer analysis

The percentage of N (Nitrogen), P_2O_5 (Phosphorus), K_2O (Potassium) and S (Sulphur) contained by a fertilizer is denoted by the fertilizer analysis (e.g. 16-20-0-13). The first number refers to the %N, the second %P_2O_5, the third %K_2O and the fourth %S. All percentages refer to percent by weight.

fertilizer recommendations *for lawns*

established lawns

Established lawns should be fertilized two to three times a year. The first application usually occurs early in the spring (April/May) and the succeeding applications six and eight weeks apart depending upon the lawn's appearance.

Applications made late in the growing season, after August 15, but before the grass goes dormant are not recommended. These applications may delay the hardening-off or dormancy of the lawn, resulting in patches of winter-kill or a number of fungal diseases.

A late fall (October) fertilizer application can be applied after a killing frost has occurred. A late fall application replaces the need to apply fertilizer in the spring and will result in early spring green-up and growth.

For young lawns (one to five years) and lawns that have not received regular phosphorus application, a N-P fertilizer (i.e. 16-20-0-13) is generally recommended for early spring applications. For subsequent applications a nitrogen fertilizer (i.e. 21-0-0) is recommended as additional phosphorus is not generally needed under most Alberta conditions. Similarly, older lawns that have received annual applications of phosphorus do not generally require phosphorus, thus a nitrogen fertilizer is generally used in all applications.

It is important to note that the above recommendations are very general and that a soil test should be performed every three to five years to determine if additional phosphorus and other plant nutrients are required.

new lawns

Prior to seeding or sodding, a fertilizer high in phosphorus is generally broadcast over the soil surface and worked into the soil to a depth of about two inches. The best way to determine how much fertilizer is needed is through a soil test, however 9 pounds of 11-52-0 per 1000 square feet is a general rate.

If additional N and P are required, application of 16-20-0-13 (4 pounds per 1000 square feet or 8 cups per thousand square feet) can be made after the lawn is established.

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General fertilizer recommendations for established lawns are shown below:

	Fert. Grade	lbs/ 1000 sq ft	cups/ 1000 sq ft	kg/ 100 sq m
N	21-0-0-24	5	10	2.5
	46-0-0	2	4	1
	34-0-0-11	3	6	1.5
N - P	35-15-0	3	6	1.5
	16-20-0-13	6	12	3
	27-27-0	4	8	2
	11-52-0	9	18	4.5
N - P - K	13-16-10	8	16	4

fertilizer recommendations *for gardens*

vegetable gardens

Fertilizer may be broadcast and incorporated prior to planting or may be placed in a row beside and below the seeds. Never allow fertilizer to come in contact with the seeds.

A soil test is the best way to determine the nutrients and application rates required for your garden. However, if a general recommendation is required, 6 pounds of 16-20-0-13 per 1000 square feet is generally good for vegetable gardens.

application *hints*

To achieve good results when fertilizing a lawn, there are several important steps to remember:

- ✓ Divide the total amount of fertilizer to be applied in half; apply each half over the entire lawn, in two directions at right angles. Uneven application will show up later as dark green or pale strips.
- ✓ Spread fertilizer on a dry lawn; wet grass (even with dew) can burn when the fertilizer dissolves on the leaves.
- ✓ Water the lawn heavily immediately after fertilizing to dissolve the fertilizer. This makes it available to the plant by washing it off the grass leaves and down into the rooting zone.
- ✓ If the lawn cannot be watered, try to apply fertilizer just prior to a heavy rainfall. There is less chance of the lawn being damaged if a small amount of fertilizer is used - about 0.4 kg N/100 square meters (about ¾ pounds N/1000 square feet).
- ✓ Move the spreader off the lawn when filling it. Accidentally spilled fertilizer is difficult to pick off the grass. The consequence may be a very lush patch or a burned spot.
- ✓ Close the spreader whenever you stop or turn, otherwise the fertilizer continues to spill out.

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