



Fertilizers

Fact Sheet 4

Plants require nitrogen, phosphorus and potassium. Nitrogen promotes top growth, phosphorus promotes root development and potassium aids in stress resistance. The three numbers found on fertilizer labels refer to the percentages of macronutrients in the product and are always listed in the following order: % nitrogen - % phosphorus - % potassium. In addition to these three macronutrients, plants also require small amounts of trace nutrients such as iron and magnesium.

Chemical Fertilizers

Chemical fertilizers are available in either quick- or slow-release formulas. Quick-release fertilizers contain water-soluble nitrogen, which is readily available to plants. Slow-release fertilizers have at least one third of their nitrogen in an insoluble form. This portion of nitrogen is not immediately available to plants but becomes available over time through microbial activity. Slow-release fertilizers produce green lawns over a longer period of time and encourage healthy root development. Quick-release fertilizers, on the other hand, must be applied more frequently and in lower concentrations. If applied in too high a concentration, they will burn grass and leach away, polluting nearby bodies of water.

Quick-release chemical fertilizers flood the soil with more nutrients than can be absorbed and stored at one time. Earthworms - the beneficial critters that burrow through soil creating passageways for air and water movement - are especially sensitive to chemical fertilizers.

Organic Fertilizers

Organic fertilizers are excellent slow-release fertilizers. In addition to supplying macronutrients, these fertilizers improve soil structure and water retention and contribute valuable trace nutrients. Because nutrients in organic fertilizers are released slowly over a long period of time, they are less likely to wash away and are gentler on soil organisms than synthetic fertilizers. Combine two or more of the following to get the ideal (for your lawn) mix of macro and trace nutrients, organic matter and plant hormones:

kelp (seaweed) - provides nitrogen, phosphorus, potassium, various trace nutrients and plant growth hormones; stimulates soil life

fish emulsion - provides nitrogen, phosphorus and potassium

composted poultry manure - provides both soluble and insoluble nitrogen; low in organic matter

bone meal - provides phosphorus and potassium

blood meal - provides nitrogen

wood ash - provides potassium

Finished compost is an excellent soil amendment that adds trace and macro nutrients to your soil as well as organic matter. If your soil is compacted, aerate before topdressing with compost.

Use finished compost from your own backyard bin and/or commercial compost products. Put homemade compost through a coarse mesh screen and scatter over your lawn.

When to Fertilize

Follow nature's example and fertilize in the fall. This is the best time to fertilize because photosynthesis activity remains high but cool temperatures slow top growth. Grass plants make more food than they can use. The carbohydrate level in plant tissue, shoots and roots builds up and carries over into the spring when it can be used to help the grass get off to a good start.

Springtime and mid-season lawn fertilization are popular among homeowners. Springtime fertilization is not recommended because it encourages excessive top growth for grass as well as weed species. Mid-season fertilization is also not recommended because summer is naturally a slow growth or dormant period for grasses. If you do fertilize at these times, use the product sparingly and water sufficiently to support growth.

Ideally, nitrogen should be added to your lawn in continuous small amounts just sufficient to meet its needs. Yet chemical lawn care companies usually apply nitrogen several times a year in relatively large amounts. This practice is environmentally irresponsible and a waste of money.

Add nitrogen and other nutrients to your lawn by leaving clippings where they fall. Clippings are a free and convenient fertilizer, which satisfy up to 30% of your lawn's nutrient requirements while suppressing weed growth. The City of Toronto does not pick-up grass clippings as yard waste so either leave them on your lawn or compost them in your backyard compost bin.

Contrary to popular belief, clippings do not cause thatch problems, Over fertilization does. In a healthy, chemical-free lawn, micro organisms and earthworms decompose thatch and release nutrients into the soil and roots. Prevent excessive thatch by fertilizing only once or twice a year with organic products. Reduce existing thatch by raking and topdressing with compost.

Incorporating clover into your lawn is another method of securing nitrogen. Clover is a legume that fixes nitrogen from the air and brings minerals up from below roots. It is a valuable addition to a healthy organic lawn.

More Information

Franklin, Stuart. 1988. Building a Healthy Lawn: A Safe and Natural Approach. Vermont: Garden Way Publishing.

Rubin, Carole. 2003. How to get your Lawn and Garden off Drugs: A Basic Guide to Pesticide-Free Gardening in North America. Madeira Park, BC: Harbour Publishing.

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OLA gratefully acknowledges funding from the Ontario Trillium Foundation

Last revised April 2008