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Fertilizer Care for the Home Lawn

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An annual topdressing of screened compost is one of the best things you can do for a home lawn. Compost is an excellent source of important soil microorganisms and slowly available nitrogen and other essential elements, which will feed the lawn for several months. It also increases soil aeration and water-holding capacity. A layer no more than 1/2 inch thick spread evenly over the entire lawn should be worked down through the grass to the soil surface. Green grass should be visible above the compost. The main difficulty in applying compost is the quantity required. One cubic yard (one pickup truck load) of compost and will cover an area of about 650 square feet at a cost of around $35 if you buy in bulk.

The cost can make it impractical to apply compost more than once a year, but commercial lawn fertilizers can be used as necessary after that. Fertilizer requirements of the various turfgrasses in Hawai'i differ greatly. Hybrid bermudagrasses have the highest fertilizer requirements; zoysiagrasses, seashore paspalum, and St. Augustinegrass need less; and centipedegrass has the lowest requirement. The main objective of a good turf fertilizer program is to promote good color and vigor without producing excessive growth. Over-fertilizing with nitrogen promotes lush growth, which can lead to a number of problems including rapid thatch buildup, increased susceptibility to disease and insect infestation, and (of course) the need to mow more often.

A good general lawn fertilizer should provide all three of the major essential elements: nitrogen, phosphorus, and potassium (N, P, and K). The three numbers on the front of every fertilizer bag represent the percent by weight of these three elements. The first number represents N. Nitrogen is required in the greatest amount by turfgrass and should be the highest value, by a ratio of at least three to four times the other two. The N can be present as a mixture of several different materials. Some of these are very water-soluble and are rapidly released in a short time; others are formulated to be released slowly over a longer period.

All commercial fertilizers are chemical compounds that must first be dissolved in water and soak into the soil before they can be absorbed by the roots of plants. Highly soluble forms of nitrogen such as urea or ammonium dissolve quickly and are readily available. The grass greens up and its growth rate increases sharply about two days after application, reaching a peak in about 2 weeks and tapering off to the original condition after 4–5 weeks. These peaks and valleys in growth rate are typically produced by readily soluble fertilizers, and frequent applications are required to keep the lawn looking uniform. There is also a greater danger of burning the grass by applying too much at one time.

The newer slow-release formulations for nitrogen overcome several of the shortcomings of the soluble sources. These are synthetics that have a much slower, longer residual-N release pattern and a greatly reduced burn potential, and therefore they do not produce the peaks and valleys in growth rate. There are several forms of slow-release N available; the most common one found in typical home-lawn fertilizers is called sulfur-coated urea, or SCU. This is usually mixed with more soluble N forms to compose the total N percentage of the fertilizer. The more slow-release formulation, the better. To determine what, if any, amount of slow-release N is present, look on the back of the bag in the label section marked "guaranteed analysis." The total N percentage

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will be broken down into the various forms of N in the mixture. The soluble forms are listed as ammoniacal N or urea. If there is any slow-release N, it will be listed with an asterisk on the urea as "slowly available nitrogen," usually in the form of SCU. Look for the fertilizer containing the greatest amount of slow-release N.

The final consideration when using commercial fertilizers is how much to apply at one time, and how to spread it. The amount of fertilizer you apply will depend on the formulation you buy. The recommended amount for grass is 1 pound of N for every 1000 square feet of lawn. To determine how many pounds of fertilizer this will require, look at the first number on the front of the bag; that is the percentage of total nitrogen (all forms of N). Divide that number into 100. This gives the pounds of that particular fertilizer to use for every 1000 square feet of lawn. For example, a 2000-square-foot lawn using a 30-5-5 formulation requires 3.33 pounds of fertilizer (100/30) per 1000 sq ft, or 6.6 pounds for 2000 sq ft.

Always use a rotary spreader to make the application, and water the lawn well immediately afterward. Hand spreading always results in an uneven application that can cause some areas to be burned and others to remain unfertilized. And, by the way, grass clippings do not add to thatch buildup and are best left on the lawn if the grass is mowed often enough. The clippings contain large amounts of nitrogen and other essential nutrients that will be recycled back into the soil. Thatch accumulates more rapidly as a result of too much water and nitrogen fertilizer. Higher mowing heights also allow for thicker thatch.

See also . . .

Calculating the amount of fertilizer needed for your lawn
http://www.ctahr.hawaii.edu/oc/freepubs/pdf/TM-9.pdf

Turf fertilizers for Hawaii's landscapes
http://www.ctahr.hawaii.edu/oc/freepubs/pdf/TM-13.pdf

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