Turfgrass Series

How to fertilize a residential lawn

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Unlike humans or animals that digest proteins, carbohydrates and fats, plants require only inorganic mineral nutrients. Sixteen chemical elements called the essential nutrients are required for the growth and development of plants and without them plants cannot complete their life cycle. Carbon, hydrogen and oxygen are taken from the air and water. Nitrogen, phosphorus and potassium, frequently called primary macronutrients as well as calcium, magnesium, sulphur, iron, manganese, zinc, boron, copper, molybdenum, and chlorine, are taken mostly from the soil.

Figure 1. A typical fertilizer label.

Fertilization and Fertilizers

Anyone who has ever grown a plant understands the importance of fertilization. Application of some fertilizer makes plants grow faster, but applying too much can harm or kill them. Most nutrients are absorbed by roots from the soil and almost immediately accessible to plants. Many fertilizers are made commercially and available on the market. Manufactures offer a wide variety of nutrients, nutrient proportions, combinations of organic and inorganic compounds, types of nutrient release, and formulations. Basic information about each fertilizer is printed on its label (Figure 1). Every label shows three numbers (usually in larger font) indicating the percentage of nitrogen, phosphorus and potasium in the fertilizer. Most fertilizer labels also include percentages of specific nutrient carriers (nitrates, ammonia), chemical formulas, type of release (slow, fast), and type of formulation (powder, granular, liquid), etc.

Even though 16 different mineral elements are essential for the growth of turfgrass, nitrogen is by far the most important. Other nutrients are often at sufficient or nearly sufficient levels. Ammonium sulphate, ammonium nitrate, urea, calcium nitrate, and potassium nitrate are commonly used turf fertilizers. Once they are applied to the turf, they dissolve and act quickly.

Figure 2. Centifugal spreader.

Methods of Application

Unlike those used on agronomic crops, turf fertilizers must be applied over the foliage of the already growing plants. Fertilizers can be applied with either a drop-type spreader or a centrifugal spreader.

A drop-type spreader assures more accurate application but for homeowners is usually too tedious to use. The centrifugal spreader (Figure 2) is the most popular and less precise but in most situations sufficiently accurate. It has a much wider pattern of distribution.

Figure 3. Hand-held spreader.

Small areas can be fertilized with hand-held spreaders (Figure 3). On even smaller areas, a jar with holes punched in the lid can be also used – this method was already described in "How to seed a residential lawn". A hand operated spreader or jar is usually refilled several times to spread the required amount of fertilizer. The previously determined amount of fertilizer should be placed in the spreader and applied as evenly as possible over the intended turf area.

Many dry fertilizers may burn turf leaves, especially when the air is humid (typical on Guam) or when turf is moist. Therefore, light watering immediately after fertilizer application is helpful and highly recommended.

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