Evaluating fertilizer programs

Lawn fertilization is undergoing changes not seen since the first Chem Lawn truck appeared in the neighborhood. Big box stores now sell more fertilizers than garden centers, phosphorus from turf applications contributes to water pollution, fluctuating fertilizer ingredient costs, and plain old marketing are making it hard to apply what a lawn needs. People wanting nice lawns are going to have to adjust to changing fertilizer formulations and look past the hype.

Learn the language

Fertilizers come in different concentrations. Numbers on the bag, called the "analysis," are the percentage of each nutrient. The numbers are always given in the same order – Nitrogen (N), Phosphorus (P) and Potassium (K). Rate is how much you apply on 1,000 square feet of turf.

What the numbers mean

A 10-6-14 fertilizer is 10 percent actual nitrogen, 6 percent actual phosphorus and 14 percent actual potassium. So 100 pounds of this fertilizer has 10 pounds of actual N, 6 pounds of actual P, and 14 pounds of actual K. It is important to be able to figure out the actual amounts that fertilizers contain because they have different combinations and concentrations. The bigger the number, the more concentrated and the lower rate you would apply.

What turf needs in a year

A lawn needs about 4 pounds of actual N, 0 to 1 pound of actual P, and 2 to 3 pounds of actual K per 1000 square feet per year. This is usually applied in four or five applications per year. The critical factor in each application is to get between 0.75 and 1 pound of N. N is not stored in the soil and needs to be applied every 4 to 6 weeks. P and K are stored in the soil and can be applied any time during the year.

How to evaluate your self-applied fertilizer program

Manufacturers keep changing their formulations and giving them fancy names, so it is not as easy as it used to be. Furthermore, prices vary so much, and if you know what to buy, you can save a ton of money.

- Measure how many square feet are in your lawn. Round the answer to the nearest 1,000 square feet. Divide the answer by 1,000 so you know how many thousands of square feet in your lawn. (Say you measure 12,200 square feet. Round to 12,000 square feet. Divide by 1,000 and you have 12 thousand square feet)

- Look at a bag of fertilizer and write down the weight and the numbers on the bag. For example, a Scotts Turf Builder with Iron weighs 14 pounds, and is a 29-2-4. Scotts says it is for 5,000 square feet. Divide the pounds by the thousand square feet to see how many pounds of product Scotts suggests you apply. 14/5 = 2.8 pounds.

- Figure the amount of actual N this will apply. Rate x % of N = # of actual N. 2.8 x 29% = 0.81 # of actual N. Figure how much P and K this will apply the same way. 2.8 x 2% = 0.06 P, and 2.8 x 4% = 0.11 # of K.

- Build a little table to keep track of what your figures are so you can either total up what you plan to add for the year or keep track of what you have actually applied. Since September is the most important application of the year, we will begin recording with this application.

Date	Analysis	Rate	Actual amounts applied		
			N	P	K
Sept 1	29-2-4	2.8	0.81	0.06	0.11
Nov 1	29-2-4	2.8	0.81	0.06	0.11
May 15	29-2-4	2.8	0.81	0.06	0.11
Aug 1	29-2-4	2.8	0.81	0.06	0.11
	Total	11.2	3.24	0.24	0.44

- Suppose you plan to use Turf Builder with iron for four applications, how much actual fertilizer will you have applied in a year?

- The actual amounts of N and P are within range, but the amount of K is not enough to maintain good turf. If existing soils have low levels of K, you can expect poor turf performance. You can meet the K needs of the turf by making a supplemental application of 0-0-60. The normal rate to apply is 2 pounds, which would apply 1.2 pounds of actual. This would bring the yearly applied K up to 1.64 pounds actual. (0.44 + 1.2 = 1.64) This amount is better but still below the recommended level of 2 to 3 pounds of actual K per year.

- If you want to add a certain amount of a nutrient, you need to determine the rate. Divide the amount you want to add by the percent of that nutrient to get the rate. For example, if you want to add 1 pound of actual K and the fertilizer is 0-0-60, 1/ 60% = 1.67 pounds of 0-0-60.

- You don't have to follow the manufacturer's suggested rate. Increasing N rates should mean longer times between applications, usually 4 to 6 weeks. Remember, don't apply more than 1 pound of actual N per application. Don't apply more than 2 pounds of 0-0-60 at an application, and never mix 2 fertilizers together to apply at the same time.

- If you want to apply at a different rate, you need to know how many thousand square feet your lawn is in order to purchase the right amount of product. If you want to apply 1 pound of N, divide by the percent of N to get the rate to apply (1/ 29% = 3.44 # of 29-2-4 per 1,000 square feet). If you had 5,000 square feet, you would need 17.2 pounds of the fertilizer (5 x 3.44 = 17.2).

How to evaluate a professionally applied program

Simply ask your professional the actual amounts of N, P and K the program applies in each application, plug the numbers in your table, and add them up. Give the one who will apply the fertilizer a chance to look up the amounts, but if the person cannot or will not tell you, find a different company.

Other Information

All fertilizer programs are maintenance programs that assume P and K soil levels are at "medium" levels. If you have high expectations for your lawn, take soil samples every three years and send to a soils lab for analysis. Never add lime without taking a soil test first.

Iron is sometimes added to green up older varieties of grass without stimulating growth and is not very important.

Crabgrass and grub preventers are often put on fertilizers. The timing of these is important, and you can adjust your fertilizer program so you do not apply too much nitrogen.