**Fertilizer Time**

It is still a bit early, but we are getting close to time to start fertilizing yards and pastures. Whether you are fertilizing your yard or 100-acre hay meadow, it is important to understand how to put out the required rate of the correct nutrients. Here is a quick guide to understanding the numbers and ingredients in a bag or several tons of fertilizer.

All fertilizer bags should contain three bold numbers. An example would be 12-12-12; this is a fertilizer we are all familiar with. The first 12 stands for the amount of nitrogen (N), in the bag of fertilizer, the second 12 is the amount of phosphate (P2O5), and the last 12 would be the amount of potassium (K). These are the three primary fertilizer nutrients required for plant growth. These are typically seen as nitrogen (N), phosphorus (P), and potassium (K). So, in this example a bag of triple 12 contains 12% nitrogen, 12% phosphate, and 12% potassium or potash. These 3 numbers are a national standard and must always be either on the bag or label whether you are buying 50 lbs. or 5 tons of fertilizer.

In this example, triple 12 would be considered a blend that contains all three of the primary nutrients. To understand exactly how many pounds of each nutrient are in a 50lb bag of triple 12 you would multiple 50 by 0.12, which equals 6 lbs. of each nutrient. In total, you are actually paying for 18 lbs. of nutrients in a 50 lb. bag of triple 12. This simple calculation holds true regardless of the fertilizer blend. This will also work if you are buying by the ton. Let’s take 1 ton of 24-10-10 as an example. You will multiply 2000 lbs. by 0.24 to get the amount of nitrogen per ton, and 2000 by 0.10 to get the amount of both phosphate and potash in a ton of this blend. In this example, you are getting 480 lbs. of N, 200 lbs. of P, and 200 lbs. of K in one ton.

How do you use these numbers? For pastures and meadows where you are figuring per acre amounts it is really quite easy. Let’s suppose your soil test indicated you will need 50 units of nitrogen, and 20 units of both phosphate and potash per acre. If you apply 200 lbs. per acre of 24-10-10, you will be applying 48 units of N per acre, and 20 units of both P and K per acre.

For homeowners and turfgrass managers it requires a little more math but is equally easy to figure. Let’s use the blend 16-6-12 as our example. You have a 50-lb bag of 16-6-12 fertilizer that you want to apply to a lawn at a rate of 1.0 lb. nitrogen per 1000 sq. ft. How much of the 16-6-12 fertilizer will you need to apply per 1000 sq. ft?

The quickest way to solve this problem is to ignore the weight of the fertilizer bag and simply divide the amount of nitrogen desired (1.0 lb. nitrogen per 1000 sq. ft) by the percentage of nitrogen in the bag (16%). When using percentages in calculations, convert the number to its decimal form (for example, 16% = 0.16). (1.0 lb. nitrogen per 1000 sq. ft) ÷ 0.16 = 6.25 lb. of a 16-6-12 fertilizer is needed to supply 1.0 lb. nitrogen per 1000 sq. ft.

Now we know how much 16-6-12 we need to get the 1 lb. of N we need per 1000 sq. ft., but how much P and K will we be applying? Multiply the amount of fertilizer you are applying (6.25 lb. per 1000 sq. ft) by the percentage of phosphate in the bag (6%). Do the same for potash (12%). Remember to convert the percentages of phosphate and potash to their decimal forms. (6.25 lb. fertilizer per 1000 sq. ft) x 0.06 phosphate = 0.375 lb. phosphate per 1000 sq. ft and (6.25 lb. fertilizer per 1000 sq. ft) x 0.12 potash = 0.75 lb. potash per 1000 sq. ft. If the math is too much for you, do not worry there are plenty of charts and calculators available on the world wide web.

Be sure you are using a soil test to determine the amounts of nutrients you actually need. The soil test results will aid you in choosing the correct blend of nutrients to apply.