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EXTENSION SERVICE

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Converting WVU Soil Test Recommendations to Your Needs

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Interpreting a WVU soil test report

The standard soil test report from the WVU Soil Testing Laboratory gives recommendations for adding lime and three major plant nutrients (nitrogen, phosphorus and potassium) to your soil. Be sure and use the recommendation rates listed at the bottom, not the concentrations listed at the top.

Lime

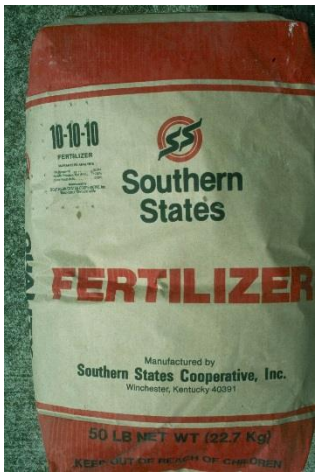
Ag lime is recommended if pH is below 6.5. Recommended rates are given in tons/acre or lb/1000 square feet (sq.ft.). Always use finely-ground agricultural limestone (less than 60 mesh).

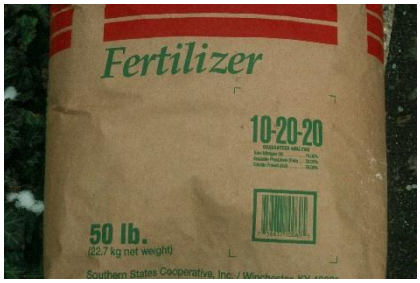
Cautions:

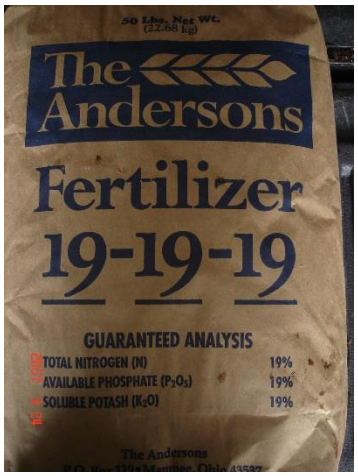
1. If lime has been added within the last six months, do not add more. Lime requires several months to react with the soil. Try to apply lime in the fall for spring plantings and growth.
2. If magnesium (Mg) is low, use dolomitic limestone when adding lime. This is especially important for spring pastures.
3. If planting peppers, pH of 5.6 to 6.0 is best.

Fertilizer

Fertilizers must give their percent composition in a label on the bag for three fertilizer nutrients: nitrogen (N), phosphorus (P_2O_5) and potassium (K_2O), presented in that order. For example, common complete fertilizers are 10-10-10, 19-19-19 or 10-20-20. Some fertilizers contain only one or two of the three nutrients, such as 33-0-0, 18-46-0, etc. For 10-20-20, the first number in the percent composition (10) simply means that there are 10 lb of N in each 100-lb bag or 5 lb of N in a 50-lb bag. The 20 for the second and third numbers means that there are 20 lb of phosphorus and potassium, respectively, in a 100-lb bag (or 10 lb of each in a 50-lb bag).







Since WVU Soil Test recommendations are given in terms of lb/acre or lb/1000 sq.ft., you must convert pounds of recommended nutrients into pounds of fertilizer to apply using the percentages of nutrients contained in the fertilizer you purchase.

Example of a WVU Soil Test Recommendation:

2 lb. N/1000 sq.ft.
4 lb. P_2O_5/1000 sq.ft.
2 lb. K_2O/1000 sq.ft.

Try to purchase a fertilizer material with a ratio similar to your recommendation. In this case, a material with a 1:2:1 ratio is best, and the best fertilizer material that is readily accessible is 10-20-10. If you cannot find the correct ratio, always calculate your fertilizer application rate based on the first number of the three (nitrogen) and match the other two nutrients as closely as you can. Calculations are as follows:

$$\frac{\text{2 lb N recommended/1000 sq.ft.}}{\text{10\% N in fertilizer}} = \frac{2}{0.1} = \text{20 lb of 10-20-10/1000 sq.ft.}$$

Spread the 20 lb of 10-20-10 fertilizer evenly over the 1000 sq.ft.

When 20 lb of 10-20-10 fertilizer is added to 1000 sq.ft., then you will be adding

20 lb x .20 (or 20%) = 4 lb P_2O_5/1000 sq.ft.

20 lb x .10 (or 10%) = 2 lb K_2O/1000 sq.ft.

First calculate the right amount of N and then make sure you have enough (or more) of the other two nutrients to meet what is recommended. Adding more phosphorus and potassium is okay since both are held tightly and retained by most agricultural soils and will not easily leach. However, if your soil doesn't require P or K, then use a single element fertilizer with only N.

In short: $\frac{\text{Pounds recommended of nutrient/area}}{\text{\% nutrient in fertilizer}} = \text{pounds fertilizer/area to apply}$

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