

## LIME RECOMMENDATIONS

Your Soil Test Report contains information on the amount of lime needed to adjust the pH of the soil to 5.5 - 6.0 for optimum tobacco production. Lime application according to soil test will lower the soil acidity and reduce exchangeable aluminum and manganese, both of which can be toxic to plants. It will also increase the absorption of phosphorus and other nutrients and increase the supply of calcium and magnesium available to the plants.

Lime is never suggested for tobacco except when a soil test indicates there is a need. Tobacco fields should not be overlimed because of the possibility of increasing certain disease problems (black root rot and black shank) and causing an imbalance of certain micronutrients.

## FERTILIZING TOBACCO PLANT BEDS

Apply 50 - 75 pounds of 12-6-6 fertilizer per 100 square yards and disk into the top 2 to 3" of soil.

## ADDITIONAL INFORMATION

For more information, contact your local Virginia Cooperative Extension (VCE) office or access the Internet and connect to VCE's web site at <http://www.ext.vt.edu>.

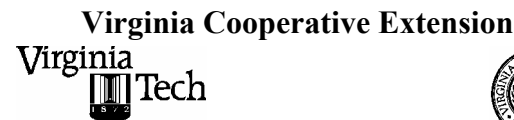
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SOIL TESTING LABORATORY

## Soil Test Note 6: Flue-Cured Tobacco (Supplement to Soil Test Report)

## FERTILIZER RECOMMENDATIONS

Your Soil Test Report contains information on the basic amounts of nitrogen, phosphorus, and potassium required for optimum growth of flue-cured tobacco according to the information you provided on the Soil Sample Information Sheet and the results of the laboratory tests. In making the recommendations, average soil and weather conditions and the use of high-level management practices are assumed.

An example of the grade or grades of fertilizer that will fit the nutrients recommended is contained in the report. Other grades or combinations of grades that are available locally may be used if desired in meeting the crop's nutrient needs.

It should be noted that your past experience should be a major consideration in arriving at the final fertilizer rates to use.

Do not apply excessive amounts of fertilizer indiscriminately. There has been a tendency for tobacco growers to use much higher rates of nitrogen, phosphorus, and potassium than can be expected to give profitable returns.

## **ADJUSTMENT IN NITROGEN RECOMMENDATIONS ACCORDING TO SOIL TYPE AND DEPTH TO SUBSOIL**

For sandy loam soils of average fertility, the following table shows the amount of nitrogen needed when leaching losses are low.

Depth to Subsoil, Inches	Nitrogen Suggested, Pounds/Acre
0 - 12	50 - 60
12 - 18	60 - 70
18 - 24	70 - 80

On heavy textured and/or very fertile soils, 40 to 50 lbs of nitrogen will generally be enough. On sandy soils with more than 24 inches to the subsoil, more nitrogen may be needed.

At least 50% of the total nitrogen in the preplant fertilizer should be in the nitrate form. In the sidedressing fertilizer, at least 50% of the nitrogen should be in the nitrate form, and, in many cases, a favorable response can be expected from 100% nitrate-nitrogen. Evidence from numerous experiments has not shown any superiority of natural or synthetic organics over standard inorganic sources of nitrogen for the production of flue-cured tobacco.

## **ADJUSTMENT IN NITROGEN AND POTASSIUM RECOMMENDATIONS TO COMPENSATE FOR LEACHING**

Supplemental nitrogen and potassium, applied in addition to the base amounts recommended, will replace nutrients lost by leaching. Both yield and quality can be greatly reduced if leaching occurs during the early growth period--prior to the time tobacco grows waist high.

On good, sandy loam soils with top soil of 8 to 12", little or no leaching will result from a 1" rainfall. The soil will be saturated for a depth of about 12". On coarser textured soil, moisture-holding capacity will be less and leaching will be greater. On finer textured soil, moisture-holding capacity will be greater and leaching will be less. The use of a rain gauge is strongly recommended so that actual rainfall can be used as a guide in estimating the amount of leaching and the amount of replacement fertilizer to apply. When 2 to 4" of rain falls within a 3 to 5 day period from the time fertilizer is applied to the time tobacco is waist high, it will often be desirable to apply from 15 to 30% of the original quantities of nitrogen and potash to replace these nutrients that have been leached below the effective root zone or carried away in runoff water. The soil type is an important factor in determining the amount of additional nutrients to supply. On deep sandy loam or coarse sandy loam soils, it may be necessary to apply more than 30% of the original nitrogen application. Much lower rates of supplemental materials should be used when tobacco is waist high through bloom stage.

Applications of nitrogen and potash materials to replace elements lost through leaching should be made as soon as possible after heavy rains. Waiting until deficient symptoms develop before applying supplemental fertilizer is not recommended.

## **HIGH ANALYSIS FERTILIZERS**

The analysis of a fertilizer gives the percent of the different nutrients in the material or mixture.

Two fertilizer grade ratios have been available for use on tobacco in Virginia--1:3:3 (3-9-9)

and 1:2:3 (4-8-12, 5-10-15, 6-12-18, and 8-16-24). When used at comparable rates, the 1:3:3 ratio will supply more phosphorus, but, since this extra phosphorus usually is not needed, there is seldom justification for using it over the 1:2:3 ratio mixtures.

The cost per unit of nutrient in a high-analysis fertilizer is generally less than in lower-analysis grades. It is also less expensive for growers to handle the higher-analysis grades since they are used at lower rates.

## **FERTILIZER APPLICATION**

In many instances, direct contact of the roots of newly set plants with fertilizer results either in the death of plants or a retardation in early growth. The placement of fertilizer in 2 bands 8-10" apart and slightly deeper than the root crowns, and transplanting between these bands, will help reduce fertilizer injury. Since it is difficult to set the transplants between the bands when the fertilization and transplanting operations are done separately, a combination fertilizer distributor-transplanter is recommended. If band placement equipment is not available, place the fertilizer so that it will be 3-5" below the root crown.