Tobacco-grade fertilizers are available without P and can be custom-blended to supply the N and K₂O recommended on the soil report. Select a mixed fertilizer grade that will supply nitrogen at a rate of 40 lb/acre, all the recommended P₂O₅ and up to 120 lb/acre of K₂O at planting or within 10 days after setting. You can apply additional nitrogen and/or potash later as a sidedressing.

**Phosphate (P₂O₅) and Potash (K₂O) for Burley Tobacco**

Soils in the burley tobacco region have high levels of phosphorus and potassium. These nutrients build-up when they are applied on a continual basis at rates that exceed soil test recommendations.

In 35 to 40% of the areas where burley is grown, a P₂O₅ or K₂O rate of 40 to 50 lb/acre is sufficient. This low rate reduces fertilizer costs as well as the potential for salt injury.

P₂O₅ and K₂O recommendations are specific for the soil tested. Select a mixed fertilizer that best supplies the recommended rates of P₂O₅ and K₂O. If an appropriate mixed grade is unavailable, use single-grade materials. Ammonium nitrate (33.5% N), triple superphosphate (46% P₂O₅) and sulfate of potash (50% K₂O) are acceptable.

**Tissue Testing to Ensure Quality & Yield**

Tissue testing should be an integral part of tobacco production. During the growing season, it can help identify nutrient deficiencies. At the end of the season, it can be used successfully to determine ripeness and facilitate decisions on timing of flue-cured tobacco harvest.

**Magnesium (Mg) & Sulfur (S)**

Magnesium deficiency is typically seen on light-colored, sandy soils, often in seasons of high rainfall. Due to this fact, this condition is also known as "sand drown." Symptoms are seen as yellowing between veins on the lower leaves (interveinal chlorosis) that may progress midway up the stalk. The yellowing often begins at the tip or along leaf margins, progressing to the leaf's base and center. Tissue may appear white in extreme cases.

If there is a 25 in the Mg column on the soil report, then magnesium levels are low. If lime is needed, apply dolomitic lime; it will supply 120 lb
reduce the nitrogen rate by 30 lb/acre for each ton of poultry litter applied; or
• reduce the nitrogen rate by 10 to 15 lb/acre for each ton of cattle manure applied.

Growers should certainly evaluate nitrogen sources based on handling and cost per pound. Liquid nitrogen products such as 24-S or 30% UAN solutions are less expensive. University tests with these fertilizers have shown no adverse effects on yield or quality when they are applied correctly. These materials should be knifed in or covered to prevent volatilization potential. Accurate calibration is especially important since these products or mixes are highly concentrated.

Nitrogen (N) for Burley Tobacco
NCDA&CS soil reports recommend a nitrogen rate of 150 to 200 lb/acre based on research and on-farm tests. Soil type and yield determine the rate. The lower rate is appropriate on heavy-textured soils, particularly on sites where yield has never exceeded 2500 lb/acre.

Other factors to consider include:
• Reduced nitrogen rate for poor subsoil. If the depth to subsoil is less than 5 inches, apply 50 lb/acre; and for each additional inch beyond 5 inches, apply 10 lb/acre until a maximum of 80 lb/acre is reached.
• Reduce nitrogen rate when planting tobacco behind legumes or after recent application of farm manures.

Phosphate (P₂O₅) and Potash (K₂O)
NCDA&CS soil reports recommend a nitrogen rate of 150 to 200 lb/acre based on research and on-farm tests. Soil type determines the actual rate used. The lower rate is appropriate on heavy-textured soils, particularly on sites where yields have never exceeded 2500 lb/acre.

Never exceed the higher rate on light-textured soils. Too much nitrogen causes ripening problems and reduces quality. Because of potential nitrogen problems, reduce the nitrogen rate 15 to 20 lb/acre following legumes, 30 lb/acre for each ton of poultry manure applied and 10 to 15 lb/acre for each ton of cattle manure applied.

Phosphate (P₂O₅) and Potash (K₂O) for Flue-Cured Tobacco
A good way to reduce expenses and off-site movement of phosphorus fertilizer is to apply less. About 85% of tobacco soils tested have a high to very high phosphorus index (P-I >50). On-farm tests show no benefit in yield or quality from routine application of phosphorus fertilizer to such soils. Only 15 lb of P₂O₅ is removed from the soil for each 2,500 lb of leaf harvested.