



revised  
October 2009

## Agronomic Services for Grape Production

N.C. Dept. of Agriculture & Consumer Services Agronomic Division  
Physical Address: 4300 Reedy Creek Rd, Raleigh, NC 27607-6465  
Mailing Address: 1040 Mail Service Center, Raleigh, NC 27699-1040  
Phone: (919) 733-2655  
Web site: [www.ncagr.gov/agronomi/](http://www.ncagr.gov/agronomi/)

***Grape production in North Carolina has had its ups and downs. After centuries of killing frosts, summer droughts and fluctuating legal status, grape production is on the rise again. This time growers have more things working in their favor—including the agronomic services available through the N.C. Department of Agriculture and Consumer Services. These include soil testing, plant tissue analysis and field services.***



### Soil Testing

Grapes, unlike most crops, do not require much fertilizer. In fact, vineyards are more likely to be harmed by too much fertilizer than by too little. However, soil testing is still important, especially before a vineyard is established and as it matures.

Preplant soil tests can indicate whether significant adjustments in soil pH are necessary. Soil pH affects the availability of critical plant nutrients such as calcium, magnesium and potassium. As vineyards mature, a regular soil sampling program can help growers recognize when adjustments in soil pH or nutrients are needed.

### Plant Tissue Analysis

Unlike soil tests, tissue tests measure the amounts of nutrients a crop is actually using, including nitrogen. Soil tests measure nutrient levels in the soil and, in most cases, do not measure nitrogen. Since nitrogen is the primary nutrient of concern in grape production, tissue testing is an especially valuable tool.

Tissue testing is primarily a method for monitoring the nutrient content of crops so the right amount of fertilizer can be applied at the appropriate time. Improper fertilization can have negative effects on vine vigor, cold hardiness, fruit set and fruit quality. With a crop like grapes, costly guess work is not an option.

The procedure for collecting tissue samples depends on whether the crop is a muscadine grape or a bunch grape. Follow the instructions below when monitoring crop nutrient status. When using tissue analysis as a diagnostic tool, collect samples whenever you notice the problem.

**Sampling procedure and timing for muscadine grapes.** In eastern North Carolina, samples collected in June or early July will generally give the best results. Collect leaf blades located opposite fruit clusters. ***For muscadine tissue samples, submit only leaf blades.***

**Sampling procedure and timing for bunch (vinifera) grapes.** Collect samples from bloom to veraison (when grapes begin to soften and turn color). Collect only petioles positioned opposite fruit clusters. ***For vinifera tissue samples, submit only petioles.***

**Sampling instructions that apply to all grapes.** Collect separate samples for each variety. If some areas have been treated differently or seem to be growing differently, it may be appropriate to collect separate samples from those areas as well. A good sample consists of 25 to 60 leaf blades or petioles, depending on the type of grape. These should come from the most recently mature leaves (MRMLs), which are usually located opposite the fruit clusters (five to seven leaves from the shoot tip). Do not collect more than one or two MRMLs per vine.

**Submitting tissue samples.** Fill out an information form for each sample. Be sure to indicate whether the crop is a muscadine or bunch grape. Include the name of the variety being grown. Accurate recommendations depend on these details.

When submitting samples, be sure to include the completed sample information form(s) and the appropriate laboratory processing fee: for N.C. residents, \$5 per sample. If you are sending samples via the U.S. Postal Service, use the mailing address on the front of this handout; if you are using FedEx or UPS, use the physical address.

The NCDA&CS laboratory analyzes samples within two days of their arrival. Prompt service makes it possible for growers to take corrective action in a timely manner. Completed reports are posted on the Division's Web site [www.ncagr.gov/agronomi](http://www.ncagr.gov/agronomi), and a copy is mailed to the grower.

## **Field Services**

The NCDA&CS Agronomic Division has field representatives available throughout the state who can provide advice on crop nutrient management issues. For help in learning how to take and submit samples or to interpret report recommendations, visit the Division's Web site or contact your local NCDA&CS regional agronomist (visit [www.ncagr.gov/agronomi/rahome.htm](http://www.ncagr.gov/agronomi/rahome.htm) for contact information).

*Thank you for using agronomic services to manage nutrients and safeguard environmental quality.  
— Steve Troxler, Commissioner of Agriculture*