Walls, F.R., Jr.; Reich, R.C.; Messick, J.K.; Dycus, D.; Hight, P.; Johnson, K.; Morris, R.; Watson, R.; Yarborough, T.K.; Plant tissue analysis—an aid to flue-cured tobacco (*Nicotiana tabacum*) quality. Paper presented at 41st Tobacco Workers' Conference, 2004. NCDA&CS Agronomic Division, 1040 Mail Service Center, Raleigh, NC 27699-1040 USA. Telephone: 919-733-2655. Fax: 919-733-2837. E-mail: Bobby.Walls@ncmail.net.

Flue-cured leaf quality depends largely on nitrogen content at harvest time. Plant tissue analysis can be used to monitor leaf nitrogen content and aid in determining when leaves are ripe. The North Carolina Department of Agriculture and Consumer Services' (NCDA&CS) Agronomic Division developed sufficiency ranges for ripe flue-cured leaf by stalk positions during the mid-1980s. These ranges have been published in Southern Cooperative Series Bulletin #394. During 2003 growing season, NCDA&CS evaluated leaves from 13 locations across North Carolina's flue-cured production area to acquaint growers and tobacco workers with the services for aiding in determination of ripeness and gather additional data on newer varieties. Observations were made on 6 varieties. Generally, 70 to 80 lbs nitrogen /acre were applied at most sites. Results confirm plant tissue analysis sufficiency ranges as indicated by grades assigned to the cured leaf. Further, plant tissue analysis provided data on nitrogen content to aid in scheduling harvest to achieve maximum ripeness. The use of plant tissue analysis can help provide quality cured leaf. Harvesting tobacco based on plant tissue analysis can be used my growers to aid in the overall management of their crop to achieve mature ripe tobacco. (Reprinted with permission)

Key terms: nitrogen, ripeness, plant tissue