

NC STATE UNIVERSITY
College of Natural Resources
Forestry Educational Outreach Program
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From Brown to Green: Practical Applications of Waste (By-products) To Forest Stands

*Environmental and Biological Aspects of
Applying Agricultural and Municipal
By-Products to Forest Stands*



This workshop will:

- Review the evolution of by-product application to forests
- Analyze the unique characteristics of varied waste streams
- Discuss the forest's ability to utilize and benefit from application
- Stress water quality protection standards and BMPs related to waste application
- Highlight extensive and varied science related to by-product application
- Take a practical look at systems installation and forest management associated with a waste application site

May 29 -30, 2002
Holiday Inn - Crabtree
Raleigh, North Carolina

Sponsored by
Cooperative Extension Service
Forestry Educational Outreach Program
CSREES US EPA
NC State University College of Natural Resources

About the Workshop

Large numbers of agricultural animal livestock and poultry, as well as an increasing human population, create a tremendous amount of waste. Historically, most waste is treated and then applied to pastures, cropland or dedicated forage production acres. However, with the ever-increasing volume of waste by-product being produced, other environmentally friendly alternatives are being explored. The use of forests to receive, renovate and sequester by-products is rapidly growing, as is the body of science related to this practice.

Many forests are nutrient poor. Science is showing that by-products can be safely applied to forests. Extreme care must be taken to protect surface and groundwater and to be certain that application rates do not exceed silvicultural requirements of the tree crop. Forest growth, vigor and health can be improved via by-product application.

Registration and Fees

The registration fee is \$135. This includes instruction, course materials, refreshment breaks, and lunches.

Registration deadline is May 22nd. *Cancellations made by May 22 will receive a refund less a \$20 service charge.*

Workshop Location and Lodging

The workshop will take place at The Holiday Inn - Crabtree in Raleigh, NC. A map to the hotel will be included with your registration confirmation letter. Rooms have been blocked at The Holiday Inn, 919-782-8600, under "Waste Workshop" until May 14. You must make your own reservation.

Lodging is not included in the registration fee.

Accreditations - CFEs and PDHs

This workshop will offer Category 1 CFE credits authorized by the Society of American Foresters, and Professional Development Hours for Engineers.

For More Information on this program or others offered by the Forestry Educational Outreach Program, contact Susan Moore at 919-515-3184 or susan_moore@ncsu.edu or visit our web page at www.ncsu.edu/feop.

From Brown to Green: Practical Applications of Waste (By-products) To Forest Stands

Workshop Outline

Wednesday, May 29, 2002 - 8:00 a.m. Registration

Keynote Address: Moving the Perception from "Waste" to "Useful By-Product": The History and Evolution of the Use of By-Products to Enhance Forests - Dr. Larry Morris
- EPA Perspectives on the Use of By-Products in Forests

Session 1: The Potential of Forest Ecosystems to Use and Renovate By-Products

- Nutrient requirements of trees of different species, ages, and stocking levels and the response of trees to nutrient application.
- Fate of nutrients in forest ecosystems related to soil type, hydrology and other mitigating factors.
- Baseline water quality from managed forests; BMPs required to sustain high quality water on by-product application sites.

Session 2: Chemical, Biological and Legal Characterization of By-Products - Expert Panel Discussion

- Poultry, Swine, and Cattle Waste
- Municipal Waste
- Questions and Answers - adjourn 5:00 p.m.

Thursday, May 30, 2002 - 8:00 a.m.

Session 3: Research Results or Current Projects Related to By-Product Application

- The impact of by-product application on wood quality
- Use of municipal bio-solids and wood fly-ash to lower acidity of Croatan muck soils prior to tree planting
- The application of livestock waste to hardwood forests
- The application of municipal waste to managed forests
- The use of level spreader technology in by-product application
- Growth enhancement of hardwood and softwood tree seedlings with the use of mature composts in substandard soil
- The response of longleaf pine to poultry litter application

Session 4: Designing and Installing a Forest Waste Application System

- Equipment selection, calibration and installation of a by-product application system
- Making it all work; the realities of managing a forest within a by-products application system
- Questions and Answers - adjourn 5:15 p.m.

Instructors - A Who's Who List of Soil, Water, By-Product and Forestry Experts!

Dr. Larry Morris, Professor of Forestry, University of Georgia

Mr. Rick Hamilton, Forestry Extension Specialist, NC State University

Mr. Bob Bastian, Senior Research Scientist, US EPA, Washington, DC

Mr. Bill Hubbard, Southern Regional Extension Forester, Univ. of Georgia

Dr. Dan Kelting, Professor of Forest Nutrition, NC State University

Dr. Chuck Davey, Professor Emeritus of Soil Science, NC State University

Dr. Jim Gregory, Professor of Forest Hydrology, NC State University

Dr. Dave Dickens, Professor of Forestry, University of Georgia

Dr. Bob Rubin, Professor Bio and Ag Engineering, NC State University

Dr. Dennis Hazel, Woodlot R&D Program, NC State University

Dr. Rosalie Green, US EPA Office of Bio-Solids, Washington, DC

Dr. Carlyle Franklin, Professor of Forestry, NC State University

Dr. Doug Frederick, Professor of Forestry, NC State University

Mr. Scott Frederick, By-Products Consultant, GreenVest, Raleigh, NC

Mr. Allen Plaster, President, Comprehensive Forestry Services, New Bern, NC

Registration Form

From Brown to Green

Registration Deadline is May 22nd.

Name _____
Organization _____
Address _____
City _____ State _____ Zip _____
Daytime Phone _____
Fax _____
E-Mail _____
Special meal or accommodation required _____

Registration Fee \$135

Method of Payment

Check _____ make payable to NC State University
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