

Using Compost Tea to Enhance Growth of Pasture for Livestock Grazing

Final Report for FS03-169

Project Type: Farmer/Rancher

Funds awarded in 2003: \$8,784.00

Projected End Date: 12/31/2005

Region: Southern

State: Virginia

Principal Investigator:

[George Nolting](#)

Project Information

Abstract:

Bracketts Farm is a 500-acre estate in the central Virginia Piedmont. The farm is part of the Green Springs National Historic Landmark District, a roughly 14,000-acre tract in western Louisa County comprised of agricultural holdings and period structures from the years surrounding the American revolution. The farm is operated as a 501(c)(3) charitable foundation; its mission is the preservation of a significant historic tradition, and the encouragement of a contemporary culture based upon strong community, and stewardship of the soil.

The farm resides upon land that is 80% pasture, consisting primarily of fescue, orchard grass and various clovers; its soils can be described as deep to moderately deep, well-drained to somewhat poorly drained, over a sub-soil that is dominantly clay or clay loam. These soils, generally characterized by low surface run-off and high shrink-swell potential, are somewhat unique in the Virginia Piedmont.

Bracketts has a fall-calving beef herd that is rotationally-grazed through some 68 paddocks. In 1996, beginning with a herd that was predominantly black angus, with some hereford crosses, the farm initiated an effort-- still in transition-- to develop a grass-finished program. Tarentaise cattle were introduced for better grass utilization, as well as for their good maternal characteristics. By 2003 we were running two separate rotations, one serviced by pure-bred Angus bulls, the other by Tarentaise bulls. These rotations varied in size from 55 to 70 brood cows. By local standards we currently are operating somewhat below the conventional stocking rate for available pasture.

Also beginning in 1996 Bracketts began a gradual transition toward methods of nutrient management involving compost and compost teas. Appropriate pasture management can enhance the nutrient cycle, increase productivity and reduce costs. Supplementation of compost teas, based on soil tests and leaf tissue analysis, balances the soil's mineral composition, resulting overall in better plant and animal growth and increased soil health. Nitrogen is often lacking in pasture systems since forage requirements for this nutrient are high. Productive pasture management practices enhance the fixation and conservation of nitrogen while minimizing the

potential for nitrogen losses. Plants use nitrogen for the formation of proteins and genetic material. Grazing animals that consume these plants use some of the nitrogen for their own growth and reproduction; the remainder is returned to the earth as urine or manure. Practices that favor effective nitrogen use and cycling in pastures are a primary focus of our comprehensive nutrient management plan. These same practices suggest that farming communities-- with minor exception-- naturally contain the resources necessary for maintaining healthy soil. An effort to analyze the cost-benefits of tea application will follow later.

The object of this grant was to put in place a dedicated program utilizing compost teas as a potential component for optimal pasture fertilization. We sought to monitor the full impact of these methods on our effectiveness in pasturing cattle, as well as their potential advantages in helping land retain the resilience to better survive the pressures of environmental stress.

Results were not expected to be conclusive, yet in the limited comparisons we were able to obtain, there was measurable difference between control and study plot measures of both crude protein as well as total digestible nutrient. This suggests that more involved research could establish clear benefits for these practices.

Research

Research results and discussion:

Certified organic beef producers who market their beef directly to consumers try to distinguish their product from that in supermarkets by pointing out that their animals are raised without hormones and antibiotics. They are also raised on pastures fertilized with certified amendments.

This producer looked at the use compost tea to fertilize his pastures. He made and applied his own compost tea from composted cow manure, leaf compost, worm castings and rock powders. He established four one-half acre test plots and four one-half acre control plots.

Results were not conclusive, yet in the limited comparisons he was able to obtain, there was a measurable difference between control and study plot measures of both crude protein as well as total digestible nutrient. This suggests that more involved research is need to determine if the results are indeed significant. But, the producer is very encouraged by his results. He will also try to analyze the cost-benefits of tea application.

Participation Summary

Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture or SARE.



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