

# Soil Health for Virginia

## Stockpiling Forages and Grazing Management



Some of the healthiest agricultural soil in North America naturally developed under perennial native grasslands in the Great Plains between the Rocky Mountains and the Mississippi River. The tall grass prairie, often considered the most productive, consists of a diverse mixture of tall grasses and forbs with very extensive root systems penetrating deep into the soil.

Migrating herds of bison, elk, and other native wildlife positively contributed to this healthy soil system over the centuries. This ecosystem developed under conditions that naturally support the four main principles of soil health:

1. Keep soil covered
2. Minimize soil disturbance
3. Maximize living roots and
4. Energize with diversity

Though Virginia is in the mid-Atlantic region of the eastern United States, our soils, annual precipitation, and the length of the growing season offer tremendous potential for healthy and productive grassland systems. As with any agricultural system, the overall ability of the soil to perform and the system to function at its highest capacity depends largely upon management.

In perennial pasture systems, fall stockpiling of cool season grasses (typically tall fescue) is a grazing management strategy gaining popularity among livestock producers interested in strip-grazing throughout the winter when grass regrowth is negligible. Field preparation begins in August by grazing the proposed stockpiling area to remove summer growth and unpalatable forage.

Then, all livestock are removed from that section of pasture, nitrogen is typically applied and the forage

is allowed to grow uninhibited by grazing animals throughout the entire fall season (usually 90 days). Near the end of November or early December, the livestock are brought back to this section of pasture and managed by strip-grazing.



Strip-grazing uses temporary electric fencing to provide a small strip of stockpiled forage every one to three days to maximize forage utilization and increase the

number of grazing days from the stockpiled area. Cattle quickly adjust to strip-grazing management using poly-wire.

Now consider how this combined forage and grazing management strategy can positively impact soil health. Stockpiling and strip-grazing tall fescue utilizes all four principles of soil health. Removing the livestock, providing nitrogen and fertilizer needs based on soil test results, and allowing the forage to grow and stockpile for up to 90 days during the growing season impacts all aspects of the system.



This stockpiling protocol provides the plants everything they need to quickly go beyond maintenance requirements and maximize growth potential, root

expansion, and stored carbohydrate reserves. It also provides maximum biomass accumulation to keep the soil covered while minimizing soil disturbances such as erosion during this period.

Extended rest during the fall growing season allows root biomass expansion and contributes to increased microbial activity in the rhizosphere, the area surrounding the roots in the soil. The combined effects of rest, plant growth and root expansion allows the sod to thicken, protecting the soil from disturbance and contributing to increased health and vigor of the pasture plants the following year.

Beginning in December, the strip-grazing aspect of management allows the controlled and efficient harvest of forage, which maximizes the economic benefit for the farmer while regulating surface cover for soil protection throughout the winter season. The strip-grazing technique slowly and systematically harvests the forage from one end of the field to the other, maintaining protective ground cover while preventing nutrient concentrations and bare soil commonly associated with hay rings or feed sites.



Strip-grazing takes nutrient distribution to a higher level and maximizes manure and urine distribution across the pasture as shown in the photo at left. Greater nutrient distribution

feeds more plants and microbes, contributing to better nutrient cycling and increased diversity both above and below the soil surface.

Frost seeding clover into the recently strip grazed areas is another opportunity to increase plant diversity in this system and possibly eliminating

the need for additional nitrogen fertilizer once the legume content of the stand is about 30 percent.



Though the soil beneath our Virginia pastures is quite different than the soils under the tall grass prairies of the Great Plains, the common sense stockpiling and strip-grazing

management strategy has proven to improve soil health and enhance agronomic output while boosting the environmental and economic performance of the winter pasture system.

To learn more about soil health in Virginia, visit [www.va.nrcs.usda.gov](http://www.va.nrcs.usda.gov). To learn more about fall stockpiling and strip-grazing throughout the winter ask your local conservationist to notify you about winter grazing demonstrations in your region of the state.



Visit <http://offices.sc.egov.usda.gov/locator/app> to help locate the USDA Service Center nearest you.

