

'Forage Suitability' Something That Can Be Plotted, Used By Producers

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Lancaster Farming Staff
CAMP HILL (Cumberland Co.)
 — Best results from those who want to begin grazing begin with planning. And producers who want to invest in a grazing system for their farm need to look at the details and come up with an overall plan that fits their soil conditions, livestock, climate, and other items specific to their operation.

Producers need to invest in an integrated forage livestock system, not just a grass grazing system, noted Edward B. Rayburn, extension forage agronomist with West Virginia University in Morgantown.

Rayburn spoke to more than 100 producers and grazing representatives recently at the Grazing In the Northeast Workshop at the Radisson Penn Harris Hotel and Convention Center in Camp Hill.

Graziers need to remember they are "harvesting sunlight and converting it to cash," Rayburn said. There is a science and an art to forage and livestock system management. "Managers need to understand the biology and ecology of the systems they are working with."

Until now, there has been little

data about what types of soil conditions favor certain types of forage mixtures. However, work being undertaken by the USDA's Natural Resources Conservation Service (NRCS) could change all that.

James B. Cropper, forage management specialist with the USDA NRCS at the Pasture Systems and Watershed Management Research Laboratory in University Park, spoke about forage suitability at the conference.

What kind of forages would be suitable for grazing? A new assessment procedure has been proposed by the University of Wisconsin Cooperative Extension and the NRCS Grazing Lands Technology Institute, according to Cropper.

The procedure rates the condition of a pasture site. The pasture condition rating worksheet is in early stages of development. Based on a Wisconsin extension publication, it rates the condition of a pasture based on the following characteristics: plant desirability, density, vigor, percent legume in the stand, uniformity of use, presence of sheet and rill erosion, stream bank and gully erosion, concentrated livestock areas, soil compaction, and site resilience.



Producers need to invest in an integrated forage livestock system, not just a grass grazing system, noted Edward B. Rayburn, extension forage agronomist with West Virginia University in Morgantown, far left. In center is James Cropper, USDA NRCS, and at right is Floyd P. Horn, acting deputy undersecretary, USDA/Research, Education, and Economics.

Plant vigor causative effects are soil fertility, soil pH, severity of livestock use, and forage species adaptation.

Another way to assess pastures is through forage suitability group (FSG) formulation and documentation in the NRCS "National Range and Pasture Handbook."

Not all areas have been documented at this time. However, one sample shown at the conference details an FSG for the eastern Allegheny Plateau and mountains. The FSG sheet provides detail for

suitable forage crops based on deep, channery, well-drained, strongly acid, and moderately steep upland soils, consisting of Hartleton channery silt loam, Hazelton channery loam, and Leck Kill channery silt loam. Details on the FSG for two examples, one in Coudersport and Johnstown, are provided in this issue.

Provided are adapted forage species for the soil types and climatic conditions of those areas.

These tools, according to Cropper of NRCS, can help producers

select species for forage production, what to use to get production, and specific management practices to sustain production.

In a short time, according to Cropper, "new tools will be ready to do an even greater job" of proper resource management, he noted.

According to Rayburn of West Virginia University, another vital link to improved forage systems is getting the right animal genetics. "Animal genetics and herd health go a long way to make any grazing management program look good," Rayburn said.

USDA, NRCS

CPA-PA-00

FORAGE SUITABILITY GROUP

Deep, channery, well drained, strongly acid, moderately steep upland soils

FSG No.: G-127NY401PA

Major Land Resource Area: N127 - Eastern Allegheny Plateau and Mountains

Climate: Average annual precipitation ranges from 40 to 56 inches. Snowfall ranges from 35 inches in the south to 90 inches in the north. Snow cover at depths greater than one inch average a high of 90 days at higher elevations in the north to a low of 20 at lower elevations in the south. Growing season precipitation ranges between 22 and 32 inches. Average monthly precipitation is rather evenly distributed during the year ranging from 2.7 inches to 4.5 inches. Precipitation events of more than 0.1 inch occur about every 3 to 4 days on average. Average annual minimum temperature ranges from 0 degree F to -20 degrees F. Average July temperature ranges from 68 degrees F. to 72 degrees F. Average freeze-free period is 100 days to 160 days. This is greatly influenced by elevational position on the mountains or in the valleys. It is less affected by latitude although it trends higher to the south once the Maryland - West Virginia border is reached. Growing degree days, base 40 degrees F., is 3500 to 5000 annually. Growing degree days, base 50 degrees F., for the 30 week period from March 1 to September 26 is 2000 to 3000. Relative humidity is high throughout the growing season averaging about 55 percent at mid-afternoon increasing during the night to 80 percent at dawn. Potential evapotranspiration ranges from 22 to 27 inches. See water budgets for Coudersport and Johnstown, PA.

Soil Suitability Group Description:

The soils in this group are moderately steep, deep, well drained soils on hilltops and hillsides. Although considered deep, the soils in this group are underlain by sandstone, siltstone, or shale bedrock at depths of 46 to 54 inches. The topsoil is a channery loam to silt loam having 15 percent or more thin, flat rock fragments as much as 6 inches long. Available water holding capacity is moderate ranging from 3.7 to 5.4 inches within maximum rooting depth. Topsoil and subsoil pH's of unlimed soils range from 3.6 to 6.0. Cation exchange capacity in the topsoil ranges from 12 to 20. Organic matter content of the topsoil ranges from 1 to 4 percent. Frost heave potential on the soils in this group is moderate. Seasonal high water table is at depths greater than 6 feet. Deeply incised water courses are often present on the hillslopes occupied by this soil group. These water courses run the length of the slope and parallel to each other. They may be intermittent or spring-fed.

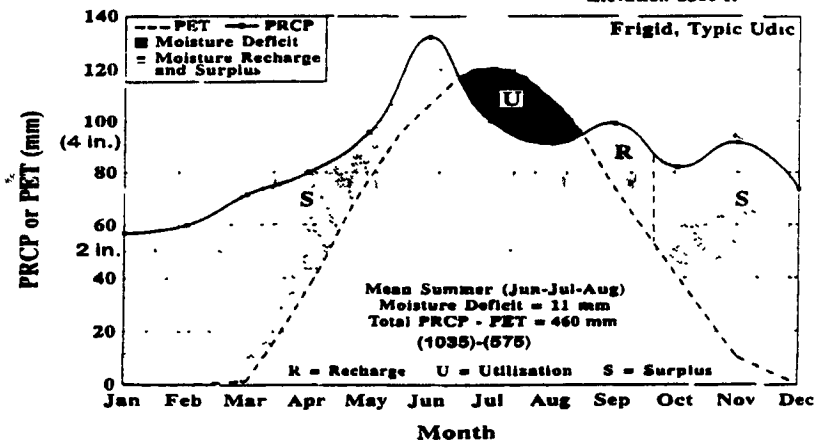
Soil Map Unit List:

- HaD Hartleton channery silt loam, 15 to 25 percent slopes
- HoD Hazelton channery loam, 15 to 25 percent slopes
- LeD Leck Kill channery silt loam, 15 to 25 percent slopes

FORAGE SUITABILITY GROUP

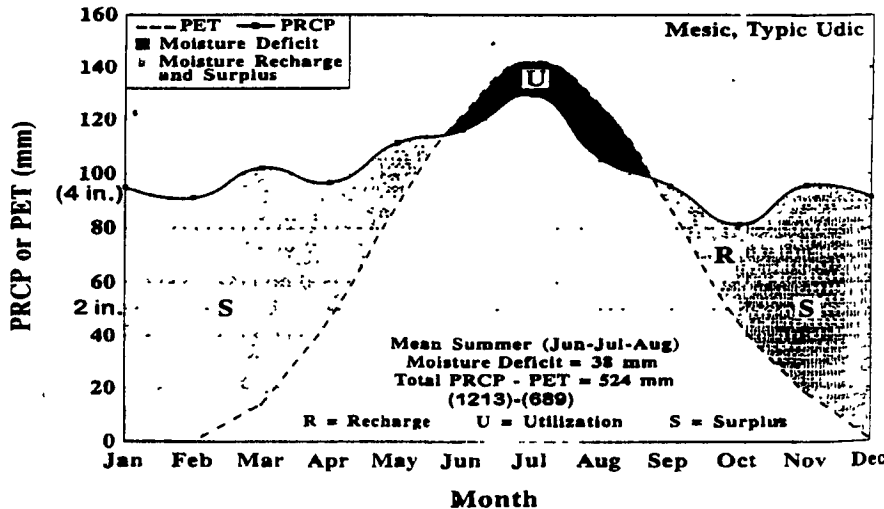
Deep, channery, well drained, strongly acid, moderately steep upland soils

Coudersport 4 NW, PA
 Station 1806
 Elevation 2300 ft



Moisture balance for Coudersport 4 NW, Pennsylvania, based upon a period of 1961-1990. PET calculated by Newhall Simulation Model (Van Wambeke et al., 1992)

Johnstown, PA
 Station 4385
 Elevation 1214 ft



Moisture balance for Johnstown, Pennsylvania, based upon a period of 1961-1990. PET calculated by Newhall Simulation Model (Van Wambeke et al., 1992)

Soil water balance at two representative altitudes. Soil shown has an 8 inch AWC, double of the soil group. Soil Group being described has a dry upper rooting zone for 15 to 30 days each year.

One sample shown at the conference details an FSG for the eastern Allegheny Plateau and mountains. Here are the details on the FSG for two examples, one in Coudersport and Johnstown.

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Pennsylvania Announces New RC&D Area

HARRISBURG (Dauphin Co.)
 — The Southeastern Pennsylvania Resource Conservation and Development (RC&D) Area has been authorized and funded by Secretary of Agriculture Dan Glickman to provide economic and resource assistance to Berks, Bucks, Chester, Delaware, Lehigh, Montgom-

ery, and Northampton counties as of March 17, according to Janet Oertly, state conservationist, USDA Natural Resources Conservation Service.

Southeastern Pennsylvania RC&D began providing assistance to communities within its area prior to authorization with

projects such as the Quakertown Swamp in Bucks County. The wetland, one of the largest blue heron rookeries in the state, has been designated as one of the two most important bird areas in the county by the National Audubon Society.

RC&Ds are grass-roots efforts

of local citizens to provide leadership for improving the economic base of the community through the wise use of available natural and human resources. RC&D's work with small businesses to find and expand markets, research uses and value, adding to local products and developments of many

other activities.

For information on the Southeastern Pennsylvania RC&D, contact council chairman William VanIngen at (215) 675-3198. For information on other RC&Ds throughout the state, contact Terry Mitchell, assistant state conservationist, NRCS, at (717) 237-2205.