The how's, why's of grazing explained

Solberg presents at MDI Winter Dairy Series workshop

By Ruth Klossner
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NEW PRAGUE, Minn. — Although the audience may have been small, interest was high when Livestock and Grazing Specialist Kent Solberg spoke during the Minnesota Dairy Initiative Winter Dairy Series workshop March 13 in New Prague, Minn. Prospective and current grazers listened intently as Solberg, of Sustainable Farming Operations, went through the why’s and how’s of successful grazing.

Solberg said grazing has many upsides. This list includes being the cheapest feed for animals, creating less manure to haul, reducing wear and tear on equipment, having less stored feed to put up, meeting organic standards and having good animal health.

The greatest advantage Solberg stressed is soil health, which relates to soil function — the ability to capture, store and cycle water. It is dependent on good soil aggregate structure, which is built by microbial activity. Soil health is reflected in the ability to cycle nutrients — requiring active and balanced microbial populations, allowing the microbes to feed the plants. Soil microbial activity mediates 85 to 90 percent of soil function.

Solberg stressed five principles to promote soil health — keep soil covered, minimize soil disturbances, increase crop diversity, keep living roots in the soil and integrate livestock.

Using photos taken at his own and other operations, Solberg emphasized the power of diversity, using mixtures with at least one variety from each of four major crop types — warm season grass (corn, millet, sorghum, Sudan grass and teff), warm season broad-leaves (sunflower, soybean, cowpea and buckwheat), cool season grass (oats, wheat, annual ryegrass and cereal rye) and cool season broad-leaves (clovers, turnips, field pea and radish vetches). Diversity provides good grazing even during dry seasons.

Studies have shown that integrating livestock makes a huge difference in building soil health.

Solberg pointed out the difference in animals grazing versus mowing. “Grazing is the mechanical act of harvesting. There are enzymes in the saliva, there’s stirring rather than shearing, like mowing. Plus there’s the manure, and milk foam dripping off from nursing calves. Even shed animal hair feeds soil microbes,” he said.

Grazing can be a low-cost option for raising dairy heifers, reducing feed costs by 50 cents per day, per heifer versus lot feeding.

The percentage of plants grazed is very important to plant roots and regrowth. With under 50 percent usage, the roots do not stop growing; with 70 percent of the plant removed, 50 percent of the roots stop growing for 17 days; and at 90 percent of the plant removed, 100 percent of the roots stop growing for 17 days.

“You may think that, if you’re not grazing it down, you’re wasting it, but that’s wrong. You have to rebuild the root system,” Solberg said.

Grazing duration is critical to success. Shorter time spans in individual paddocks produce better results. Re-grazing too soon damages plants. More frequent moves translate to greater forage response. The use of 30 to 50 percent of available forage is recommended, which makes sense since most of the nutrients are in the top one-third of the plant.

Grazing density — the pounds of animals grazed per acre — is also crucial. High density triggers a mob mentality and results in less selectivity in grazing and higher trampling. Trampling feeds microbes in the soil.

A density of 50,000 to 200,000 pounds per acre is best for animal performance when used with 30 to 50 percent use. On the other hand, a density of 200,000 to 1 million pounds per acre is best for improving soil health at 25 to 30 percent use. Solberg suggested mixing it up throughout the season and from year-to-year for best results.

Rest durations should be based on weather, intensity of grazing, health and size of plant root system, the time of year, and plant composition of the pasture, not on the calendar or a set schedule.

The best tool for managing density, use, rest and recovery is portable energized fencing.

“You’ll usually have bigger paddocks in August than June,” Solberg said.

He next turned his attention to Brix, the dissolved plant solids that include sugars (sucrose and fructans), minerals, amino acids, proteins, lipids and pectins. High forage Brix is desirable as it increases animal gains as well as milk components. High Brix forages are more drought resistant, freeze tolerant, and more resistant to plant disease and pests.

Higher Brix is the result of increasing SOM (carbon) and soil microbial populations. Brix can be increased by improving soil health. That can be accelerated by using the five principles of soil health, mentioned earlier.

The stage of maturity affects both the quality and yield of forages. If grazing for energy, the sweet spot is mid to late maturity, while the sweet spot for animal efficiency is boot to early seed head.

Solberg said grazing is a learned behavior. The best time to start is with heifers since it’s difficult to jump right from the feed bunk to pasture with older animals.

He then suggested producers consider resource concerns they have for their farms — whether it’s to build crop diversity, build soil aggregates, improve the water cycle, use integrated pest management, increase soil organic matter, provide pollinator habitat, provide wildlife cover, etc. He suggested to start, producers identify a field on their farm, identify the resource concerns they have for that field and consider dual purposing forage needs for livestock in conjunction with addressing the resource concerns.

Seeding annuals as cover crops can help to address summer slumps. Annual forages help to get through slumps, with fall rye helping in April and May, oats from May through October, sorghum and corn in July and August, kale in August through December, and rye-grass in May-June and again from August through November.

Inter-seeding cover crops into cash crops, and seeding annuals to extend the grazing season are other options.

Multi-species blends are recommended as they provide feed choices through diversity, giving the best opportunities for animal performance. They don’t force animals to take everything with a 50 percent use maximizing soil health and minimizing other issues. Blends are multi-purpose, feeding livestock and soil microbes while addressing resource concerns. Blends should include a minimum of three grasses, three legumes, and three broadleaves/brassicaceae. Planting may require a starter fertilizer to get growth (30-50 pounds N).