

You can improve pasture productivity

But before you do, decide which improvements will produce the greatest return on your investment

By Sid Bosworth

When dairy producers set up intensive grazing systems, their questions usually center around two areas: pasture improvement and grazing management, such as stocking rate, number of paddocks, paddock size, watering systems and fence types.

The two go hand in hand. There's no need to spend money improving pasture productivity if animals don't use it effectively and convert it to milk. In fact, proper grazing management has as large an impact on pasture productivity as any other variable.

Nine tactics to improve pasture

Pasture improvement means different things to different people. It can be:

- Improvements to increase pasture yield for greater potential carrying capacity.

If you want to graze but think you don't have enough pastureland for your number of cows, target this area.

- Improvements to increase milk production or decrease supplemental feed through better forage quality.

- Improvements to enhance the seasonal distribution of dry matter so that cows' nutritional needs are met throughout the season.

Besides grazing management, there are two primary practices to improve pasture productivity: soil amendments to improve forage growth and introduction of new species and varieties to improve productivity, quality and seasonal distribution. Other options include controlling weeds and brush by clipping or chemicals, subsurface drainage and even irrigation.

Are these practices worth it? It depends upon your situation. But in light of today's milk prices, you'll want to get the most bang for the buck from any practice.

Here's my take on some tactics to improve native pasture:

1. Soil test. Before applying any soil amendments, soil test to determine if there's a need for lime or nutrients. You'll get the



most noticeable return on a fertilizer investment when soils are low in fertility.

2. Lime. If needed, liming to raise soil pH probably gives you the best return on your investment. At a 6 to 7 pH, plants grow better and nutrients are more readily available. Soil microbes, which are important for releasing many nutrients from organic matter, also grow best at this pH range.

3. P and K fertilization. If soil tests show a need, jump start pastures with some initial potassium (K) and phosphorus (P). Their most important function is to help maintain legumes in the stand. When P and K levels are low, grasses, which are more efficient at extracting them from soils, can beat out legumes. Once pastures are established, they generally need little supplemental P and K.

4. N fertilization. When a stand is predominately grass and has adequate soil moisture, you'll often see a growth response to nitrogen (N) fertilization when 50 pounds of actual N per acre are applied. Grasses love nitrogen; it stimulates leaf and shoot growth and often boosts crude protein levels.

N is a short-term management tool - its effect is usually immediate and doesn't last very long. If you need additional growth

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FYI

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during the season, N can be a relatively cheap way to get it. To decide whether to use N, consider three factors:

- Is there adequate moisture for grass growth? Applying N during a dry summer is usually a waste of money.

- What is the percent legume in the pasture? If a pasture is at least 30 to 40% legumes, added N will provide little or no growth response. In fact, it usually causes a decline in legumes, which may impact animal performance.

- What grass species are in your native pasture? Some of native species, such as sheep fescue, red fescue and velvetgrass, may not respond to N as well as improved species do. If these are dominant species, it may be time to renovate your pasture.

5. Overseeding legumes. They provide many benefits to a pasture system. Legumes:

- Don't need any N fertilization.
- Improve the seasonal distribution of forage dry matter by boosting summer production.
- Improve protein levels and overall digestibility of the forage.

Red and white (ladino-type) clovers are the most economical and commonly used legumes for pasture overseeding. Birdsfoot trefoil is a more persistent legume that has been successfully overseeded.

Typically, seed 2 to 4 pounds of red clover and trefoil per acre and 1 pound for ladino clover.

Whether you broadcast seed in early spring (frost seed) or use a drill, successful overseeding depends on how you suppress existing vegetation. To control grass growth, overgraze a field the previous fall to create openings in the sod for clover or trefoil emergence. This grazing abuse also sets back the sod's vigor the next spring. Overseed in early spring after the snow is gone but while the soil is still frozen. The freezing and thawing cycles help to work the seed into the soil.

Animals can help control early spring growth: Their hoof action assists late winter freezing and thawing to work the broadcast seed to a desirable depth for germination. Keep cattle on the area for a few days after overseeding and remove them before clover seedlings emerge.

After legume emergence, bring animals back in to graze as part of the normal rotational grazing scheme. To achieve a quick but moderate grazing, keep animals on an area for less than a day and remove them just before the new clover seedlings are grazed, leaving 3 to 4 inches.

Remember: Do not apply any nitrogen fer-

tilizer either the fall before or during the year of establishment. It will stimulate the grasses and discourage the developing legumes.

6. Overseeding grasses. If your pasture consists mainly of unproductive native grasses, it might be beneficial to introduce improved grass species and varieties. Frost seeding is an economical method, but it only works for quick germinating grasses such as ryegrasses or orchardgrass.

University of Wisconsin research showed that overseeding ryegrass into native pasture didn't improve pasture productivity. It did, however, replace existing grasses with the better quality ryegrass, but only in years when moisture was adequate for ryegrass growth. One warning: Ryegrass isn't as winter hardy as other cool season grasses, so persistence may be a problem.

7. Complete renovation. This is expensive; you must add soil amendments, do tillage and/or use herbicides to kill existing vegetation, and reseed. But renovation may be most beneficial long term because you can incorporate lime and nutrients and seed the most appropriate pasture mix for your site and situation.

8. Weed control. There's little economic incentive to control weeds until proper grazing management, soil fertility and pasture species are in place. Except for a few invasive species, most weeds are opportunistic, taking advantage of light or an open patch of soil. But avoiding seed production with a few timely clippings can be a prudent and inexpensive practice, particularly if the weed is a problem perennial.

9. Soil drainage. This is a long-term investment. Because drainage is so beneficial, it's worth checking on cost-share programs with Natural Resources Conservation Service (NRCS).

Set priorities. Start slowly

You can probably divide your pasture system into several management units according to soil type, slope, field history and so on. Then prioritize which practices will give you the greatest return for your money in each of these units. Some areas may only need good grazing practices with no additional inputs. Others may benefit from just a little lime or a legume frost seeding. Others may need complete renovation.

You probably won't know which improvement practice is best until you've grazed for two or three years. Only then will you be able to identify the weakest links in your production system. So start slowly. ■

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