

*Dairy Grazing***Philosophy of Pasture-Based Dairying**

**T**o some people in the dairy industry, the concept of grazing seems like a step backward. They envision a seasonal, spring-calving, 40- to 60-cow dairy operated with a management-intensive grazing (MiG) system that feeds neither grain nor hay. This vision is far from reality.

The goal of the Dairy Grazing publication series is not to persuade all producers to adopt such a management approach but to give the reader a better understanding of management-intensive grazing and the dairy producer insight into various factors that affect the profitability of a pasture-based operation. This publication provides a basis for that understanding and insight by defining a pasture-based dairy, explaining reasons to graze and discussing how pasture-based dairying can save a producer time and money.

**“Pasture-based dairy” defined**

A typical pasture-based dairy is difficult to define because producers with a variety of operations consider themselves “intensive graziers.” At one end of the spectrum is a more traditional dairy producer: This producer has moderate to high milk production (more than 18,000 pounds of milk per cow per year) and grazes winter and summer annuals but continues to use stored forages and large amounts of grain year-round to ensure maximum dry matter intake. At the other end of the spectrum is the seasonal or low-input grazer: This producer feeds zero or small amounts of grain and attempts to get all the cows’ forage from grazing, which results in lower levels of production (9,000 to 12,000 pounds of milk per cow per year). The latter type of producer reflects the system of dairying that evolved in New Zealand, where reliance on pasture was necessary because purchased concentrates were expensive relative to the milk price.

➤ The most common pasture-based dairies in Missouri produce 10,000 to 14,500 pounds of milk per cow per year. They feed small to moderate amounts of grain and supplement pasture with harvested forages when dry matter intake is depressed due to extreme heat or drought. This management system aims to keep fixed and variable costs low enough to be competitive with large confinement dairies. Herds in pasture-based operations typically consist

**Dairy grazing publication series**

This publication is one in a series about operating and managing a pasture-based dairy. Although these publications often refer to conditions in Missouri, many of the principles and concepts described may apply to operations throughout the United States. A list of the publications in this series is available online at <http://extension.missouri.edu/m168>.

of 80 to 150 cows and are usually small enough to avoid the need for hiring outside labor. However, in recent years, Missouri and other states have seen an increase in herd size, with some herd sizes reaching 500 or more. In general, each milking cow will need 1 to 1.5 acres for the grazing season, depending on the farm location and soil type. Some farms in southern Missouri have reduced the amount of acres used per cow (0.7 acres per cow), realizing the need to increase supplements when pasture forage is short. Young stock and dry cows will need additional acres in either situation.

The grazing season in Missouri begins in late March to early April and ends in mid-November to early December. Some years have allowed producers to graze as early as mid-February and as late as mid-December but primarily on winter annuals. Producers maintain forage quality throughout the grazing season by moving cows rapidly through paddocks, especially during the spring when plant growth rate is high. This type of rotation allows a 10- to 40-day rest period for the grass before it is grazed again. This type of pasture management can provide enough high-energy forage to allow less grain and harvested forages to be fed while maintaining milk production levels. The reduction in purchased feed saves a producer between \$1.50 and \$3.50 per cow per day; if milk production remains stable, the reduced input costs enhance profitability.

**Reasons to graze**

One question still remains for many producers: “Why should I graze?” Many producers who convert to pasture-based dairying are challenged by their fellow producers. After all, father and grandfather didn’t graze, and dairy technology and science have improved milk yields with the introduction of total mixed rations (TMRs) and confinement housing. So, why should producers graze their dairy cows? The answer may lie within one

word — simplicity. Jim Gerrish suggests in MU Extension publication M157, *Missouri Grazing Manual*, that “many young people have forsaken farming because they view farm life as day after day of hard, menial labor.” Similarly, many dairy producers have commented they have never taken a vacation or they wished they had not have missed so many of their children and family activities. Conventional dairy farming would certainly epitomize this view. It can involve milking cows twice a day, 365 days a year, causing dairy producers to work 10- to 14-hour days. Farming should not be a love of labor but rather a labor of love. The goal of a dairy farm should be to provide a comfortable way of life. In past years, farmers have prided themselves on how hard they work, as they should. However, many graziers pride themselves on not having to work so hard and still being profitable.

## Grazing saves time and money

In many instances, producers have converted their operations from conventional feeding and managed operations to grazing operations — maximizing use of grass while supplementing with grain and harvested forage as needed. This conversion to grazing operations has saved these producers time, labor and capital expense. It has reduced the amount of harvested feed they produce, the time they spend in feeding these products, and the labor and time spent handling animal manure.

Many opponents to pasture-based dairies suggest the time spent on a grazing operation will increase due to the time spent in gathering animals from paddocks twice each day. However, whether time spent bringing animals in to be milked will increase depends on paddock setup and distance of paddocks from the milk barn. Even if time spent gathering animals does increase, time spent doing other tasks will decrease, and the increased time spent with cows will become a sort of “quality time.” For example, producers may observe cows in heat that they may not have detected if engaged in other activities, and they may notice and treat sick cows sooner.

Another reason to graze involves manure management, which has been and will continue to be a major concern for dairy producers. Graziers who try to maximize their forage potential can reduce this concern. In many grazing systems, cattle deposit at least 70 percent of the manure and urine in the paddocks. This is achieved by reducing the time cattle spend near the milking and feeding facilities.

Producers with high throughput milk barns may only need the milk cows to be at the parlor for 1 to 1.5 hours per milking, with a goal of less than 2 hours per milking. Cattle are fed in the parlor, which reduces the necessity of a feeding floor. Data from Missouri and other states have indicated less than 15 percent of predicted urine and manure will need to be handled as the cows spend a limited time around feeding and milking areas.

The cows themselves become the nutrient-disposal system by spreading the nutrients on the pasture. This result can reduce the capital outlay for equipment, reduce the size of the nutrient-storage systems, improve nutrient distribution over the entire farm, reduce fertilizer inputs and allow producers additional time for other dairy tasks as well as for their families.

Another reason to convert to pasture-based dairying is to improve or stabilize income. This outcome is possible because management-intensive grazing maximizes the feed potential of pasture. The following quick calculations show the economic benefit of conversion: The assessment of 3.5 cents per pound of dry matter for grass suggests grain will cost the producer three to five times more than grass. Research predicts cows consume up to 3 to 3.2 percent of their body weight in forage dry matter per day when forage is well managed. This amount is in contrast to the 2 to 2.5 percent of dry matter consumption most commonly used when balancing rations. Rations balanced at 2 and 3 percent of intake showed no difference in fat-corrected milk yields. All of this results in a savings of up to \$2 to \$3 per cow per day, which supports on-farm observations of savings of \$1.50 to \$3 per cow per day. These comparisons were made within-farm by analyzing feed costs and milk production during the grazing season and during the nongrowing season. This reduction in feed costs could be and has been pivotal to increasing farm profitability.

Modern graziers are continuously evaluating new products and forages and trying to adapt technology and practices to their operations. The use of grazing wedges, pasture-planning software and other technology allows producers to predict shortfalls and be proactive rather than reactive in their management decisions. These graziers realize they have more impact on their profitability by enhancing the effectiveness of their time and labor rather than constantly worrying about volatile milk and feed prices. These characteristics and attitudes would make dairy graziers successful in most business ventures.

## Implementing grazing on a farm

Despite the benefits of grazing, it is not an easy-fix solution. It requires a dairy producer with superior management skills, especially in managing forages, to obtain adequate yields with a nutrient density that will maximize milk yield with moderate levels of grain feeding. Grazing is not for every dairy producer. Not all farms are conducive to grazing operations. Not all producers are willing or able to make the transition to grass. The use of management-intensive grazing is simply a tool, much as is the feed wagon. The only difference is the cows are doing the work.

---

This publication replaces Chapter 1, *Philosophy of Pasture-Based Dairying*, in MU Extension publication M168, *Dairy Grazing Manual*. Original authors: Stacey A. Hamilton and Ron Young, University of Missouri.

**ALSO FROM MU EXTENSION PUBLICATIONS**

- DVD12 *Management Intensive Grazing Video Series*  
G3050 *Introduction to Pasture-Based Dairy Models*  
M155 *Missouri Dairy Plan*  
M157 *Missouri Grazing Manual*  
M168 *Dairy Grazing Publication Series*

**[extension.missouri.edu](http://extension.missouri.edu) | 800-292-0969**