



Land Stewardship Project Fact Sheet #3

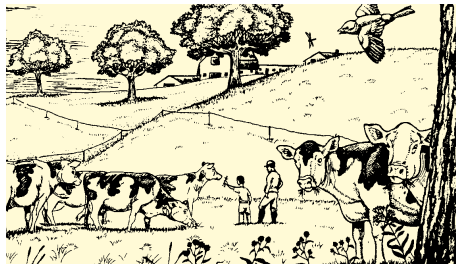
Grass-Based Beef & Dairy Production

This innovative system is economically viable & good for the environment

Since the early 1980s, an increasing amount of North American milk and beef has been produced using an innovative method called “management-intensive rotational grazing.” Called MIRG for short, this livestock product technique has proven to be a viable alternative to expensive, high-tech confinement systems.

How it's done

MIRG usually consists of breaking a pasture up into many small pens or “paddocks” using electric fencing. Cattle are moved frequently from paddock to paddock (sometimes as often as twice a day). When deciding whether to move stock, farmers use as their guide the condition of the grass. An ideal grazing schedule allows the grass to recover completely between grazings, spreads manure evenly over the land, and fulfills the animal's nutritional requirements.



How it differs

Management-intensive grazing should not be confused with conventional grazing systems. The latter system usually consists of turning livestock out into an open pasture during the growing season. Under conventional grazing, animals are allowed to roam the entire pasture, often overgrazing. This method can shorten the grazing season significantly, producing erosion and concentrating manure.

The fastest growing area of livestock production consists of putting animals in confinement. Under such a system, all of the animal's nutritional needs are provided with high energy feeds such as corn, and roughage such as corn silage and haylage, which is harvested and hauled into the confinement unit. The large amount of manure produced by these animals is collected in storage pits or lagoons in a semi-liquid form (in the case of cattle and hogs) and later applied to farm fields.

More net profit

◆ Dairy farmers who use management intensive rotational grazing in Wisconsin and New York are more profitable than their confinement counterparts, according to on-

going research being conducted at the University of Wisconsin's Center for Dairy Profitability. Because of their lower operating expenses, these grazing operations are financially outperforming the large-scale confinements, although the graziers generally produce less milk per cow and have smaller herds. During 2000 and 2001 in both states, the average grazing operation was more profitable than its confinement counterpart, reports the Center. In some cases, the difference in profitability was significant. In 2000, the net farm income of the average Wisconsin grazing operation taking part in the study was **double that of the average confinement operation analyzed.**

◆ A study conducted by the University of Minnesota's North Central Experiment Station in 1991 and 1992 found that although a herd under management-intensive rotational grazing had a milk yield that was 7 percent lower when compared to its confined counterpart, reduced production costs resulted in a **\$48 higher average net return per grazed cow.**

Works for beginning & expanding farmers

◆ Low-cost methods such as rotational grazing are not only viable on small farms. Farmers who have converted to management intensive rotational grazing **are able to milk more cows without having to increase their land and labor base**, according to research conducted by the University of Wisconsin's Program on Agricultural Technology Studies.

◆ The start-up costs for a grazier are approximately **half the initial per-cow costs associated with a confined system**, according to an analysis published in *Feedstuffs* by Bud Schwart, an agricultural economist with Texas A&M University.

More profitable than corn

◆ An on-farm study conducted from 2000 to 2002 by the University of Minnesota's West Central Minnesota Research and Outreach Center found that raising dairy heifers on a well-managed pasture cost on average 93 cents per head, per day. Raising heifers in a feedlot on average cost

\$1.32 per head, per day during the same period. This study found that raising dairy heifers on **pasture produced an average net return of \$121 per acre** during the three years of the study. The average per acre net return on **corn in that part of the state was negative \$14.79** during the same period. For soybeans, the per acre net return was \$30.14 during that same period.

A major trend

◆ Between 1993 and 1999, the number of Wisconsin farms using management-intensive rotational grazing tripled from **7 percent to 22 percent of all dairy operations in the state**, according to the University of Wisconsin.

Environmental benefits

Within the past few years, agriculture has emerged as one of the leading sources of nonpoint water pollution in the country. MIRG is seen by many environmentalists and government pollution officials as a way to dramatically reduce the negative impacts of meat and milk production.

◆ A three-year study by the Minnesota Cooperative Fish and Wildlife Unit of six farms practicing MIRG in southeast Minnesota found that this technique can **significantly reduce the amount of sediment** flowing into a waterway. The study also found that a stream degraded by overgrazing starts to recover as it flows through a rotationally grazed area. **Fecal coliform levels in waterways were consistently lower** in the rotationally grazed sites when compared to continuously grazed sites.

◆ Studies done in Minnesota's Sand Creek watershed documented how each acre of a cornfield lost **10 tons of soil** during a rainstorm. Up the road, each acre of a field covered in grasses and hay lost **53 pounds of soil** during the same storm.

◆ Nitrate-nitrogen runoff from fields planted to perennial plants such as grass can be **30 to 50 times lower** when compared with fields in a corn-soybean row crop system, according to an ongoing University of Minnesota Study that's been conducted in the southern part of the state since 1973. Grazing makes it financially feasible to establish large tracts of perennial grasses in runoff-prone areas.

◆ According to an analysis of the New York dairy industry, wide-scale use of pasture-based systems in that state could lead to **27 to 33 percent less soil erosion** and **23 to 26 percent less fuel** use in crop production. Such systems would also tie up **14 to 21 million tons of carbon dioxide** and **5.2 to 7.8 million tons of nitrates** in the organic matter of pasture soils.

◆ A University of Wisconsin study conducted between 1994 and 1995 recorded **more than twice the number of nesting grassland songbirds in rotational paddocks** when compared to the same acreage of continuously-grazed pastures.

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This fact sheet is brought to you by the members and staff of the Land Stewardship Project, a private, nonprofit organization devoted to fostering an ethic of stewardship for farmland and to seeing more successful farmers on the land raising crops and livestock. For more information, call 651-653-0618 or visit www.landstewardshipproject.org