David & Beth Morrison Saline County

Management Intensive Grazing System & Alternative Watering System

Cooperator:
David & Beth Morrison
1717 E. Stimmel Rd.
Salina, Ks. 67401

Watershed:
Saline River, Mulberry Creek

Water Quality Concerns:
Livestock drylot run-off into Mulberry Creek and into Saline River; ag. chemical run-off from cropland.

Demonstration:
* Convert cropland to grasses for Management Intensive Grazing system;
* Develop alternative livestock watering system.

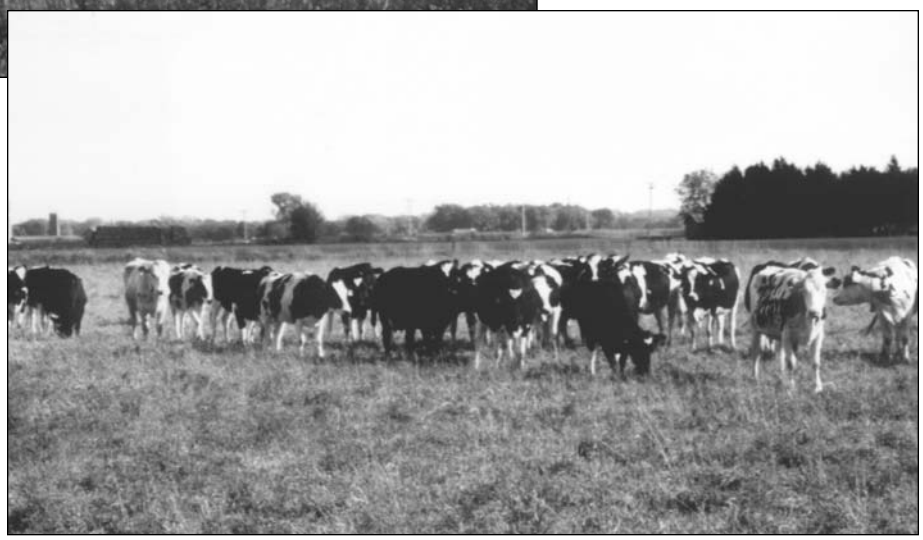
"The first time I turned them out, I thought, 'Yep, that's the way it ought to be'."
David Morrison

In the early '90s, David and Beth Morrison began looking for a new direction for their farm on the northeast edge of Salina. Salt contamination from oil field brine had rendered their groundwater nearly unusable for their confinement dairy and irrigated crops. A management intensive grazing system seemed to hold the most promise for return per acre without a heavy dependence on ground water.

In 1994, they began the conversion of their crop acres to forage crops using replacement heifers and stocker calves to harvest annual forages. As Dave says, "The first time I turned them out, I thought, Yep, that's the way it ought to be." The milking herd was sold the following year and the Morrisons were on their way to a new kind of farming.

Some perennial grasses were planted in the fall of 1995 and fencing of the paddocks was begun the following spring.

David Morrison converted bottom ground near the Saline River along I-70 Hwy. to perennial and annual grasses as he shifted from a dairy operation to his management intensive grazing system (MIG) and raising replacement heifers. The MIG system helps disperse livestock manure more evenly in the paddocks instead of in lots around the barns or near water supplies.



About this time, the Morrisons applied to the Kansas Rural Center for grant funds to establish a Clean Water Farms Demonstration. These funds allowed them to improve their grazing system with additional fencing and the establishment of water lines to all the paddocks. Until then, the cattle had to return to the barn for water.

By providing water in each paddock, manure is dispersed evenly in each paddock instead of along the lanes and near the barn. The concrete barn lots drain into Mulberry Creek, so limiting animal time in that area as much as possible is important to the preservation of water quality.

The conversion from traditional grain and forage crops meant a gradual change from mechanically harvested corn, forage sorghum, sudan, alfalfa, wheat, grain sorghum, and brome to a mix of annual and perennial forages that would be primarily harvested by animals.

These forages include brome, alfalfa, wheatgrass, orchardgrass, fescue, triticale, crabgrass, Korean lespedeza, ryegrass, and hairy vetch. The change in cropping patterns has a positive impact on water quality through a reduction in tillage (and subsequent soil loss) and decreased fertilizer and pesticide use. The Morrisons strive to keep tillage to a minimum on their "annual" acres by using no-till planting and increasing the use of self-seeding annual species

such as crabgrass, hairy vetch, and Korean lespedeza.

Undesirable species are controlled primarily by mowing and grazing management. It is interesting that one of the greatest problems that the Morrisons identified in the establishment of the grazing system was too great a percentage of undesirable species. According to Dave, "increases in biodiversity can be positive if the plants are productive and palatable. But if they are competitive, unpalatable, and unproductive, they have a negative effect." In 1998, velvet leaf was prevalent. By the following year, the velvet leaf population had decreased and pigweed and mares tail were of greater concern.

Besides improvements in water quality, the Morrisons have noted several side benefits for their farm as a result of the change to a grazing system. Wildlife is bountiful. Beth reports increased numbers of pheasant, quail, deer, and even fox. The increased number of plant species and year-round cover provide excellent habitat for these wild visitors.

The Morrisons report improvements in soil quality, also, which is directly tied to water quality. With the use of perennial species, soil tilth has been improved. As the year-round cover of well-managed forages slows run-off water, it is more readily absorbed into the soil.

All in all, the Morrisons are very happy with their move to a new type of farming. "We very definitely feel the switch in systems has been a success, or is at least taking us toward success."

Morrison Farm Characteristics

Farm size: 220 Acres of grazing land
Crops: Perennial cool season grasses with alfalfa; Reseeding annuals - crabgrass, Korean Lespedeza, hairy vetch, ryegrass; **Livestock:** Dairy replacement heifers, stocker cattle
Equipment: Too much. Equipment is older. Very little has been purchased since grazing started. Have 2 tractors, hay equipment, tillage, no-till drill, stock trailer
Seed varieties and rates: Martin Fescue - 15#; Brome - 10#; Justus Orchard grass 5#; Luna Wheatgrass - 5#; Alfalfa - 8#; Red River Crabgrass - 3#; Korean Lespedeza - 15#; Brown Midrib Sudan - 30#; Barverdi Italian Ryegrass - 30#
Labor: No hired labor **Livestock management practices:** Management Intensive Grazing (MIG)
Weed Management: MIG, rotary mowing, Roundup on bindweed
Insect & Disease Management : Cattle-fly tags, Alfalfa-spray for weevil before 1st cutting if needed; Cattle treated as needed with antibiotics, pink eye vaccine and worming
Soil Fertility : Use of legumes, cattle manure, some nitrogen fertilizer, some manure is spread from the lots as needed according to soil tests.
Water Quality Management: Converted cropland to grass; MIG system; alternative water system for livestock
Crop yields (Cattle or forages): 80 head stockers (steer and heifers), 53 replacement heifers, hay tonnage - 85 ton of alfalfa 1999.
Marketing: Some direct marketing of fat steers (side or split side), Local sale barn for the stockers, Replacements sold by private treaty
Profitability indicators: Ability to pay down operating expenses