

Larry & Kathy Ketter Marshall County

Resource Conserving Crop Rotation & Alternative Livestock Watering System



Cooperator:

Larry & Kathy Ketter
1651 17th Road
Home, Ks. 66438

Watershed:

Robideau

Water Quality Concerns:

Run-off from cropland and livestock feeding areas into nearby stream

Demonstration:

- * Establish an extended crop rotation on bottom cropland, using non-chemical weed controls and legumes for fertility
- * Develop an alternative watering system for winter livestock feeding area, including fencing the stream

Larry and Kathy Ketter are working to improve soil and water quality on their farm as well as improve farm profitability. The Kettters, along with their five children, operate a diversified crop and beef cattle farm in southern Marshall County.

The Ketter farm consists of about 150 crop acres, 65 acres of CRP, and about 800 acres of pasture (100 acres of which is winter pasture). They

raise corn, soybeans, alfalfa, wheat and oats, and a 75 pair angus black baldy cow/calf herd. Using available conservation and water quality programs they have made several changes and improvements.

At the time of their application to the Clean Water Farms Project, the Kettters had already determined that an organic crop production system, built around a legume-based crop

rotation and non-chemical weed control, was the best approach to farm profitability - and the best response to area concerns about run-off containing chemical fertilizers and herbicides.

They had already seeded much of their highly erodible cropland to grasses in the Conservation Reserve Program, which allowed them to concentrate their organic crop production efforts on bottom land, where soil fertility and mechanical cultivation are relatively easier.

For their Clean Water Farm Project, the Kettlers formalized and refined a written crop rotation plan to help them meet organic certification requirements, they modified a winter calf feeding area along Robideau Creek, and changed their winter management of the cow herd to protect water quality and reduce calf scouring problems.

Organic certification standards require disciplined crop rotations that include the systematic use of soil building legume crops, such as alfalfa. There are also restrictions on planting the same crop in the same field more than two years in a row. The written crop rotation plan is an important tool for planning and implementing an acceptable crop rotation, in addition to other aspects of overall farm planning. Below is a summary of a nine-year rotation which is implemented in each field.

The water quality benefits of a successful organic cropping system are the elimination of chemical fertilizers and pesticides that can pose leaching and runoff threats to streams and shallow aquifers. This is particularly important for the Kettlers, since most of their cropland is along creek bottoms.

Ketter Crop Rotation Summary									
Yr. In Rotation	Yr.1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6	Yr. 7	Yr. 8	Yr. 9
Basic Rotation	Oats/Alfalfa	Alfalfa	Alfalfa	Alfalfa	Corn	Soybeans	Corn	Soybeans	Soybeans
Yield Goal	Oats 75 bu Alf. 1.5 ton	5 ton	5 ton	5 ton	100 bu.	35 bu.	100 bu.	35 bu.	35 bu.
Seeding Rate	Oats - 2 bu Alf. 10 lbs.	None	None	None	14,000 seeds/ac.	175,000 seeds/ac	14,000 seeds/ac	175,000 seeds/ac	175,000 seeds/ac
Tillage	Light Disc	None or lt. springtooth			Plow green manure; Disc - 1; Cultivate 1 or 2	Disc -1 Field Cult- 1 or 2	Field Cult. 1 or 2	Disc - 1 Field Cult 1 or 2	Field Cult 1 -2
Fertility	Soybean N	None added	None added	None added	Alf. green manure	None added	Legume N Carryover	None added	None added
Weed Control	Preplant tillage cut hay	Cut hay	Cut hay	Cut hay	Crop Rotation Preplant tillage Rotary hoe Cultivate 1	1 or 2 or 2			
Cover Crop	Alfalfa	alfalfa	alfalfa	alfalfa	Stubble	Stubble	Stubble	Stubble	Stubble
Other Practices	Fall and winter	graze cattle							

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Larry Ketter



Prior to the project, calves had access to the creek and were fed in a line of bunks along the creek. The Kettters fenced the creek, and developed an alternative water source. Trees, brush and native grasses will be allowed to return to the riparian area.

Below the Ketter's farmstead near the creek, a cattle feeding area, consisting of a fence-line feed bunk and graveled access road, had been developed many years ago. The Kettters liked to use these facilities for feeder calves after weaning.

Through the Clean Water Farms Project and USDA's EQIP (Environmental Quality Incentive Program), the Kettters modified this area to protect the creek. EQIP provided cost share funds to build a diversion terrace above the feeding area and trench a water line for an alternative watering site to the creek. The CWFP cost shared fencing the creek and also contributed to developing the alternative watering site.

Larry removed some old fence to enlarge the feeding/pasture area, which along with temporary electric fence, gives him more management options in feeding and handling the cattle. The Kettters will allow native trees, shrubs, grasses and forbs to

create a buffer between the fence and the creek.

The Kettters completed the diversion, water lines and fence in the cattle feeding area during the fall of 1998 and the winter of 1999.

When asked what he thought of making the changes, Larry said, "I'm very pleased. I knew we should do something to better protect the creek. What we have done provides much more protection, it didn't cost a lot of money, and it improves my cattle operation by providing them better drinking water, a better feeding area and giving me more management options."

The Kettters feeder cattle have sold for above average prices at a local livestock auction. As the organic beef cattle market develops, the Kettters hope to obtain additional price premiums for their cattle.

Their profit strategy is built



Larry's yields for his organic soybeans average 30 to 50 bu./acre. And by being certified organic, he gets premium prices which can run two to three times the conventional price.

around appropriate land use, low production costs, good yields, and high grain and feeder calf quality. The elimination of chemical fertilizers and pesticides has not only lowered their crop productions costs, while the

organic certification of high quality soybeans and corn have generated significant grain price premiums, but they know their farm's contribution to water quality problems in the area is greatly reduced.

Ketter Farm Characteristics

Farm Size: 150 crop acres, 65 acres CRP, 800 pasture acres including 100 acre winter pasture.

Crops: Corn, soybeans, alfalfa, wheat, oats.

Livestock: 76 cow/calf pairs.

Equipment: Conventional tillage, planting, and harvesting equipment.

Labor: Self, with help from family.

Crop Management: Certified organic crop production.

Livestock Management: Spring calving; conventional graze summer pasture, wean calves in fall, graze cows on crop residues, sell feeders during winter.

Weed Management: Crop rotation and cultivation.

Insect Management: Winter graze alfalfa residue for weevil control.

Disease management: Crop rotation.

Soil fertility: Produce annual grain crops primarily in creek bottoms. Systematically use alfalfa green manure and livestock manure. Lime as necessary based on soil test results.

Water Quality Management: Fence creek to control cattle access. Developed alternative watering site. Eliminated chemical fertilizers and pesticides from cropping system.

Crop Yields: 80 to 110 bu./acre on corn; 30 to 50 bu./acre on soybeans.

Profit Strategy: Keep production costs low and sell at price premiums through certified organic production system. Strive for quality in both crops and livestock.

Marketing: Market organic grains cooperatively through Kansas Organic Producers Association. Sell feeder calves through local auction, until organic livestock market develops. Direct market a few finished beef.