

## Sharon Bean Mitchell County

## Resource Conserving Crop Rotation

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After her father's death in 1995, Sharon Bean left Seattle, Washington, to return to her family's farm in Mitchell County, Kansas, where she and her sister, now co-owners, decided to take on operation of the farm. Sharon grew up working alongside her father caring for machinery and livestock, working ground, tending and harvesting crops.

Even though she knew that farming had changed dramatically since she left the farm in 1972, Sharon welcomed the chance and the challenge to develop a viable small farm operation that continued her family's farming legacy while protecting the soil, water and other natural

resources on the farm. Sharon's father had stopped farming years ago. The machinery, buildings, grain storage facilities, etc., had not been updated during this period. So Sharon had little to begin with in the way of facilities and equipment.

But what Sharon does have in abundance is determination, practical skill and knowledge, and the ability to develop and follow a plan. Under these circumstances and with these resources, she began her farming career - fulfilling a life long dream.

Sharon farms a quarter section, consisting of 90 crop acres and 65 acres of pasture. She raises wheat, milo, soybeans, alfalfa, sunflowers

### Cooperator:

Sharon Bean  
Rt. 1 Box 30  
Beloit, Ks. 67420

### Watershed:

Solomon River Valley

### Water Quality Concerns:

Soil erosion and run-off of ag. chemicals and fertilizers into Limestone Creek

### Demonstration:

- \* Develop a legume based crop rotation including cover crops to reduce need for purchased fertilizers and reduce run-off;
- \* Utilize non-chemical weed control;
- \* Plant permanent cover strips in turn rows

and cowpeas. Sharon does not own cattle but rents her pasture to cousins who summer graze cow-calf pairs.

Sharon's immediate goals for her farm were to improve soil and water conservation and develop a plan for higher value crop production and marketing. For years before she began operating this farm, it had been mono-cropped in wheat and milo. The continuous wheat, excessive use of anhydrous ammonia, and frequent tillage had depleted soil structure, thereby impairing water infiltration and aggravating soil erosion. Sharon's strategy was to develop a soil and water conserving crop rotation that would allow her to certify her crops as organic and gain access to value added markets, while improving soil structure and water infiltration.

Sharon proposed a Clean Water Farms Project that would help her meet her goals, while also protecting water quality. She developed and implemented a resource conserving

crop rotation that systematically includes legume cover crops to improve soil structure, soil conservation and water infiltration. She organized her crop rotation in strips, which provides additional soil conservation benefits.

During the course of her project, Sharon transitioned to organic crop production, thus eliminating chemical fertilizer and pesticide use, providing an additional measure of water quality protection. Sharon noted that her turn rows had the highest weed pressure and were most prone to erosion. So she seeded the turn rows on her farm to permanent grass/legume forages.

Her plans with the turn rows are two-fold. Besides protecting the soil from erosion, the legumes (alfalfa and clover) used for turn rows will also become habitat for beneficial insects as she plans to add ladino clover, red clover, buckwheat, and hairy vetch.



*Sharon's newly seeded turn rows will help reduce field erosion and serve as a buffer strip for her organic crops.*

Sharon Bean Crop Rotation Summary						
Yr. In Rotation	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6
<b>Basic Rotation</b>	Wheat/ Sweet clover	Cowpeas	Wheat/ Sweet clover	Millet/Sorghum or Sunflowers	Cowpeas	Soybeans
<b>Yield Goal</b>	Wheat- 40 bu.		Wheat 40 bu.			25 bu.
<b>Seeding Rate</b>	Wheat -90 lbs. Sw.Clvr 10 lbs		Wheat 90 lbs. Sw. Clvr 10 lbs			1 bu./ac.
<b>Tillage</b>	Disc soy stubble for wheat	Plow Sw clvr Disk -1 Field cult. 1	Disc cowpea residue	Plow sw. clover Disk -1 Field Cult. 1-2	Disc 1 Field Cult 1-2	Disc 1 Field Cult 1-2
<b>Fertility</b>	Residual N soybeans. Rock phosphate or 5 T manure for P	N from SwClvr green manure. P from prev. applica.	N from prev. legumes or 5 T. manure for P.	N from Sw clvr P from prev. apps.	N from peas	5 ton manure or rock phosphate for P
<b>Weed Control</b>	Rotation Preplant tillage Mow weeds after wheat	Pre-plant tillage Rot. Hoe 2	Mow weeds after harvest	Pre-plant tillage Row cult 2 if sorghum or sunflowers	Rotation Pre-plant tillage Rot. hoe 1-2	Rotation Row cult
<b>Cover Crop</b>	Sweetclover	Wheat	Sweetclover	Wheat/winter peas	Oats	Wheat



Sharon has planted cover crops such as Austrian winter peas (above), sweet clover, and cowpeas as part of her soil building strategy.

Sharon continues to experiment with her crop rotation plan to find the right mix of crops for soil building, interseeding drought tolerance, and high value specialty markets. Her current mix of grain and oilseed crops include wheat, sunflowers, milo and soybeans.

She is experimenting with cowpeas, millet, and ornamental and heirloom sorghums as possible substitutes for her main crops. She is using sweetclover, winter peas and cowpeas as cover crops, either interseeded or relay cropped with her main grain crops.

The struggle to survive in farming is a big challenge in itself. To begin farming on one's own at this point in the history of American agriculture is difficult at best. But Sharon's determination, persistence, tenacity and experimental attitude may lead her to success.

As the cost of purchased farm inputs continues to rise and the need to protect soil and water quality increase, Sharon's work with integrated cropping systems and her practical approach to protecting water quality will provide useful information to others.

### **Bean Farm Characteristics**

**Farm Size:** 160 acres; 90 tillable, 65 pasture.

**Crops:** Wheat, milo, soybeans, alfalfa, sunflowers, cowpeas.

**Livestock:** Does not own livestock. Rents pasture out.

**Equipment:** Conventional tillage, planting, cultivating and harvesting equipment

**Labor & Management Practices:** Self.

**Crop Management Practices:** Minimum tillage. Transitioned to certified organic in the last five years. Integrating alternative crops and soil conserving cover crops.

**Livestock Management Practices:** No livestock. Rents pasture out. Pond, seasonal stream and well provide water.

**Weed Management:** Crop rotation, cultivation on cropland. Thistle weevil and hand rogue thistles in pasture.

**Insect Management:** Crop rotation.

**Disease Management:** Crop rotation.

**Soil Fertility Management:** Alfalfa and green manure crops. Annual legume grain and cover crops. Rock phosphate. Periodic soil testing.

**Water Quality Management:** Eliminate chemical fertilizers and pesticides. Seeded grass buffer strips for turn rows. No concentrated livestock feeding areas.

**Profit Strategy:** Certified organic price premiums on grain crops. Maintain low production costs.

**Marketing:** Direct marketing some cleaned and bagged food grains. Experimenting with production and marketing of alternative crops such as food milo and cowpeas.