Missouri Sustainable Agriculture
Demonstration Award

“Backyard Sustainable Food Production System”

Grant proposal written and submitted in November, 2001 by:
Jessica Powell, (age 9)
Laclede, Missouri

Thank you to:
Joan Benjamin
Jim Gerrish
Lloyd & Dorothy Grafton
Missouri Dept of Agriculture

Demonstrations

As part of the Missouri Sustainable Agriculture Demonstration Award, some outreach activities included speaking as a farmer producer at the 2003 Small Farms Conference in Columbia, Missouri, participating in the Food Fest in Kirksville, hosting clients of the Senate Bill 40 on a farm walk (see photo).

Speaking to the Green Hills Farm Project members with guest from Tanzania, Halima, standing next to me.

Chickens

The first chicks purchased were received in February, which, for my set up, was a big mistake. The day they arrived at the post office it was 17 degrees. The home that had been prepared for them in the grain bin on a bed of straw a couple heat lamps was not even close to being warm.
enough. I scrounged around with bales of hay to surround them and that helped a lot but several were lost to piling and the cold. Also when starting new chicks my choice was to use one of the old fashion glass bases with a quart jar positioned upside down. These are excellent for starting the chicks since they cannot drown themselves in the very shallow depth of water allowed in those waterers. Another option is to use a regular chicken waterer but fill the drink basin with gravel. Old egg cartons work fine as feeders. The flip side of early chicks is that they start laying the end of August with an abundance of eggs. It really wouldn’t be too bad if you are prepared by having a warm place for them, however, it will take more energy to get them started.

Baby chicks even up to four weeks must be protected from your pets such as cats and dogs. Cats especially are unable to resist catching those little birds. If your cats are well-behaved, they can easily be taught to leave older chickens alone. However, there are some cats, which cannot seem to learn not to kill them even up to 12 weeks. You may have to give away or remove the cat. Dogs like to chase them and untrained dogs will kill even grown birds just for the fun of it.

The third year Grandpa Powell and I built four brooders using plastic 55-gallon barrels. The barrels are cut in half lengthwise, set up on eight-inch legs, with regular light fixtures and bulbs fitted into each end. This idea is from Jordan and Anne Bentley and it is ridiculous not to have done it before. They work fabulous and cost about $15 each. Cheap, very cheap.

The surrounding wall needs to be a good 12 inches tall or the baby chicks will soon learn to jump out but for some reason cannot figure out how to get back in and will soon chill out and die.

The following year, due to some unexpected travel plans we delayed the delivery of our chicks until late May. The bad thing about this plan is that 6 months later when you hope to be having eggs, day length is at its very shortest and they simply won’t kick in and lay. I suppose if you wanted to put lights on them, it would help, however, that is not something we wanted to mess with.

This year we took delivery on some chicks in late September and raised them in the retired eggmobile. These chicks grew significantly faster than those received in the spring. Two things different are the feed and the amount of sunlight they received. Although the grain bin has a couple of doors on the roof, they do not let in near the amount of light that the open-front eggmobile did. Perhaps the sunlight had more to do with rapid growth than the quality of feed.

Chicks received in the fall seem to work well. By the time the weather gets cold the chicks are big enough to handle it without supplemental heat, plus they won’t eat as much through the winter when natural forage is very limited and when spring arrives they will start laying about the time grass and bugs come on.

I do not expect high production from our hens, but I do expect high quality eggs. Their diet is primarily green grass, bugs, and larvae although they are
supplemented with corn when they are growing and during the summer and winter as needed. Interestingly, if it is hot and dry, although there is little green stuff, God provides them with an abundance of grasshoppers and if we receive plenty of rain and there is green grass, then the grasshoppers are not as plentiful. When your neighbors are complaining that the grasshoppers are eating more grass than their cattle are, you can advise them to get chickens since as few as one hundred hens can make a noticeable difference in grasshopper population, plus provide you with world-class healthy eggs.

What a change in perspective, when one visits another’s farm and the ground is literally moving with all the grasshoppers and crickets and instead of seeing that as a problem, one sees it as an opportunity to feed a lot of chickens.

Predators are a big problem. Primarily coons, foxes with coyotes, eagles, and hawks the occasional culprits. Twice, neighborhood dogs passed through and joyfully killed about 20 full-grown hens in the middle of the afternoon. One time this spring I inadvertently shut the door of the eggmobile with a coon in it! Thirty-two dead pullets were the result with only the heads pulled off and eaten. Predator loss kept me from selling spent hens and greatly increased replacement costs, thereby, cutting into profits. Predation from raccoons and foxes is very great in the spring when the mommas are feeding their young and then teaching them to hunt in the summer.

The chickens could be kept more tightly contained but that takes away from the idea of free-range and my goal is to have hens be able to walk among the cattle, sheep, and yard. It sounds strange, but the hens really like being among the cattle even though calves chase them once in a while. Having them fenced defeats that idea, however, losing so many to predators is also unacceptable, so the search for a workable solution continues.

It was a romantic notion to think predators could be kept at bay by moving the eggmobile around the pasture. It works for about a year, but once the critters know you have chickens (an easy meal) there is no stopping them. Before you get chickens, have a predator control idea in mind and ready to implement.

**Bantams**

I ordered both regular size chickens and bantam sized chickens and since the chicks appeared to be the same size we ran them all together. This seemed to cause stress on the bantams so in the future we have raised them separately.

Bantams are an interesting yard ornament. The first bantams we ordered where white silkies and indeed people visiting could hardly believe they were chickens. The females are very gentle and nice to show. The roosters are very naughty (they stalk and attack, especially youngsters) and soon lost their heads. The old English breeds seem to be much quieter and really don’t pay much attention to you. Do not count on eggs from bantams. We might get one a week from a hen and of course it is quite tiny. After three years of having bantams, I have decided to not get them anymore.

Mom and I built a 16x12 draggable chicken coop to start and raise pullets to sell. The idea was that any hens, which do not sell, will simply go into my laying flock. Income could increase
with very little overhead and not have to worry about processing. However, we found that the coop is too heavy for the 4-wheeler to move and no market for the pullets.

The Eggmobile

Eggmobile II
The first model worked okay, but the drawbacks were that it was not particularly stable and was prone to being blown over due to its design and as a matter of fact did blow over in a high wind situation. Fortunately, no hens were lost, just shook up a bit. Plus it was not very attractive. The new design is much lower in labor since the floor is hardware cloth so the manure just goes through and the nesting boxes stay cleaner. Another plus is that I can park the eggmobile over our garden area in the winter so all the manure is being added to our garden without having to handle it! Be sure to put bales of hay or straw around the bottom of the eggmobile to cut down on the wind coming up through the floor during those cold winter storms. The hay can then be used for mulch on your garden come spring. Always try to figure out a way to minimize moving stuff around.

However, whenever chickens are near other buildings they must be fenced (we use electric netting) or they will start roosting in the barns, in the back of the pickup (and even in the pickup if the doors are left open), the garage, the porch, wherever, and they do make a big mess. Of course they will lay their eggs wherever as well and you may not end up with many eggs that you can find. Lost eggs are food for predators. Coons and opossums love them. Roosting chickens are easy prey, even for opossums, as the chickens will simply not move after dark.

One of the best pieces of advice we received was from John Murrell, who works at the seed plant. He suggested that we use screws to build the entire structure. This, he said would allow us to make changes easily or to dismantle it without damage to the boards, etc. Of course, we
did decide to dismantle it, since we didn’t like the design. Since we just backed out the screws we could re-use the old boards once again on future building projects.

Mom and I tore down an old chicken coop for the boards to build our first egg-mobile. This kept the cost to near zero, but was a tremendous amount of work. Using scraps is a great idea, but time management must be kept in mind as well.

**Gardening**

I should have taken time and planned ahead to lay black plastic sheets to kill the weeds in our garden area first. Tilling up the backyard just seems to rejuvenate the weed seed and they are simply uncontrollable. Also make sure you have full sun and close proximity to water source: preferably a rainwater or well water source. Don’t plant close to trees. Raised beds are very nice. I built mine out of 2-inch scrap lumber. The width should be no more than 4 feet wide, the length can vary and leave walking space between the boxes, either wide enough for your lawn mower or plan on mulching heavily. Go vertical. Cucumbers and other small squashes can climb on old cattle panels. Plant pole beans instead of bush beans. What surprised us is how a well-maintained small garden can produce all a family needs. Planting on the south side of a building with a good rain catch system would likely be ideal. Mine is on the north simply because the south side of the garage has a huge elm tree. Dad plans to remove the elm tree soon (before it falls!) and then I plan to expand the garden to that side as well.

Cheap plastic fence won’t deter anything and it disintegrates in the sun in just a few months. I plan to try the short electric garden fence next year. Clark, the lamb, was our biggest garden destroyer, but I also got tired of the cats using the boxes as big litter boxes!

From January thru March, 2004, I completed the University of Missouri Extension Master Gardener program.

Chickens don’t work in the garden. They eat everything, including the sprouts and then the produce, plus they scratch the dirt out of the boxes and from around the plants. But excess and too ripe veggies and fruit are great chicken feed.

My rain catchment system is simply 55 gallon food grade barrels ($10 each) with spigots screwed into the bottoms. A five-gallon bucket with holes drilled in the bottom and small hoses attached with plastic fittings and clamps. The hoses are then directed into the tops of each barrel. The five-gallon bucket contains rocks and wire screening to cut down on trash coming out of the gutters into the big barrels.
Marketing
Selling eggs has been my primary money earner. Sales have just started to pick up in this third year as people begin to realize the benefits of healthful pasture-raised eggs. My price at $2.00/dozen for large eggs seemed to be a stumbling block at first, but health- and taste-conscience consumers know that they get what they pay for.

Future Plans
Plant more fruit trees in lots – fence around them with cattle panels with space for chickens to get to the trees.
Expand the garden to south side of garage.
Purchase a guard dog for the chickens and sheep.
Continue adding to my mom’s web site www.mastersranch.com to sell wool, wool products, Shetland sheep, and eggs.

Summary
Wow, did I make a lot of mistakes with pulling this project together! I’m very grateful to the Missouri Sustainable Agriculture program to help with the financial portion of this project and now I’m ready to share what worked and what didn’t work, so anyone, young or old, can use the information I learned through trial and error and perhaps avoid some of the pitfalls I experienced. Feel free to contact me.

Resources
Bakers Creek Heirloom Seed, Mansfield
Seed Savers Exchange, Decorah, IA.
St. Lawrence Nurseries, Potsdam, NY
Stark Bros, Louisiana, MO
Cackle Hatchery, Lebanon, MO
McMurray Hatchery, Iowa
MU Agricultural Guide
ATTRA - USDA Sustainable Ag Information