

# Exploring Sustainable Hog Production Methods for Missouri Farmers

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Missouri has historically been a primary state for hog production, with hogs playing a significant role in the diversified crop and livestock operations of our state's family farmers. Farming operations have tended to be smaller and more diverse than in many neighboring states. Hog sales have been a vital source of cash income during times of the year when other sources of income were not available—the “mortgage lifter,” as they were sometimes called.

Beginning in the late 1980s, and accelerating rapidly throughout the 1990s, hog production throughout the United States began to undergo major structural and economic changes. Giant meatpackers and corporate factory farms began to get into the business of producing hogs. These changes were fueled by several factors— cheap grain, huge amounts of guaranteed capital available to factory farms, lack of environmental accountability by corporate livestock factories and a lack of enforcement of antitrust laws to keep the marketplace open and fair. The effects of these changes have been and continue to be devastating: due to vertical integration and corporate concentration in the hog industry, more than 70%

of Missouri hog farmers have been driven out of business since 1994 (10,500 in 1994 to 3,100 today). In the last sixteen years, the hog farmer's share of the retail dollar has plummeted from 46 cents in 1986 to 30 cents today. At the same time, consumer prices have increased by more than 40%. In short, somebody has been making a killing in hogs in the last 20 years, but it certainly hasn't been family farmers.

To challenge this corporate takeover of the livestock industry, MRCC began to organize opposition among our 5,500 members on numerous fronts. We challenged Premium Standard Farms, the first corporate livestock factories in Missouri. We called for environmental standards at the state and federal level that would hold corporations accountable for their pollution while allowing family farmers to

continue to operate efficiently as they had in the past. We joined with other Midwestern farm groups to form the Campaign for Family Farms and the Environment (CFFE), an allied front to challenge the corporate takeover of the hog industry. CFFE groups include the Missouri Rural Crisis Center, Land Stewardship Project from Minnesota, Iowa

## Hog Prices Received by Farmers

(average annual prices per hunderweight)

1985-1987	\$49.34
1988-1990	\$48.03
1991-1993	\$46.63
1994-1996	\$46.27
1997-1999	\$41.04
2000-2002	\$37.60

\*\* If you adjust hog prices for inflation, independent pork producers are getting paid about 51% less in real dollars for their hogs than what they received in 1985.



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*The mission of the Missouri Rural Crisis Center is to preserve family farms, promote stewardship of the land and environmental integrity and strive for economic and social justice by building unity and mutual understanding among diverse groups, both rural and urban.*

Citizens for Community Improvement and the Illinois Stewardship Alliance. We organized the successful petition drive and vote to terminate the mandatory pork checkoff, and the legal challenges to uphold our historic victory. We organized to pass the ban on packer ownership of livestock twice in the U. S. Senate during the 2001-2002 farm bill debate, and continue to work to pass the packer ban.

On the marketing end, MRCC created an economic development project, Patchwork Family Farms, to directly link Missouri hog farmers with consumers in Mid-Missouri. Patchwork producers raise their hogs using sustainable and humane growing standards: growth hormones or synthetic growth promoters are prohibited, no continuous feeding of antibiotics is allowed, animals must receive adequate amounts of sunshine, fresh air and quality feed necessary to maintain good health and animals are raised in a socially responsible manner, using environmental stewardship and sustainable growing practices. Through this cooperative production and marketing of premium quality pork,



The VanDerPol's Pastures A'Plenty farm uses pasture and hoop house hog production systems for their diverse marketing efforts. They have their own direct sales operation where they average 5 hogs per week sold, as well as selling hogs through Niman Ranch. According to Jim VanDerPol, their cost-of-production is around \$95 per hog, with feed costs making up 2/3 of that total. Their 2 hoop houses cost \$10,000 each to put up.

Patchwork producers receive a fair price for what they produce, which is significant because the current marketplace is neither fair nor competitive.

While Patchwork has focused on the marketing and product development end over the last several years, we've become more and more interested in providing Missouri farmers with information on sustainable hog production techniques that can help Patchwork producers to become more profitable and sustainable. To learn more, MRCC joined with long-time ally Land Stewardship Project (LSP) in Minnesota.

MRCC and LSP have a long and successful relationship of working together. Both organizations are founding members of the Campaign for Family Farms and the Environment, and have worked together for almost a decade on innovative policies and programs that will benefit farmers and the environment. LSP has successfully created a university-based research program for sustainable hog production by working through the Minnesota state legislature and University Extension. LSP members have utilized



Land Stewardship Project member Rodney Skalbeck shows us a fine boar in the running for state champion at the Minnesota State Fair. The Skalbeck family operates a corn, soybean and hog farm near Sacred Heart, MN. The Skalbecks sell their hogs on the open market, and as breeding stock from their registered Duroc herd.





The Struxness family has been able to access the Environmental Quality Incentives Program (EQIP) and Sustainable Agriculture Research and Education Program (SARE) to build a rotational grazing system on their Milan, MN, livestock farm. The Struxnesses were able to fence, cross-fence and build water lines below ground on 160 acres so that they can divide the operation into numerous paddocks during the entire year.

state and federal grants programs to make improvements in their operations.

After talking about how we could best learn from one another, 10 Patchwork Family Farms producers and staff traveled to Minnesota in August of 2002 to visit with LSP for a producer exchange. We organized the trip so that farmers could have one-on-one conversations on issues related to sustainable production techniques, family farmer marketing efforts and creating fair and competitive markets. It was to be a true farmer-to-farmer exchange, full of good food and good conversation on the western Minnesota prairie.

### **About the Land Stewardship Project-**

The Land Stewardship Project (LSP) is a private, nonprofit organization founded in 1982 to foster an ethic of stewardship for farmland, to promote sustainable agriculture and to develop sustainable communities.

Since its founding in 1982, the Land Stewardship Project (LSP) has worked steadfastly for environmental and social justice in rural America. LSP began by educating rural and urban people on the ethics of farmland stewardship through cultural programs and by creating a farmer-to-farmer network to help farmers move to more sustainable farming methods. In response to urban sprawl, they initiated discussions on smart growth and farmland preservation options.

LSP has helped dozens of communities organize to stop factory farms and linked sustainable livestock producers to potential urban customers. Working in the Sustainable Agriculture Coalition, LSP backed federal policy promoting farming alternatives that are good for the land and good for farmers. They have introduced hundreds to Whole Farm Planning and Monitoring. And LSP helped Community Supported Agriculture farms get established throughout the region. LSP regularly supports research of farming practices that improve the profitability, environmental sustainability and quality of life of family farmers.



The Sustainable Swine Research Center in Morris, MN, was established by farmers and legislators calling on the University system to research hog production that will actually benefit family farmers and rural communities instead of corporate agribusiness. The Center has several hoop houses and pasture-based operations that are measuring the economic and environmental benefits of utilizing more sustainable methods of hog production. Producers have created a network where they can share information on different production techniques and economic benefits associated with them.

## Reflections-

As we drove back from Minnesota, we discussed what we had learned on the trip. One striking difference between the Missouri and Minnesota farm situations was the clear differences in diversification. In Missouri, most producers raise a wide array of crops and livestock. Almost everyone has some pasture and woodlot as well. In western Minnesota, there is mostly corn, beans and an occasional field of sugar beets. There's very little pasture or cattle, and the only trees are around the farmhouses. It's row-crop country, pure and simple. That's why the Minnesota farmers kept talking about how everyone needed to diversify to survive lower corn and soybean prices.

For Missouri farmers, the question is how to build on the diversity that already exists. Clearly, this diversity has helped us to maintain a strong family farm base in our state, the number two ranking state in number of farm operations.

We were also impressed by the way the LSP members had worked together to create the Swine Research Center and form a network of sustainable hog producers to learn from each other's production systems. By focusing on grassroots organizing and building farmer-friendly coalitions, LSP has been able to accomplish a great deal. Maybe we can learn some important lessons from their example.

Jonathon Stroebel, a young farmer from Tipton, MO told us that he "was impressed by how the farmers in Minnesota were able to adapt these sustainable techniques into their existing buildings and other resources; this was what made these

techniques even more economical."

Carl Weihardt, a Patchwork producer from Howard County, MO was "...really impressed that, in a time where all the big companies are trying to take over and weed out the little producers, farmers were able to put their heads together and organize and still have their place in production agriculture."

Carl talked about his role as an MRCC member in the fight to preserve family farms. "I'm really glad that there's a group of farmers banding together; I think that's really important for the future instead of encouraging our children to take off-farm jobs and letting the big industry take over. It feels good to get involved and stand up for what I believe is a worthwhile effort that we need in this country."

Brenda Dougherty was impressed with the individual marketing efforts of the farmers. "They had created many different strategies for getting their products straight to the consumers; this helped them maximize the profits from their products."

Joyce Perry, a diversified row crop and livestock farmer from north-west Missouri, admired the pasture farrowing and hoop houses at Jim VanDerPol's farm. "Those hogs were different than confinement hogs, they seemed to be stress-free hogs and that is what I believe impressed me the most. I think (these

techniques) are something that we can use very efficiently in MO."

Joyce was inspired by the fact that "The families in Minnesota are changing their operations to be able to find a way that they can involve the next generations. At every farm that we went to the sons and daughters were a part of the operation."



Paul and Candy Sobocinski's farm in Wabasso, MN, is currently "in transition" to more sustainable production techniques. Paul is diversifying from corn and beans into a crop rotation that includes more small grains and pasture. He has modified old dairy barns into a farrowing house, where he utilizes large stalls with deep-straw bedding for his farrowing facilities. Paul then moves his hogs to a deep-straw nursery, also in the re-vamped dairy barns.

**For more information about sustainable hog production techniques or to become involved with the fight to preserve the family farm system of agriculture, contact us at:**

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# In-Depth: Sustainable Hog Production Techniques\*

## • Swedish Deep Straw Farrowing

The Swedish deep-straw farrowing system is based on the animals' natural behavior and involves carefully planned production, maintenance of sows in stable groups, longer nursing periods, and deep-straw beds for the sows during nursing and weaning (Halverson et al., 1997). Successive groups of sows move through the system in a continuous process. Large amounts of straw bedding (two tons per sow per year) keep animals comfortable and reduce stress by giving the pigs something to do, while at the same time absorbing most odors.



A variety of buildings can be used in the Swedish deep-straw system, including old hog houses, barns or even hoop structures. Older buildings should be well insulated and must be well ventilated and well lit, using both natural and artificial light, to help ensure that pigs respond to the light cycles of day and night.

Piglets are kept in the farrowing boxes for their first seven to ten days, allowing them to bond with their mother. Then the farrowing boxes are removed and the sows and litters are allowed to mingle (Halverson et al., 1997). During this period, they have free access to a common area that includes feed and water on a raised platform. After weaning, the sows are taken to a breeding barn or room while the pigs stay in the nursing room.

For a nursing room with eight to ten sows, a farmer spreads two 750-pound round bales of straw before animals enter the area. The farmer adds another 750-pound bale of straw to the room every week and places fresh straw over wet spots daily. The minimum amount of space needed for this system is about 27 square feet per sow during gestation and mating phases and 81 square feet per sow and litter during nursing (Halverson et al., 1997). Throughout the farrowing process, sows are maintained in groups of 8 to 12, and sows within a group are bred to farrow within five days of one another to minimize size differences among their piglets. The composting component of this system is key to good animal health.

In Sweden, sow longevity is between six and seven farrowings compared with about three farrowings for hogs raised in confinement in the United States (Halverson et al., 1997). Increased sow longevity means fewer replacement sows and reduced costs. The larger litters that older sows successfully farrow and wean also improve the bottom line. Deep-straw bed farrowing operations require an average of 18 hours of labor per sow per year (Halverson et al., 1997). A new producer can expect to put in more hours as both producer and hogs learn how to operate in this new system.

## • Deep Straw Hoop Structures

Hoop structures are arched or curved pipes covered with a polyethylene fabric tarp. The ends of the buildings are left open most of the year, but are closed during extreme winter weather. Three-quarters of the floor is covered with deep straw bedding. The remaining portion is a raised feeding and watering platform.

Hoop structures generally cost less and require less maintenance than more traditional confinement structures. They are quick and easy to build and can be used for other things when hog prices are down. Because the manure generated in hoop structures is in a solid form, the potential for odor and water contamination are minimized.

Most hoop structures used in the Midwest are 30 feet by 72 feet and house 180 finishing pigs (Brumm et al., 1997). Eight big round bales (approximately 1,200 pounds each) of straw or cornstalk bedding are put down and one or two 1,200-pound bales are added each week (Brumm et al., 1997). It is important to have enough bedding material and to cover wet spots.



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Building costs, including cement and waterers, range from \$9,000 to \$16,200, depending on the manufacturer and how much work is hired out. At \$50 to \$90 per pig space, this represents approximately one-quarter to one-half the cost per pig space of standard confinement facilities (Brumm et al., 1997). Average daily gain for hoop-housed pigs is as good as that of confinement pigs, and may be greater (Brumm et al., 1997). Research has shown that feed efficiency drops during the winter.

While labor is highly variable depending on farm size, experience of the manager, etc., some studies show that the hoop house system requires slightly more labor (0.1 hour per pig) than confinement systems (Duffy and Honeyman, 2000). With hoop structures, more time is spent checking pigs, moving and arranging large bales of bedding, and loading and hauling solid manure (Honeyman et al., 2000). More time is needed for observation and monitoring of conditions such as temperature and bedding level (Honeyman et al., 2000).

With the hoop structure system, manure and urine are mixed with large amounts of carbonaceous material and composted year-round. The composting process stabilizes the nutrients and reduces the volume of wastes. Because the manure is in a stabilized solid form, the danger of run-off and other environmental hazards can be reduced, although there may be some concern about nitrogen leaching from manure packs which are stored outdoors until they can be spread, especially during high rainfall periods (Richard et al., 1997). Odor is also minimized, if not totally eliminated.



### • Pasture Production Systems

The low fixed costs of pasture production systems, also known as outdoor or grazing systems, appeal to many farmers who want to expand their hog operations without making large capital investments. Outdoor, or pasture, farrowing systems need portable housing, feeders, watering systems and, usually, electric fencing. The portable houses are spread out over several acres and the animals distribute manure naturally.

Electric fencing is often used in pasture farrowing because it is easy to install, remove and store. Fencing can divide a pasture into groups of sows with pigs the same age, which is advantageous during group lactation (Honeyman and Weber, 1996). In most cases, pastures can be established or removed in less than an hour. These technologies give producers control over livestock without the extensive fence maintenance of older woven-wire hog fences.

In a pasture system, feed accounts for 60 to 70 percent of the total cost of producing hogs farrow to finish (Honeyman and Weber, 1996). A study of Iowa farm records from 1989 to 1993 found that outdoor farrowing herds required 20.6 pounds more feed per hundred-weight of live gain (or 51.5 pounds more feed per 250-pound pig marketed) than indoor farrowing herds. In pasture farrowing, each acre typically has 7 to 15 sows and litters.

One of the best things about the pasture system is the healthy environment it offers both animals and producers. Respiratory diseases, rhinitis and foot and leg problems are minimized in hogs allowed outside (Gegner, 1992). Producers using pasture farrowing often have lower swine health expenses than producers using confinement systems, because less disease is transmitted in open spaces (Honeyman and Weber, 1996).



Iowa farm records from 1989 to 1993 show that farrow-to-finish operations using outdoor farrowing weaned fewer pigs both per litter and per sow per year. They also had a poorer whole herd feed efficiency rate. Year-to-year variability was greater in the outdoor systems (Honeyman and Penner, 1995). However, these operations did have lower fixed costs and overall lower costs of production (or lower breakeven price), which outweighed the reduced litter size and lower feed efficiency. This same study of Iowa producers found that the total production cost, or break-even price, for producing a market pig was \$4.88 less for outdoor herds than for indoor herds (Honeyman and Penner, 1995).