

Events and Programs

Several events may be helpful as you further explore your options. The first is the series of field days organized each summer by the Energy and Sustainable Agriculture Program (ESAP) of the Minnesota Department of Agriculture and local chapters of the Sustainable Farming Association. During these field days, farmers who use the systems described in this guide provide you with a first-hand look at their operations. (See “Organizations” for information on how to contact MDA-ESAP.)

The Alternative Swine Production Systems Program was formed in response to concerns from producers interested in alternative swine systems. It is funded by the Minnesota State Legislature and is a joint program of the Minnesota Institute for Sustainable Agriculture, the Swine Center at the University of Minnesota and the Minnesota Department of Agriculture. Its mission is to conduct research and educate producers about alternative swine systems that are profitable, environmentally friendly, and help support rural communities in Minnesota. They maintain a database of pork producers using alternative systems in Minnesota, produce a resource book on alternative system information, and sponsor multiple programs throughout the year. (See “Organizations” for contact information.)

Iowa State University Alternative Swine Systems Initiative Team (also known as the “Hoop Group”) has an active research program and is a wealth of information on alternative swine production techniques. It is an interdisciplinary team working on topics related to sustainable alternative swine systems, including hoop structures for finishing pigs and gestating sows, outdoor farrowing, and deep-bedded Swedish systems. (See “Organizations” for contact information.)

The Minnesota Pork Producers’ Association (MPPA) holds an annual convention (January/February) during which you can visit and learn about various hog production systems. (See “Organizations” for information on how to contact MPPA).

The University of Minnesota Swine Center also holds workshops and conferences throughout the year, including the Lemay Conference (September) and the Minnesota Nutrition Conference (September). In addition, legislative funding has made it possible to construct two new facilities for swine research: a 600-sow breeding/gestation/farrowing research facility at the Southern Experiment Station in Waseca, and a 500-head off-site nursery and alternate swine housing research facility at the West Central Experiment Station in Morris, Minnesota. The Alternative Swine Production System Program has overseen the construction of four hoop structures at Morris, two of which will be used for research on finishing hogs, one for gestating sows, and a fourth for bedding storage. In addition, an older confinement farrowing building will be remodeled

into a Swedish deep-bedded farrowing unit. These facilities will enable researchers to learn more about improving feed efficiency in alternative systems, observe pig behavior and handling and make comparisons of bedding types and types of feed in these alternative systems. (See “Organizations” for contact information.)

Another program that will interest Minnesota swine producers is Minnesota Certified Pork (MNCEP). This program is a cooperative effort by the University of Minnesota and the Minnesota Department of Agriculture to implement and certify high-quality swine production practices on independent Minnesota farms. The goal is to provide quality pork to the marketplace, traceable back to the farm of origin. The quality standards are outlined in the MNCEP Quality Handbook. The standards can also reflect certain market segment demands (e.g., export to Japan, natural food retailers, or organic markets), in contrast to the NPPC-PQA Level III standards. The standards are written as Standard Operating Procedures (SOPs) on best production practices, pre-harvest food safety, environmental stewardship, animal welfare, and recording and documentation. Compliance with applicable SOPs are audited internally once a month and third-party-certified by the Minnesota Department of Agriculture once a year.

MNCEP serves as a pilot project for a broader program just being initiated, Minnesota Certified (MnCERT). This program will develop production practice standards for many agricultural commodities in Minnesota. MnCERT will also research requirements for niche markets or market segments with specific demands, and tailor production practice standards to meet those specific requirements. For more information on both these programs, visit the University of Minnesota Swine Center web page. (See “Organizations” for contact information.)

Organizations

Alternative Swine Production Systems Program. University of Minnesota, 385 Animal Science/Vet Med, 1988 Fitch Ave., St. Paul 55108. 612-625-6224 or 1-877-ALT-HOGS. www.misa.umn.edu

Energy and Sustainable Agriculture Program (ESAP). Minnesota Department of Agriculture. 90 West Plato Blvd., St. Paul, MN, 55107. 651-296-7673. www.mda.state.mn.us/ESAP

Iowa State University Alternative Swine Systems Initiative Team. Mark Honeyman and James Kliebenstein, co-leaders. B1 Curtiss Hall, Iowa State University, Ames, IA, 50010. 515-294-4621. honeyman@iastate.edu

Leopold Center for Sustainable Agriculture. 209 Curtiss Hall, Iowa State University, Ames, IA 50011-1050. Phone: 515-294-3711. Fax 515-294-9696. leocenter@iastate.edu, www.leopold.iastate.edu

Minnesota Pork Producers Association. 360 Pierce Avenue, Suite 106, North Mankato, MN 56003. 507-345-8814. mnppork@ic.mankato.mn.us, www.mnppork.com.

Minnesota Institute for Sustainable Agriculture (MISA). 411 Borlaug Hall, 1991 Buford Circle, St. Paul, MN 55108. 612-625-8235 or 800-909-6472. misamail@tc.umn.edu, www.misa.umn.edu.

Sustainable Farming Association of Minnesota. c/o DeEtta Bilek, Route 1, Box 4, Aldrich, MN 56434. 218-445-5475. deebilek@wcta.net.

University of Minnesota Swine Center. 385 Animal Science/Veterinary Medicine, 1988 Fitch Ave., St. Paul, MN 55108. 612-625-3173. longt001@umn.edu, www.cvm.umn.edu/swine

Individuals

Dwight Ault, pasture-farrowing hog producer. Route 1, Box 230, Austin, MN 55912. 507-437-3085.

Chris Barnier, loan officer. Farm Service Agency, RR 2, Box 222A, Little Falls, MN 56345. 612-632-5477.

Byron Bartz, pasture hog producer. RR 1, Box 20, Barrett, MN 56311. 612-528-2301.

Prescott Bergh, outreach coordinator. Energy and Sustainable Agriculture Program., Minnesota Department of Agriculture, 90 W. Plato Blvd., St. Paul, MN 55107. Phone: 651-215-0367. Fax: 651-297-7678. Prescott.Bergh@state.mn.us.

Terry Dalbec, ag finance specialist, Agricultural Marketing and Development Division. Minnesota Department of Agriculture, 90 W. Plato Blvd., St. Paul, MN 55107. 651-215-0368.

Tom Frantzen, pasture-farrowing hog producer. 1155 Jasper Ave., New Hampton, IA 50659. 515-364-6426.

Doug Gunnink, farmer. 25303 461st Ave., Gaylord, MN 55334. 507-237-5162. dgunnink@prairie.lakes.com.

Marlene Halverson, consultant. 10346 S. Dennison Blvd., Northfield, MN, 55057. 507-645-2478.

Scott Hislop, confinement hog producer, RR3, Mapleton, MN 56065-9314. 507-524-4583.

Larry Jacobson, agricultural engineer. Biosystems and Agricultural Engineering, 210 Bio Ag Eng., 1390 Eckles Ave., University of Minnesota, St. Paul, MN 55108. 612-625-8288.

Nolan Jungclaus, Swedish system hog producer. 12540 210th Ave. SE, Lake Lillian, MN 56253. 320-664-4843.

Roger Moon, livestock entomologist. 219 Hodson Hall, 1980 Folwell Ave., Univ. of Minnesota, St. Paul, MN 55108. 612-624-2209.

Mark Moulton, hoop house and confinement hog producer. 51420 Game Ave., Rush City, MN 55069. 320-358-4632.

Mike Natvig, pasture farrowing hog producer. 20074 Timber Avenue, Cresco, IA 52136. 319-569-8358.

Bret Oelke, Extension educator, Grant County Extension. P.O. Box 1099, Elbow Lake, MN 56531. 218-685-4820.

Peter Reese, Catalyst Consulting. Box 246, Kohler, WI 53044. 920-457-1009. farmsmart@aol.com

Jim Van Der Pol, pasture and hoop house hog producer. 1475 110th Ave NE, Kerkhoven, MN 56252. 320-847-3432.

Steve Zink, farm management instructor. Willmar Area Technical College, 701 S. 9th St., High School, Olivia, MN 56277. 612-523-5468

Publications

Alternative Systems

Grazing Reference Materials Manual. Cooperative Extension Division of Wisconsin–Extension, College of Agricultural and Life Sciences, Univ. of WI-Madison. Revised January, 1997.

Greenbook. Contains reports on sustainable agriculture projects, including alternative swine production. Published annually. Energy and Sustainable Agriculture Program, Minnesota Department of Agriculture, 90 W. Plato Blvd., St. Paul, MN 55107. 612-296-7673. www.mda.state.mn.us/ESAP

Hoop Structures for Gestating Swine. M.C. Brumm, J.D. Harmon, M.S. Honeyman, J.B. Kliebenstein and J.M. Zubvich. Midwest Plan Service. Iowa State University. Ames, IA. AED-44.

Pork Industry Handbook. Managing market pigs in hoop structures. Purdue University Cooperative Extension Service. West Lafayette, IN. 1999. PIH 138.

Swine System Options for Iowa. Proceedings of a conference held February 21, 1996 at Iowa State University. Available from the Leopold Center for Sustainable Agriculture.

1999 Swine Research Report. Iowa State University. Ames. 2000. AS-642. Contains latest research results from Iowa about swine performance in many alternative systems.

- Thermal stress levels of sows in various gestation housing systems. M.S. Honeyman, D.C. Lay, J.D. Harmon. 1999. ASL-R1676.
- Organic pork production: A two-litter pasture farrow-to-finish budget. J.M. Becker, M.S. Honeyman, J.B. Kliebenstein. 1999. ASL-R1679.

- Reproductive performance of young sows from various gestation housing systems. M.S. Honeyman, D. Kent. 1999. ASL-R1678.
- Piglet mortality in various hut types for outdoor farrowing. M.S. Honeyman, W.B. Roush, A.D. Penner. 1999. ASL-R1680.
- Performance of pigs in hoop structures and confinement during summer with a wean-to-finish system. M.E. Larson, M.S. Honeyman. 1999. ASL-R1681.
- Performance of finishing pigs in hoop structures and confinement during summer and winter. M.E. Larson, M.S. Honeyman, A.D. Penner, J.D. Harmon. 1999. ASL-R1682.
- Performance of a Swedish deep-bedded feeder pig production system in Iowa. M.S. Honeyman, D. Kent. 1999. ASL-R1683.
- Small scale hoop structures for market swine. M.S. Honeyman, L. Rossiter. 1999. ASL-R1684.
- Labor requirements for market swine produced in hoop structures. M.D. Duffy, M.S. Honeyman. 1999. ASL-R1685.
- Cost of finishing pigs in hoop and confinement facilities. C. Brewer, J. Kliebenstein, M.S. Honeyman, A. Penner. 1999. ASL-R1686.
- Analysis of growth of pigs in grow-finish facilities. C. Brewer, J. Kliebenstein. 1999. ASL-R1687.

Swine Sourcebook: Alternatives for

Pork Producers. Many of the resources and cited references listed in this section are available in the Swine Sourcebook, an extensive compilation of articles and other publications on alternative swine production systems in one notebook. The table of contents from the Swine Sourcebook is printed below and an order form for the Swine Sourcebook is at the back of this book. The publication is available from Minnesota county Extension offices (item number PC-7289).

Part One: Sustainable Pork Production

1. Can Livestock Save Endangered Farmers? Craig Cramer, *The New Farm*.
2. Sustainability Issues of US Pork Production. M.S. Honeyman, *Journal of Animal Science*.
3. Sustainable Swine Production in the US Corn Belt. Mark S. Honeyman, *American Journal of Alternative Agriculture*.
4. A Low Investment Swine Systems: A Demonstration Project of the Kerr Foundation. Jim Cantrell, The Kerr Foundation.
5. Sustainable Hog Production. Lance E. Gegner, Appropriate Technology Transfer for Rural Areas, United States Department of Agriculture.

6. Establishment of a Low-Input Year-round Swine Production System. Mark S. Honeyman and Roger McMillin, Iowa State University.
7. Outdoor vs Indoor Pig Production in Iowa: An Economic and Production Comparison. Mark Honeyman and Arlie Penner, Iowa State University.

Part Two: Hoop Structures

Research

1. Hoop Structures for Grow-Finish Swine. Michael C. Brumm, Jay D. Harmon, Mark C. Honeyman, and James B. Kliebenstein, MidWest Plan Services.
2. Hooped Structures with Deep Bedding for Grow-finish Pigs. M.S. Honeyman, Iowa State University.
3. Performance and Budget Analysis of Finishing Pigs in Hoop Structures and Confinement During the Winter: First Group Results. M.S. Honeyman, C.L. Brewer, J.B. Kliebenstein, D.J. Miller, A.D. Penner, M.E. Larson and C.S. Jorgensen, Iowa State University.
4. Alternative Housing with Canadian Biotech Shelters and a Review of Some European Concepts. M.L. Connor, L. Onischuk, Q. Zhang, R.J. Parker and J.I. Elliot, Canadian Society of Agricultural Engineering.
5. Environmental Evaluation of an Outdoor Shelter for Swine. Q. Zhang, M.G. Britton, M.L. Connor, R.J. Parker and J.I. Elliot, American Society of Agricultural Engineers.
6. Hoop Structures—Research on Performance and Operation, Jay D. Harmon and Mark S. Honeyman, Iowa State University.
7. Hoop Structures—Performance and Cost Effectiveness. M.L. (Laurie) Connor, University of Manitoba.
8. Alternative Low Cost Group Housing for Pregnant Sows. M.L. Connor, D.L. Fulawka and L. Onischuk, American Society of Agricultural Engineers.
9. Early Weaned Pig Performance in Hoop Structures During Early Summer, M.E. Larson and M.S. Honeyman, Iowa State University.
10. Gestating Sows in Deep Bedded Hoop Structures. Mark S. Honeyman, Jay Harmon, Don Lay and Tom Richard, Iowa State University.
11. Thermal Performance of a Hoop Structure for Finishing Swine. Jay D. Harmon and Hongwei Xin, Iowa State University.
12. Hoop Structure Bedding Use, Labor, Bedding Pack Temperature, Manure Nutrient Content, and Nitrogen Leaching Potential. Tom Richard, Jay

Swine Sourcebook contents, cont'd.

Harmon, Mark Honeyman and John Creswell, Iowa State University.

Demonstration

1. Hoop Buildings. Dan Looker, *Successful Farming*.
2. Alternative Structures Make Their Mark. Jane Messenger, *PORK '96*.
3. Hoops Rate Solid Building Choice. Joe Vansickle, *National Hog Farmer*.
4. Hooped Shelters for Finishing Hogs. Appropriate Technology Transfer for Rural Areas, United States Department of Agriculture.
5. Deep Straw Bedded Swine Finishing System Utilizing Hoop Buildings. Mark and Nancy Moulton, *Greenbook '97*.
6. Low Cost Sow Gestation in Hoop Structures. Steve Stassen, *Greenbook '98*.
7. Hoop Houses and Pastures for Mainstream Hog Producers. Josh and Cindy Van Der Pol, *Greenbook '98*.

Part Three: Swedish Deep Bedding

Research

1. Vastgotmodellen: Sweden's sustainable alternative for swine production. Mark Honeyman, *American Journal of Alternative Agriculture*.
2. Swedish Deep Bedded Group Nursing Systems for Feeder Pig Production. Marlene Halverson, Mark Honeyman and Mary Adams, Iowa State University.
3. Alternative Housing for Feeder Pig Production. L.D. Jacobson and Q. Geng, American Society of Agricultural Engineers.
4. First Year Results of a Swedish Deep-Bedded Feeder Pig Production System in Iowa. Mark Honeyman and D. Kent, Iowa State University.

Demonstration

1. Demonstrating a Swedish Feeder Pig Product System in Iowa. M. S. Honeyman and D. Kent, Iowa State University.
2. Iowa State University Sow Loose-Housing Gestation Model. M. S. Honeyman, Iowa State University.
3. Swedish Style Swine Facility. Nolan and Susan Jungclaus, *Greenbook '96*.

Part Four: Pasture Systems

Research

1. Outdoor Pig Production: An Approach That Works. M.S. Honeyman and L. Weber, Iowa State University.
2. One-Litter Outdoor Farrowing System by Using Artificial Insemination and Hoop Structures. Benjamin Larson, Mark Honeyman and James Kliebenstein, Iowa State University.
3. Two-Litter Outdoor Farrowing System Budget. Benjamin Larson, Mark Honeyman and James Kliebenstein, Iowa State University.
4. Segregated Early Weaning of Pasture-farrowed Pigs. M.S. Honeyman, A.D. Penner and W.B. Roush, Iowa State University.
5. Outdoor Pig Production: A Pasture-farrowing Herd in Western Iowa. M. S. Honeyman and W. Roush, Iowa State University.
6. Pig Crushing Mortality by Hut Type in Outdoor Farrowing. M.S. Honeyman and W. Roush, Iowa State University.
7. Alfalfa grazing by Gestating Swine: A Four-Year Summary. M.S. Honeyman and W. Roush, Iowa State University.
8. Pasture Farrowing Labor Use Study. M.S. Honeyman and M.D. Duffy, Iowa State University.
9. Cost Comparison for Conventional and Segregated Early Weaning of Pasture-Farrowed Pigs. M.S. Honeyman, Iowa State University.
10. Soybean Grazing by Gestating Gilts. M.S. Honeyman, A.D. Penner and W.B. Roush, Iowa State University.
11. Forage Rape Grazing with Gestating Gilts. M.S. Honeyman, W. Roush and A.D. Penner, Iowa State University.

Demonstration

1. A Gentler Way: Sows on Pasture. Dwight and Becky Ault, Land Stewardship Project.
2. Save Gestation Feed with Pasture System. *National Hog Farmer*.
3. Grass and Forage Based Finishing of Beef and Pork, with Consumer Testing. Jenifer Buckley, Lake Superior Meats Cooperative, *Greenbook '98*.
4. Butcher Hogs on Pasture. Michael K. and Linda M. Noble, *Greenbook '97*.
5. Grazing Hogs on Standing Grain and Pasture. Michael and Jason Hartmann, *Greenbook '97*.

Swine Sourcebook contents, cont'd.

6. Grazing Sows on Pasture. Byron Bartz, *Greenbook '97*.
7. Expanding Into Outdoor Hog Production. James Van Der Pol, *Greenbook '96* and *Greenbook '94*.
8. Low Input Range Farrowing of Hogs. Larry Mumm, *Greenbook '94*.
9. Grazing Hogs on Various Grains and Forages. Michael and Jason Hartmann, *Greenbook '96*.

Part Five: Low Antibiotic Production

1. Healthy Livestock with Fewer Drugs. Craig Cramer, *The New Farm*.
2. Probiotics Can Be an Economical and Effective Part of Livestock Health. Heidi Carter, The Kerr Center for Sustainable Agriculture.

Part Six: Marketing

1. Market Access—Survey Results. John D. Lawrence, Iowa State University.
2. Audubon County Family Farms: Relationship Marketing. Cindy Madsen, Leopold Center for Sustainable Agriculture.
3. Specialty Meats—Direct to You, Minnesota Grown. Minnesota Department of Agriculture.

More Ideas

1. Alternative Farming Systems Information Center National Agricultural Library, United States Department of Agriculture.
2. Agriculture that Makes Sense: Making Money on Hogs. Jodi Dansingburg and Douglas Gunninck, Land Stewardship Project.
3. Profitable Hog Systems: Sustainable Ways to Raise Low-Cost, High-Quality Hogs. *The New Farm*.

Confinement Systems

Livestock Industry Facilities and Environment. Iowa State University, University Extension, Ames, Iowa.

- Choosing Fans for Livestock and Poultry Ventilation. 1995. PM-1587.
- Environmental Guidelines for Confinement Swine Housing. 1995. PM-1586.
- Environmental Regulations for Livestock Manure Management. 1995. PM-1607.
- Guidelines for Minimizing Odors in Swine Operations. 1995. PM-1605.

- Health Hazards in Swine Confinement Housing: How Bad Is Bad? 1995. PM-1588.
- Pit Recharge Manure Management System. 1995. PM-1601.
- Vented Plumbing for Livestock Manure Handling Systems. 1995. PM-1600.

Manure Management in Minnesota. University of Minnesota Extension Service. St. Paul. AG-FO-3553. May 1998.

Pork Industry Handbook. Purdue University Cooperative Extension Service. West Lafayette, IN.

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- Swine Growing-Finishing Units. V.M. Meyer, L.B. Driggers, K. Ernest and D. Ernest. 1991. PIH-11.
- Systems of Runoff Control. James A. Moore, Vernon M. Meyer and Alan L. Sutton. 1993. PIH-21.
- Swine Farrowing Units. Charles M. Stanislaw and Arthur J. Muehling. 1997. PIH-10.
- Pork Production Systems with Business Analysis: The High-Investment, High-Intensity System. Charles M. Stanislaw, Kelly D. Zering and Jack W. Parke. 1990. PIH-83.

Swine Housing and Equipment Handbook. (4th ed.) Midwest Plan Service. Iowa State University. Ames, Iowa. 1991.

Swine Farrowing Handbook: Housing and Equipment. Midwest Plan Service. Iowa State University. Ames, Iowa. 1992. MDPS-40.

Swine Nursery Facilities Handbook. Midwest Plan Service. Iowa State University. Ames, Iowa. MWPS-41. 1997.

Understanding the Impacts of Large Scale Swine Production: Proceedings from An Interdisciplinary Scientific Workshop. K. Donham and K.M. Thu, eds. North Central Regional Center for Rural Development. 1995.

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SWINE SOURCE BOOK:

Alternatives for



Pork Producers

- ✓ Combines educational publications and popular press publications about low-input, low-capital-investment swine production systems, such as deep-bedded straw, hoop structures, and pasture farrowing.
- ✓ No other single publication collects all of the available information in one place.

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MISA is a partnership between the University of Minnesota's College of Agricultural, Food, and Environmental Sciences and the Sustainers' Coalition, a group of individuals and community-based, non-profit organizations. MISA's purpose is to bring together the agricultural community and the University community in a cooperative effort to develop and promote sustainable agriculture in Minnesota and beyond.



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