



Introduction

The purpose of this website is to offer farmers who might be interested in moving into alternative hog production. The website will offer information through a collection of resources, references, and contacts. This can help farmers trying to investigate a more humane and sustainable form of production.

Topics covered are deep bed systems (Swedish style), hoop housing, pasture grazing, pasture farrowing, marketing, and farmers' experiences. The site will have links to the best website information in the country. These sites have detailed information, resources and stories. We will be posting new additions, interviews with farmers who are trying new approaches, and much more.

Links:

Sustainable Hog Production Overview www.attra.org/attra-pub/Hogs.html

Resources: Swine System Options for Iowa. Iowa State University. SA-9. Feb. 1996.

Vastgötmodellen: Sweden's Sustainable Alternative For Swine Production. M.S. Honeyman. American Journal for Alternative Agriculture. V10(3) 1995.

New Farm Magazine on line. A great resource on alternative hog production found on their Pig Page. www.newfarm.org

New England Livestock Alliance has pages on pastured pig production. www.nelivestock.org

The Lopez Community Land Trust in Washington State has developed a USDA inspected mobile slaughter facility. Learn about their experiences.

www.lopezclt.org/sard/mpu.html



Overview of Swine History

Pigs evolved in the wild, primarily living as a forest dwelling animal. The old European domesticated swine were derived from these wild ancestors. Early on, herds were kept on pastures or forests and only moved into enclosures for fattening. The Far East domestication of swine developed from a separate ancestral line. These oriental pigs were smaller than their European cousins, having shorter legs but having a higher reproductive capacity. The modern breeds were derived from various crosses coming from these “old world” species.

Pigs are very social animals and maintain inherent behaviors from their bygone days in the wild. Social structure, when permitted, consists of small herds headed by a

dominant female with offspring and several subordinate females and offspring. Boars are not associated with these matriarchal herds except during breeding time. Boars remain living solitary or in young bachelor herds.

Pigs can be clean and very curious animals. Pigs will eat in one area, sleep in another, and deposit waste in a third. Their mobility is focused by food searches. However, pigs enjoy play activities and social interactions. Piglets often play with litter mates, juveniles, and with adults. The young will explore, investigate, and play with new objects or “toys” such as balls, chains, or rubber hoses hung from overhead.

Dominance by female(s) over subordinates is often displayed to various degrees. Behavior can range from body posturing, vocalizations, and nudges to repeated bitings and attacks. The degree to which this behavior plays out seems to be a function of personal space (enough room versus overcrowding), familiarity or family ties to individuals, and availability of quality feedstuffs. Pigs are tactile animals. Touching each other or being in contact as in greeting, play, or sleeping is often seen.

Generally, sows are nurturing mothers. An inherent behavior of pregnant females prior to farrowing is nest building. With materials like straw, corn stalks, or other plant materials, females will carry items and create an individualized secluded spot to give birth. Good mothers keep an eye on their young and can be very gentle when they lie down with their piglets so as not to crush any of them.

The negative behaviors exhibited by pigs in confinement seem to be attributed to several factors. Gestating sows confined to crates without any room to even turn around are often seen gnawing on bars, acting aggressively, or observed doing repetitive body movements like head bobbing or head weaving.

Overcrowded, underfed, or nutrient deficient animals can display aggressive behavior such as tail biting, chewing, or cannibalism. Introducing new pigs from outside

family sources into a social group can also cause aggressive behavior. This usually only lasts during the dominance setting time.

Open just about any hog production book and read the chapter titles. The headings list the topics such as breeds, feed and diet requirements, water and feeding systems, management of sows, piglets, or boars, disease management, weaning, and mating. Addressing the natural behavior of the animals isn't given much space, if even at all mentioned. How these animals behave is very relevant to sustainable production practices. Working with an understanding of an animal's natural behavior can be quite beneficial both to the animal, and, in the long run, to farmers trying to raise the animal.

One of the pig's major behaviors is rooting. Since pigs are omnivores, they will eat a variety of items. On pastures, they will eat legumes, grasses, seeds, and insects. Adequate nutrition, rich in minerals, may reduce the severity of rooting thereby reducing the destruction of the pasture. Careful management of pasture following intensive grazing procedures can also protect the quality of the pastures as well.

Taking advantage of the pig's natural behavior can reduce costs in grain supplements through a managed rotational grazing plan, pasture hut farrowing, or with the Swedish style deep bedding system allows for plenty of room for the animals. They keep themselves and the piglets cleaner. Reduction of disease and the elimination of use of subtherapeutic antibiotics mean more than a double savings for the farmer. Sick animals have poorer weight gains. Healthier animals also mean a better quality of animal going to market.

Yes, changing the production standards means a major shift, greater management intensity, and requires a shift in labor from mechanization and waste disposal to more hands-on with individual animals along with integration of the animal production with the rest of the farm. Examples of this can be seen in pasturing where the pastures are part

of the rotation plan of the cropping system of the farm. Another approach would be in the deep bedding system. The straw used as deep bedding gets mixed with the manure and urine. This starts the composting process. After the composting process is finished, the nutrient rich material can be spread out for fertilizing crop land. Grains or corn can be grown on the land and the straw or corn stalks can be harvested after the grain is taken off and then used again as bedding for the animals. Some farmers fence off sections of crops and let their hogs graze crop land taking the feed right off or letting them lose after the crop has been taken off to root about for what the harvester dropped.



DEEP STRAW SYSTEMS

It has been often said by Ag. industry and agricultural institution nay-sayers that too much regulation will spell doom for the nation's hog farmers. This statement may be true for concentrated animal feeding operations but not for the small to midsized family farm. It's happened before.

In the 1980's, Sweden's government instituted strict regulations for animal production on farm. Banned were subtherapeutic antibiotics for livestock. Environmental laws forced changes in hog operations. Confinement crates were removed. Farmers returned hogs into group settings. The farmers turned to deep straw bedding as a way for

solid waste manure handling. In the process, it was discovered that natural composting was taking place in the straw and manure mix releasing heat. Economical hoop houses were built. They were low cost, easy to maintain, and could have multi-functional uses.

Farmers who made the switch in Sweden and in the US acknowledge the benefits. The results are less financial risk for the farm family, the animals were directly managed rather than heavier emphasis on machinery, and improved health of the people working. The animals had access to thick bedding, space to move about and explore, and the animals had more access to sunshine and fresh air. Odors were reduced. Water quality wasn't jeopardized since compost was created rather than lagoon waste. The resulting environmental improvements and freedom to farm was good for the community. The quality of life for the farm family increased.

Links: Hooped Shelters for Hogs www.attra.org/attra-pub/hooped.html

Conservation for Agriculture's Future – Experiences with a Swedish Deep-Bedded Swine System

www.ctic.purdue.edu/Core4/Nutrient/ManureMgmt/Paper38.html

Swine System Options for Iowa 1999: Conference Proceedings Leopold Center for Sustainable Agriculture 209 Curtiss Hall Iowa State U. Ames, IA 50011-1050

Sustainable Agriculture: Taking Stock, Moving Forward Leopold Center for Sustainable Agriculture 209 Curtiss Hall Iowa State U. Ames, IA 50011-1050

University of Minnesota Extension Service #07736-BU Designing Feeding Programs for Natural and Organic Pork Production 612-625-2207

www.extension.umn.edu/distribution/livestocksystems/D17736.html

ATTRA: considerations in Organic Hog Production

www.attra.org/attra-pub/PDF/omhog.html

DEEP BED FARROWING

The deep straw method is adaptable to farrowing. Rather than tight crates on bare floors, sows are given greater room in the deep straw. Some farmers are using specially designed boxes for farrowing to give the sows extra privacy and more protection for the new born piglets. The farrowing box design is taken from the Swedish system and some farmers have redesigned them to meet specific needs or observations. Deep bed farrowing works well during the cold winter months.

Bred sows are housed together, each with their own box and plenty of bedding material to build nests. Sows can have access to the group environment but can go into seclusion to give birth and for lactation. Piglets are protected in the boxes until the sow is ready to introduce them to the herd. With this system, stress is reduced. The deep straw bedding can be rooted in, and by group housing sows together, it helps encourage them to go into heat relatively close together. During the spring, the crates can be moved out into pastures and used for warm weather farrowing.

References: ATTRA – Swedish Deep Bedding Group Nursing System call for copy 1-800-346-9140

Leopold Center – Iowa State University Sustainable Agriculture – Swine System Options for Iowa. Iowa State University Cooperative Extension pub # SA-12 contact Mark Honeyman 515-294-4621 honeyman@iastate.edu

Hoop Structures for Gestating Swine. Agricultural Engineers Digest. AED 44 Feb. 1999. Midwest Plan Service. Iowa State U. order: www.mwpsHQ.org



HOOP HOUSING FOR FEEDER PIGS

Hoop houses, like the name implies, gives the appearance of a greenhouse structure. They have been built using varying materials for covers. Basically, they are earth floors covered in deep bedding. Concrete pads are sometimes used where the feeders will sit. The Quonset hut style construction has metal arches and 3-4ft side walls made of wood. The covering can be tarp, fiberglass, or sheet metal. The front and back ends are often open with gating. Some farmers who live in areas that have harsh winters have put up a covering material or roll up doors for one or both end walls. When sighting these structures, it is good to think of prevailing winds and exposure to winter sun.

Based on the square footage inside, these hoop structures can hold up to 250 hogs with ample bedding. Costs of construction are usually less than \$16,000. This translates to be about \$64 a hog. If more than one group of hogs use the facility in a year, the cost decreases.

The natural winter heating of these structures comes from several sources. One is the composting of the manure/bedding mix. Hogs, if given the space, will deposit their waste away from where they sleep and eat. The deep bedding acts as insulation where pigs will protect themselves from the cold. Pigs also will sleep against each other thereby also providing each other body warmth.

With the natural air flow of the structure, expensive ventilation is not needed. There is no worry of buildup of toxic gases as can be found with house and pit systems. There will be no need for back up generators would have run the ventilation equipment in case of power loss. Not having these expenditures saves the farmer money.

Links.

Resources:

Hoop Structures for Grow-Finish Swine AED 41. April 1997. and, Hoop Structures for Gestating Swine AED 44 Midwest Plan Service Iowa State University. 515-294-4337 \$4 www.mwphq.org

Iowa State University: Economics of Finishing Pigs in Hoop Structures and Confinement; A Summer Group

www.extension.iastate.edu/ipic/reports/00swinereports/asl-678.pdf

Iowa State University: Two Year Summary of the Performance of Finishing Pigs in Hoop Structures and Confinement During Winter and Summer

www.extension.iastate.edu/ipic/reports/00swinereports/asl-681.pdf

Pork Industry Handbook: Managing Market Pigs in Hoop Structures. PIH 138
Aug. 1999. Order at www.extension.iastate.edu/Publications/PM1420.pdf

Hooped Structures for Hogs. L. Gegner. ATTRA. June 2001. www.attra.org

OUTDOOR PIG PRODUCTION AND PASTURING

The practice of pasture use for pigs is not new. Go back to livestock production books 40-50 years ago and pasturing was common practice for generations. A pasture does not mean just any fenced in area. Good pastures start with field preparation, selection of forage species, planning for fencing, portable water sources, and feeders. Keeping good pastures productive, requires good management skills. Pasture utilization requires planning.



Possibly the single most important issue about pastures is knowing when to move animals to avoid destruction of the plant base. This requires daily monitoring. Pigs can be pretty hard on pastures if they are left to themselves. When too much rooting occurs, excessive rains muddy up the ground, or drought slows regrowth of forages, animals must be moved to prevent permanent damage. The killing of forages opens opportunities for weeds to move in. Training the hog to move to new paddocks of pasture can be accomplished.



Daily moving of waterers and feeders can reduce damage when the animals congregate at these sites. Establishing a thick mixed species planting of forages is a good start. Knowing what type of forage plant species do well in your area is necessary. Using a mixture of grasses and legumes adapted for normal conditions plus having several species that can tolerate wet or droughty conditions can be good insurance.



Planning on moving the animals every 1-3 days will actually be determined by the carrying capacity of the forages (how many animals can feed on the forage without problems), time of the year, and weather conditions. The seasons of the year will make a difference on how quickly grazed pasture will regrow. Enough pasture will be necessary to raise the animals over a period of months.

The overall field will then have to be divided up to accommodate the regular movement of animals. The use of electric fencing has been used with great success by

farmers who have “trained” their pigs to the fence. The fence can be easily moved and instead of building fences around many acres, electric fencing can be used only where the animals are for that day.

Parasite problems have been commonplace with hogs. On the pasture, reinfection can be a problem if the animals are left too long on a particular paddock of pasture. Reintroduction can also occur if hogs return to a previously grazed paddock too early. Paddocks should be left untouched by grazing for at least 24-28 days to break up the parasite cycle. One strategy used by several farmers when grazing livestock is to follow the animals with poultry. The birds scratch and scatter manure piles looking for hatching insects and undigested grain. The scattered manure then decomposes quicker. The nutrients are cycled over a broader area and utilization by the forage plants would be more extensive.

The pastures used by livestock can be part of a whole farm plan. A rotation plan that takes into account the soil building characteristics of a mixed grass/legume stand can be very beneficial to crops. The manure will supply nitrogen and phosphorus that will be held in place by the forage plants. The legumes will also add nitrogen. The taproots of the legumes will pull up nutrients from deeper in the soil while breaking up compaction. The thick mass of grass roots will provide aeration and greater water holding capacity as they break down after the fields are prepared for cropping.

Links: Pigs on Pasture – Taking the Green Approach to Hog Farming
www.eap.mcgill.ca/MagRack/SF/Winter%2091%20E.htm

Forages for Swine
<http://muextension.missouri.edu/xplor/agguides/ansci/g02360.htm>

Information on the use of electric fences: Gallagher Power Fence Manual 10th edition. www.gallagher.co.nz

Prescribed Grazing Management to Improve Pasture Productivity in New York
<http://wwwscas.cit.cornell.edu/forage/pasture>

Sustainable Pasture Management www.attra.org/attra-pub/sustpast.html

Nutrient Cycling in Pastures www.attra.org/attra-pub/nutcycle.html

Assessing the Pasture Soil Resource www.attra.org/attra-pub/pastsoil.html

Rotational Grazing www.attra.org/attra-pub/rotategr.html

Introduction to Paddock Design and Fencing for Controlled Grazing
www.attra.org/attra-pub/paddock.html

Sustainable Soil Management www.attra.org/attra-pub/soilmgmt.html

Ohio State University 1999 Feeder Production budget Pasture System

Ohio State University 1999 Farrow to Finish Production Budget Pasture System
<http://ohioline.osu.edu/e-budget/99farr-p.html>

North Dakota State University Hog Feeding Trials on Concrete and Pasture –
1965 www.ag.ndsu.nodak.edu/dickinso/research/1965/hog65.htm

Pork Industry Handbook: Outdoor Pig Production. PIH 145. order at
www.extension.iastate.edu/Publications/PM1420.pdf .



Pasture Farrowing

Making the most out of pasture farrowing requires good management practices. Farrowing on pasture allows the sow and piglets room, access to fresh air and sunshine, benefits their natural behavior, and allows for waste to be distributed over vegetated land. The animals benefit and the production costs are lower.

Farmers and researchers alike have demonstrated that with good management practices and a well planned design of operation, costs of production are significantly reduced. The pigs are less stressed, many health aspects in the herds would be improved, and agronomic and environmental benefits for the land will increase.

Numerous farmers have made use of their cropping systems and animals production into an overall farm rotation plan. Raising crops such as oats sown with clover, barley sown with field peas, corn, and alfalfa can be used as part of the animal system. An example would be a legume-based pasture is where the animals initially start out in spring. Oats are harvested to be used as feed in the fall. The underseeded clover is allowed to grown for next year's pasture.

Several pasture paddocks are in place to relieve the grazing pressure as well as breaking cycles of diseases or parasites. As determined by the paddock forage quality, paddocks are used in a rotational cycle. Allowing more than 28 days between pasture paddock use can reduce parasite loads. During this time, the forage has time to regenerate. If the height of the plants become too tall for optimum use by the hogs, mowing may be required. Depending on the animals, the ideal height of the forage is about 4-8 inches tall. Grazing down the forages should be allowed until the height of the forage is no less than about 2 inches. Damage to the pasture must be avoided.

The common practice for grazing hogs is to use nose rings. The nose rings prevent the animals from destroying the forage from rooting. Some farmers have

commented that nose rings are not necessary if the animals have a nutritionally balanced diet with adequate minerals. Personal experience will have to be relied upon along with intensive management practices and observations.

Links: Pastured Pigs on the Gunthorp Farm

www.grassfarmer.com/pigs/gun1.html

The Effects of Outdoor Farrowing Hut Types on Prewrite Piglet Mortality in Iowa. M.S. Honeyman and W. B. Roush. American Journal of Alternative Agriculture. V17(2) 2002.

The Real Story: Farmers' Personal Experiences

This feature will highlight the stories of farmers that have made the decision to move to alternative humane sustainable production. It is one thing to simply list methods in cookbook fashion or simply talk about alternatives and paradigm shifts. The real stories are the ones told by the farmers themselves.

As time goes by, we will spotlight family farms reclaiming stewardship to the land and animals. These stories tell of the “how’s and why’s”, the trials and errors, the ongoing successes, the importance to their quality of life, and the affects on the animals.

Links:

Pastured Pigs on the Gunthorp Farm www.grassfarmer.com/pigs/gun1.html

Minnesota Pork Producers Assoc. Alternatives
www.mnpork.com/producer/alternative/2002.php3

Meet the Farmers of Four Winds www.msmarket.org/news_fourwinds.htm

The Land – Focusing on Alternative Swine Systems

www.the-land.com/100199/story2.html

Conservation for Agriculture's Future – Experiences with a Swedish Deep-Bedded Swine System

www.ctic.purdue.edu/Core4/Nutrient/ManureMgmt/Paper38.html

Marketing

What comes first, the marketing or the product? This question is as old as the proverbial chicken and the egg fable. How can you create a product without a market and how do you find a market without the product? The answer is both. Identification of the markets (emphasis on the plural) is a crucial first step. Even without a product in hand doing some market research before one starts is vital.

There are many questions to pose and answer. The first to keep in mind is what is the goal or vision of this enterprise? Write this down on the top of your page for future reference.

What kind of product do you want to produce? Where can the products be sold? Search the area and see if that exact product is already there. If it isn't there, are there other products similar to what you want to produce? If there are products out there, how are they similar and how are they different? Who makes them and where do they come from? Are customers purchasing these products? What is the price?

Buy some and try it. How does it taste? What is the quality? Can you do better? How much better? What would your estimated costs be? How much profit do you want to make? How does the price you would have to sell your product compare to the

competition? How will your product be distinguishable from the competition? How will you advertise and educate the buyers of your product?

How will you process, package, and label your product? Can you transport your product to market on time, as promised, regularly? Can you meet projected demand weekly, monthly, seasonally, or yearly as needed?

These and other questions, once answered will form the basis for a business plan. The business plan will be a guide in determining the profitability of the enterprise. As the business is written, does the plan stay true to the goals or vision you have established in the beginning? If it does not, then either the enterprise won't fit what you really want, or your vision will have to change. Will the enterprise take you where you want to be in 5, 10, or 25 years?

A business plan can follow a template found in many books and guides on business development. The local library usually carries several different titles. Assistance can also be found from the Small Business Administration, Cooperative Extension, or Rural Economic Development offices. If you ever have to go to bank for a small business loan, they will require a business plan before offering assistance. Walking in with one in hand is more impressive to them.

After the business plan is completed, a marketing plan will be needed. This will be the plans necessary to get your product sold. Whether the product is direct marketed to customers or if the products are sold to wholesalers or in a retail situation, knowing how to get there is important.

Marketing will be the hardest work imaginable. Some people take to it naturally. Some people develop knack for it. Other people will loathe it. It all centers on communication, creativity, and motivation. Where you fit in to the art and science of marketing will in part determine the kind of marketing you end up doing well with.

What is real important to consider is to investigate what other farmers have attempted and accomplished. Look to how they identified markets. Look at their product line and how it fits market demand. Notice the approaches taken to communicate with the customers. How are the customers educated to that product?

Large companies hire advertising firms to get publicity for their product. This publicity informs and “educates” the consumer. The education of your customers has to come from you through some form of communication. Be receptive to feedback about your proposed product and once you are marketing the product continue to listen to the customer. Part of the education of the customer is to get them to understand what it takes for you to produce your product and why your product has value. Your farm and product has a story. Customers want to hear a story.

Marketing fruit and vegetable crops is easier to do than meat and other animal products. Meat poses difficulties because of the added concern over food safety issues. Regulations by county, state, and federal agencies have to be followed when selling animal products.

There are another series of questions that must be answered when thinking about selling your own meat products. Where will the processing take place? Will the processor make the cuts you want for your marketing needs? Is the processor state and/or federally inspected? Can your meat be distinguished from others while at the processors (what you bring there better be the same animal you bring out)?

What are the meat selling regulations in your area and in the area the product is to be marketed in? Finding this information will be a worthy quest fraught with frustration. Don't accept the word of anyone unless it is in writing from the state. There have been many instances when farmers have called state agencies to find out information, followed

what they were told, only to discover when they actually tried to sell their product, that the information they had was not correct and they were barred from selling.

When searching for markets, don't exclude any opportunities right around where you live. Friends, neighbors, church congregations, schools, nursing homes, and other community locations should be approached. The more you can sell locally, the less cost will be lost from transportation. Also, the greater the impact you will have building up a local client base.

Links: ATTRA Alternative Marketing of Pork

www.attra.org/attra-pub/altpork.html

Sustainable Agriculture Network Profitable Pork: Strategies for Hog Producers

www.sare.org/bulletin/hogs/index.htm

Marketing Strategies for Farmer and Ranchers

www.sare.org/market99/index.htm

Important Web Sites and Resources:

Appropriate Technology Transfer for Rural Areas – www.attra.org Many publications on sustainable agriculture topics written for farmers.

Profitable Pork: Strategies for Hog Producers – Resources

www.sare.org/bulletin/hogs/resources.htm References and resource links for hog producers

Sustainable Agriculture Network www.san.org Publications on sustainable agriculture.

Consumer Preferences, Premiums, and the Market for Natural and Organic Pork: Locating a Niche for Small-Scale Producers. 2001. W. Parker Wheatley. University of

Minnesota – The Swine Center Alternative Swine Production Systems Program.

www.factoryfarm.org/reports-hogstudies.html

Alternative Pig Specialists:

Lance Gegner. Appropriate Technology Transfer for Rural Areas –

www.attra.org

Dr. Charles Talbott. North Carolina A&T State University Greensboro, NC

336-334-7536.

New England Livestock Association. www.nelivestockalliance.org

American Livestock Breed Conservancy. www.albc-usa.org