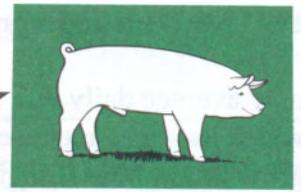




MSU Pork Quarterly

"Information for an industry on the move!"



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The 1997 Michigan Genetic Improvement Program

By: Dr. Ronald O. Bates, State Swine Swine Specialist, Michigan State University

The Michigan Genetic Improvement Program (MGIP) is a unique program that is sponsored by Michigan Livestock Exchange (MLE) and Michigan State University Extension. It provides swine producers the opportunity to identify pigs on the farm and have lean gain per day on-test estimated. Lean gain per day on-test is a good indicator of the ability of a pig to efficiently convert feed into muscle on a timely basis.

Farms that participated in this program had pigs identified with a visual ear tag provided by the program. These pigs were weighed on the farm in late August and September. Pigs were collected on December 1st at MLE buying stations to determine final weight. Pigs were then moved to the Battle Creek MLE station to have tenth rib backfat and loin muscle area estimated with Real-time or B-mode ultrasound. Pigs were then transported to Routh Packing, Sandusky, Ohio, for further carcass data collection and have a health evaluation completed. All information was compiled and returned to participating producers.

This program allows participants to have lean gain per day on-test estimated under their farm conditions. Participants also had the opportunity to determine how their pigs compare with other Michigan pork producers for lean gain as well the other performance, carcass and health characteristics reported.

For 1997, 208 pigs were slaughtered from 17 Michigan farms. Of those, 179 pigs completed the lean gain on-farm test portion of the program. The top

25 pigs for lean gain are listed in Table 1. However to be listed in the Top 25, pigs had to have the following minimum qualifications; 1) less than 1.0 in. of backfat at the tenth rib, 2) more than 5.0 sq. in of loin muscle area, 3) higher than 50% lean, and 4) weigh 90 lbs or less at the beginning of gain test. Johanns Farms, Grass Lake, MI had the top pig in this year's Top 25 (Table 5).

Program averages for 1997 are reported in Table 1. Tenth rib backfat and loin muscle area were ultrasound estimates while the remaining carcass information was collected at the slaughter plant. Tenth rib backfat and loin muscle area were adjusted to a 250 lb basis. The calculation formulas used in the estimation of lean gain per day on-test were those used in the 1995 MGIP program and recommended by the National Pork Producers Council.

Pigs in the 1997 MGIP were dramatically improved over those from previous years (Table 2). Average daily gain improved by .05 lbs per day while pigs were .1 inch leaner than 1996. Loin muscle area was also .43 sq. in. larger which resulted in a 1.3% increase in percent lean compared to the previous year.

The data were also summarized by sex (Table 3) and well as all-in/all-out (AIAO) status (Table 4). As expected barrows did grow faster and were fatter than gilts. Gilts had greater loin muscle area with a higher estimated percent lean than barrows. When the data were summarized by AIAO status, **Cont. pg.2**

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This newsletter is edited by:
Tim Johnson
West Central Swine Agent
(616-846-8250) johnsoti@msue.mus.edu

1997 MI Genetic Improvement Program cont...

only average daily was significantly different. Pigs which had been managed through an AIAO system did grow faster. Interestingly enough though the trend for pigs managed AIAO suggests that they may be leaner, have a higher lean gain and a higher percent lean than those in continuous flow management

As Michigan pork producers work toward improving their herds for lean gain they must use seedstock that have been selected for improved backfat as well as growth rate. Using reports such as the national sire

summary, published by the National Swine Registry, will allow pork producers to determine seedstock sources whose genetic merit is above average for lean growth as well maternal performance. For assistance in improving lean gain in your herd contact your local AOE Swine Agent.

The 1997 Michigan Genetic Improvement Program has been successfully completed. Plans are underway for the 1998 program. If you wish to participate in this program please contact your local AOE Swine Agent or call:

Ron Bates, State Swine Specialist at 317-432-1387.

Table 1: Performance Averages for the 1997

| | |
|-------------------------------------|-------|
| Average Daily Gain, lbs/day | 1.90 |
| Lean Gain per Day on Test, lbs./day | 0.734 |
| Adjusted Tenth Rib Backfat, in. | 0.89 |
| Adjusted Loin Muscle Area, sq. in. | 6.19 |
| Dressing Percent | 74.00 |
| Percent Lean | 51.98 |

Table 3. Performance Averages By Sex

| Item | Barrows | Gilts |
|------------------------------------|--------------------|--------------------|
| Average Daily Gain, lbs/day | 2.02 ^a | 1.86 ^b |
| Lean Gain per day on Test, lbs/day | 0.745 | 0.75 |
| Adjusted Tenth Rib Backfat, in. | 0.95 ^a | 0.84 ^b |
| Adjusted Loin Muscle Area, sq. in. | 5.96 ^a | 6.32 ^b |
| Dressing Percent | 73.7 | 73.5 |
| Percent Lean | 50.23 ^a | 52.75 ^b |

^{ab} Means within a row with different superscripts are different.

Table 2. Yearly MGIP Summary

| Year | No. Head | ADG | 10th Rib Fat | Loin Muscle Area | Length | Lean % |
|------|----------|------|--------------|------------------|--------|--------|
| 1997 | 208 | 1.87 | .80 | 6.13 | 32.3 | 52.0 |
| 1996 | 285 | 1.82 | .90 | 5.70 | 31.3 | 50.7 |
| 1995 | 297 | 1.85 | .95 | 5.90 | 31.6 | 50.8 |
| 1994 | 245 | 1.75 | .96 | 5.82 | - | 56.6 |
| 1993 | 265 | 1.68 | .99 | 4.68 | 31.7 | 53.0 |
| 1992 | 322 | 1.73 | 1.16 | 4.69 | 31.2 | 52.5 |
| 1991 | 285 | 1.76 | 1.10 | 4.80 | 31.5 | 52.7 |
| 1990 | 290 | 1.60 | 1.60 | 4.90 | 31.6 | 52.6 |

Table 4. Performance Averages By all-in/All-out (AIAO) Status

| Item | AIAO | Not AIAO |
|------------------------------------|-------------------|-------------------|
| Average Daily Gain, lbs/day | 2.05 ^a | 1.86 ^b |
| Lean Gain per Day on Test lbs/day | 0.77 | 0.72 |
| Adjusted Tenth Rib Backfat in. | 0.84 | 0.95 |
| Adjusted Loin Muscle Area, sq. in. | 6.15 | 6.13 |
| Dressing Percent | 72.97 | 74.24 |
| Percent Lean | 51.83 | 50.98 |

^{ab} Means within a row with different superscripts are different.

Table 5. The 1997 Michigan Genetic Improvement Program Top 25

| R a n k | Farm | Tag Sex | Sex | Avg. Daily Wgt. | Carcass Wt. | Dressing Percent | Tenth Rib Fat | Adj Tenth Rib Fat | Loin Muscle Area | Adj Loin Muscle Area | Last Rib Fat | Carcass Length | Percent Lean | Lean Gain |
|------------------|--------------------------|------------|-----|-----------------------|----------------|---------------------|---------------------|-------------------------|------------------------|-------------------------------|--------------------|-------------------|-----------------|--------------|
| 1 | Johanns Farms | 348 | G | 3.02 | 159.90 | 72.68 | 0.80 | 0.912 | 6.49 | 7.01 | 1.3 | 30.6 | 54.58 | 1.243 |
| 2 | Bruce & Sandra Blonde | 19 | B | 2.36 | 216.00 | 73.22 | 0.94 | 0.780 | 8.45 | 7.61 | 1.5 | 32.5 | 54.06 | 0.952 |
| 3 | Blue Wing Farm | 251 | G | 2.12 | 191.20 | 73.54 | 0.49 | 0.471 | 7.11 | 6.94 | 1.2 | 33.1 | 57.09 | 0.930 |
| 4 | Bruce & Sandra Blonde | 27 | B | 2.41 | 213.40 | 73.59 | 0.96 | 0.812 | 7.25 | 6.60 | 1.0 | 34.0 | 51.83 | 0.929 |
| 5 | Blue Wing Farm | 255 | G | 2.05 | 191.50 | 75.10 | 0.62 | 0.608 | 7.19 | 7.10 | 0.9 | 33.8 | 55.96 | 0.904 |
| 6 | Blue Wing Farm | 264 | B | 2.05 | 196.02 | 73.97 | 0.56 | 0.524 | 6.80 | 6.56 | 0.8 | 33.7 | 55.48 | 0.876 |
| 7 | Bruce & Sandra Blonde | 24 | B | 2.24 | 202.30 | 72.25 | 0.78 | 0.686 | 6.72 | 6.26 | 1.3 | 34.2 | 52.93 | 0.864 |
| 8 | Daniel Hafner | 199 | G | 2.13 | 203.90 | 72.82 | 0.76 | 0.677 | 7.40 | 6.89 | 1.6 | 33.6 | 54.33 | 0.864 |
| 9 | Daniel Hafner | 208 | B | 2.17 | 218.10 | 75.21 | 0.94 | 0.795 | 7.23 | 6.58 | 1.4 | 34.3 | 51.79 | 0.861 |
| 10 | Blue Wing Farm | 260 | B | 2.06 | 181.50 | 71.18 | 0.49 | 0.479 | 6.29 | 6.21 | 0.8 | 33.8 | 56.06 | 0.850 |
| 11 | Daniel Hafner | 198 | B | 2.09 | 205.70 | 74.80 | 0.82 | 0.736 | 6.94 | 6.54 | 1.3 | 33.3 | 52.82 | 0.847 |
| 12 | S & S Swine Farm | 296 | G | 1.91 | 204.90 | 77.32 | 0.85 | 0.801 | 7.91 | 7.63 | 1.3 | 32.8 | 54.42 | 0.847 |
| 13 | Blue Wing Farm | 256 | G | 2.03 | 190.20 | 74.59 | 0.85 | 0.833 | 7.21 | 7.12 | 1.3 | 32.5 | 53.82 | 0.843 |
| 14 | S & S Swine Farm | 288 | G | 1.82 | 197.10 | 75.81 | 0.54 | 0.519 | 7.61 | 7.43 | 1.0 | 32.6 | 57.20 | 0.842 |
| 15 | S & S Swine Farm | 292 | G | 1.81 | 196.50 | 77.06 | 0.54 | 0.529 | 7.19 | 7.10 | 1.3 | 32.9 | 56.41 | 0.840 |
| 16 | Blue Wing Farm | 263 | B | 2.12 | 193.00 | 74.23 | 0.89 | 0.851 | 6.57 | 6.41 | 1.3 | 33.0 | 52.00 | 0.835 |
| 17 | Blue Wing Farm | 265 | B | 2.12 | 191.50 | 72.26 | 0.58 | 0.543 | 5.69 | 5.49 | 0.6 | 34.4 | 53.32 | 0.832 |
| 18 | Daniel Hafner | 202 | G | 2.00 | 197.80 | 74.64 | 0.82 | 0.773 | 7.30 | 7.04 | 1.3 | 33.0 | 53.89 | 0.831 |
| 19 | Keith Blonde | 173 | G | 1.88 | 186.50 | 76.12 | 0.69 | 0.704 | 6.77 | 6.85 | 1.1 | 31.0 | 54.72 | 0.8222 |
| 20 | Blue Wing Farm | 259 | B | 2.26 | 191.60 | 69.67 | 0.80 | 0.718 | 6.14 | 5.78 | 0.9 | 33.7 | 52.07 | 0.820 |
| 21 | Albright Farms | 161 | B | 2.06 | 212.20 | 75.79 | 0.76 | 0.669 | 6.10 | 5.68 | 1.0 | 34.0 | 51.54 | 0.820 |
| 22 | Bruce & Sandra Blonde | 20 | B | 2.07 | 188.70 | 72.58 | 0.62 | 0.593 | 5.87 | 5.73 | 1.1 | 33.5 | 53.43 | 0.817 |
| 23 | Blue Wing Farm | 252 | B | 2.20 | 189.80 | 71.62 | 0.78 | 0.730 | 5.57 | 5.37 | 0.8 | 35.0 | 51.18 | 0.814 |
| 24 | Blue Wing Farm | 261 | B | 2.02 | 183.20 | 71.84 | 0.47 | 0.460 | 5.46 | 5.39 | 0.8 | 34.5 | 54.39 | 0.810 |
| 25 | Daniel Hafner | 196 | G | 1.86 | 190.70 | 76.28 | 0.85 | 0.850 | 7.59 | 7.59 | 1.0 | 33.8 | 54.57 | 0.810 |

Who Cares About Pork Quality?

By: Marty Ropp, Central Michigan Swine Agent

Packers, processors, retailers, researchers and most importantly consumers do. As the pork industry matures, a more functional relationship is developing between players from one end of the pork chain to another. There is little doubt that we are being scrutinized as producers of food and not just producers of pigs. Product quality and wholesomeness are becoming increasingly examined and whether producers see it in their checks or not, the effects are there. It has been estimated that inferior pork quality may cost the pork industry between 75 and 150 million dollars each year. Part of that lost income directly effects the price paid to producers for hogs.

The question now is how to pass those premiums and or losses on to the appropriate producers of higher and lower quality pork. Today that burden falls on packers, because unfortunately until there is a direct monetary relationship between pork quality and prices paid, no real improvements will be made. Look at the example of lean value. When premiums and discounts were finally offered based on carcass cutability, large industry changes were realized.

Even now wholesale product from packers is being sold at a premium or discount based on meat quality particularly for export markets and these differentiated values will soon be passed on more directly to producers. Research as to how pork quality will be measured in packing plants is ongoing and a priority for forward thinking packers. The potential for measuring light reflectance, pH, electrical conductivity, water holding capacity and other traits is being researched and once a cost effective system that can be implemented at line speed is developed, the premiums and discounts will be there too. Pork producers need to be involved with pork quality improvement starting now and help provide leadership toward the adoption of these measurement technologies and not take a wait and see attitude toward their future pricing systems.

Results of the 1997 Pork Quality Project give both a representative description of some of our industry

concerns regarding pork quality and addresses the value of some of the potential pork quality measurement tools available. Consistent with previous industry samples, the breakdown by quality category was 7% PSE (Pale, Soft and Exudative), 28% RSE (Red, Soft and Exudative), 45% RFN (Red, Firm and Non-Exudative) and 20% DFD (Dark Firm and Dry). It is important to understand that our biggest quality problems are with the PSE and RSE categories because of the low pH and subsequent low capacity to hold water (Exudative). Particularly in the loin and the larger of the ham muscles these conditions lead to significantly reduced juiciness and palatability for fresh meats and higher drip losses in processing. Don't be confused by the DFD description, dry actually refers to the surface of the uncooked lean surface which translates to a juicier prepared product.

The other important information that came from this study suggests that we can classify pork carcasses with reasonable accuracy to fit into at least three of the four groups at a relatively low cost. In this study that cost was 7 cents per carcass for measurement and 8 cents per carcass for documenting and reporting this information to producers. When you consider the true difference in carcass value determined by variation in meat quality traits, that figure is extremely small. This type of information will in the future provide the basis not only for premium and discount rates but also for helping the industry produce a more consistent and higher quality product.

We know that producers can implement procedures and technologies that have a positive effect on ultimate pork quality. These may include using genetics that are proven superior and selected for meat quality traits, changing loading and transportation procedures, nutritional factors, etc. Packers too may need to change the pre and post slaughter handling procedures that we know increase the percentage of poorer quality product. Processing may need to specialize more by quality category as well as demand and pay a difference for the product that best fits their

Pork Quality cont...

system. Finally, consumers must be involved with greater education, not only in the recognition of quality pork but in with knowledge of preparation so that a quality product becomes a quality eating experience, translating to greater acceptance and

purchases of pork products. The important components for promoting higher quality pork will be the increase in information and communication up and down the pork chain. Hopefully, the results will be a concerted effort to produce a more consistent, higher quality pork food.

Youth Show Operations Guidelines

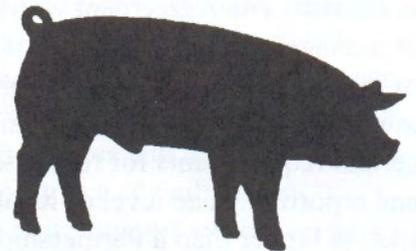
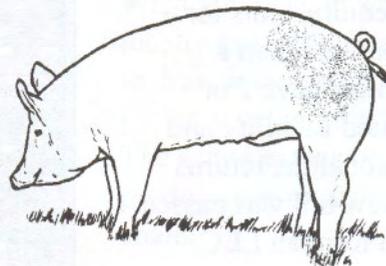
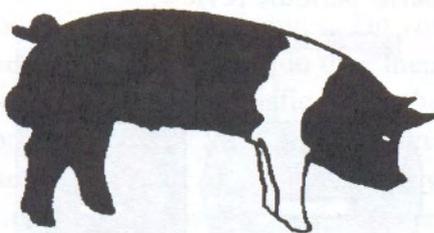
By: Brian Hines, Southeast Swine Agent

The season of fun and experience is coming around the corner. The current planning for the fair book has been done and it is time to wind up the small details. The MSU Swine team has taken time to write up a guide to make the planning and implementation stages for the swine show at the county fair easier. The guide gives ideas in class set up, ring set up, pig flow, criteria for placings, carcass show operations, health considerations, ethics, and fair official responsibilities. This guide will have rules listed for specific sections that other fairs use throughout the state. The diagrams and literature should provide an easy to use reference manual to ensure a fun but efficient fair.

The section on show day operations will cover ideas on ring set up and evaluating the pig flow to minimize potential traffic jams getting the pigs to and from the ring. It also will detail the suggested arrangement of the ring and the personnel needs during the day and what their responsibilities will be. The outline on criteria for placings gives light to what the pig should look like to deserve a blue, red, or white ribbon. The other part is a list of commonly used terminology by judges so the youth can understand the reason for their animals placing. The health issues covered provide the state of Michigan's

rules and regulations, with recommendations to insure a healthy environment at the fair. The Ethics dimension is an excellent addition to many fairs and offers a look into sportsmanship and a handling procedure for problems that may arise. Another part to the guidelines is a step by step outline on how to conduct a carcass contest both "live on-foot" using ultrasound and actual on the rail contest. It details how to incorporate gain with carcass merit or strictly on the merits of the carcass. There are other sections of the handout that cover every facet of conducting the swine show in your home county.

The Michigan Pork Expo Educational Sessions will be the first draft presentation of this youth show ring operations guidelines. The presentation will be on Friday, Feb. 6 at 3pm. This is the preliminary unveiling and the guide will be revised if input from this session determines the need for additional information to enhance the operations of their county fair. The presentation will involve and encourage input from the crowd to help mold the document and allow it to set the standard for Michigan county fairs. If you cannot make the session but would like a copy, please contact your local MSU swine agent.

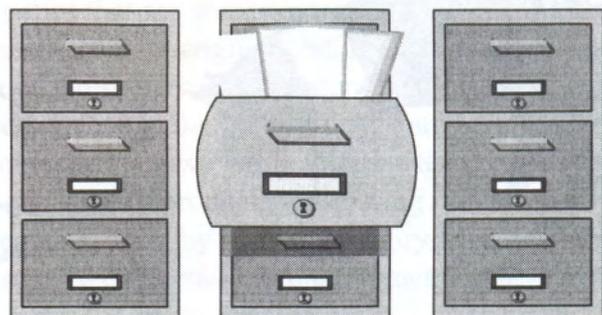


The Limited Liability Corporation (L.L.C)

By: Brian Hines, MSU Swine Agent, Southeast Michigan

The Limited Liability Company (LLC) is a new form of business entity for Michigan which became law on June 1st of 1993. The formation of networked production with sow cooperatives and groups of producers combining pig flow brings the LLC as a viable business organizational structure. It is defined as an unincorporated organization that limits the liability of its owners to their investment in the LLC while providing them with pass-through tax treatment. Business entities with more than one owner have been characterized as corporations or partnerships. Under Reg. 1.7701-2 and 3, an entity is a partnership, as opposed to a corporation, if it lacks two of the following four characteristics: limited liability, centralized management, continuity of life, and freely transferable interests. Obviously the LLC possess limited liability, thus it must lack two of the other three characteristics. An LLC is a hybrid entity that in Michigan is taxed as a partnership while providing limited liability protection for all of its members. Prior to the Limited Liability company alternative, two or more individuals could operate a common entity as a partnership or a corporation. Now the option of the Limited Liability Company allows a third alternative business organizational structure for individuals. The LLC is formed under most statutes by filing Articles of Organization with the Secretary of State, similar to a corporation's Articles of Incorporation. The Articles of Organization generally contain basic information and whether it will dissolve in the future or operate in perpetuity. The Operating Agreement is a written document. The Agreement would cover issues such as management, voting rights of members, allocation of income and losses, liquidations, transfer of interest, withdrawal, and retirement. The LLC has certain requirements for record keeping, disclosure and reporting. The level of legal requirements for a LLC is higher than a Partnership but less than a Corporation. The business entity must have 2 or more members and combines Limited Liability and taxation by the owners in their personal tax returns rather than the business entity. A new bill was passed in 1997 where only one person can form an LLC.

Currently, both of these characteristics are not available in a partnership but are possible in a subchapter "S" corporation. The Operating Agreement can provide for preferential rights, special allocations of profits and losses, shifting interests, etc. If these rights or special allocations are not defined in the Agreement then equality to all LLC members on matters not specified. (ie. voting rights, profit/loss on a equal per capita basis). The LLC is flexible enough to accommodate all aspects of the members' contributions and economic expectations. An LLC should be considered when the business owners desire limited liability above their investment in the company and individual taxation of business earnings is preferred over company taxation. These characteristics may also be obtained in an "S" corporation or a limited partnership for some of the partners. A lawsuit in a partnership could take all the assets of your partner and then yours if there was not enough capital generated by the liquidation to cash of the partner's assets. Remember an LLC cannot have all of the characteristics of a corporation, or it will be taxed as a corporation. The LLC must lack two of the following four corporate characteristics: continuity of life, centralized management, limited liability, and free transferability of interests. Finding the "right" legal structure for legal business structure networking requires participants to consider the following. 1. Goals and objectives of the business; 2. Know your participants; 3. Consider issues related to ownership, governance, and financial risk and reward; 4. Think of the advantages and disadvantages of various legal structures and their possible limitations. Each farming operation has their own peculiarities but a legal working structure to shelter the risk has a lot of advantages and merits periodic review.



Utilizing a Consultant

By: Tim Johnson, West Michigan Swine Agent

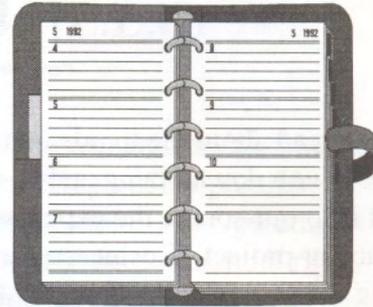
We have all read about the trends in big business that have to deal with down-sizing and re-organization. The trend is to out-source the expertise that is needed for a particular project. Businesses save money by employing the personnel for a particular period of time or project and do not have to employ those resources full-time. As a result of this trend, new businesses have sprung up that are highly specialized to fill these new niches created by these re-organizations. The source of this new expertise often carry the label of consultant. Consultants are available in many different areas, consultants to work on setting up a computer network in the office, consultants to develop an employee handbook, and even a consultant to design an aesthetically pleasing workplace. The question for agriculture is how or if we going to utilize this new business mentality or structure. Companies that have in the past often supplied regional or even local people to assist with the purchase and utilization of their products are no longer providing that option to users. Producers are left to seek out the information on a particular item of interest on their own, often over the phone instead of with a farm visit. Now I am not saying that this is a bad thing in all cases, it has made the opportunity to secure new information a lot more difficult for producers. Phone lines with 800 numbers are probably cheaper than putting people out on the road all across the country. Producers may also have a more difficult time finding out who in their local area might also be using a product and if it works as advertised. Also, how fast can you get service over a 800-line when an item breaks or fails to function properly? While I do not condone or endorse any particular plan of doing business, what I would like to point out is that the world is changing and how are you adapting to these changes. Do you currently utilize consultants? If so, do they meet your expectations, are you satisfied with their performance? Why I ask the question about consultants is that I often approach my Extension position from a consultant point of view. With the restructuring of Extension a few years ago and the formation of Area of Expertise (AoE) teams, agents

were given regional responsibilities in a defined area of knowledge or expertise. In my case and in the case of the other four swine AoE agents, our expertise is in the area that you are concerned with everyday, that being the swine industry. When we look at what as happened in business and in agriculture, we have become more specialized, more focused. Businesses no longer produce ten different kinds of products from the same plant or facility, similarly in agriculture, we specialize in certain commodities. We no longer have farms that produce milk, eggs, and ham from the same operation. We have specialized to enable the productivity to increase and remain competitive in the marketplace. What Extension has done is to follow these trends in industry as well as agriculture and offer the users of our product the specialized education and information they require. The existence of the extension agent who dealt with every agricultural issue under the sun is limited. The world we operate in has forced us to specialize because of the complexities of your business. The information, operating procedures and concerns of each commodity group are vastly different and to be effective, one has to either keep up or be passed by. I feel that what extension has done to re-configure its structure is to tell agriculture, we want to step up to the plate and be a valuable player on your team. The swine extension team is certainly poised to be a player on your management and production team. The regional field staff have individual strengths that make the overall team a strong resource to the swine producers in the state of Michigan. The campus faculty are an excellent resource to both the regional agents and to producers. What you have access to when you have a swine extension agent on your team is the resources of Michigan State University and the resources of several other states and their universities. What you have in actuality is a consultant that is locally available, has a large support system on which to draw information, and is genuinely interested in giving you the best, unbiased information available. The swine extension agents are available to assist producers in every aspect of the pork production chain.

Cont. pg. 8

Consultation cont.

Call your area swine agent and schedule an appointment with your consultant today. You may find that it was one of the best business decisions you ever made.



Environmental Assurance Program

During the upcoming months, the MSU Swine Extension Team will be presenting producers with opportunity to participate in the NPPC Environmental Assurance Program (EAP). Producers who complete the program will better understand the cause-effect relationship between everyday management practices and long-term environmental quality. Producers will also have the tools to objectively assess their operations. The program will provide practical

management suggestions and resource materials to allow producers to promote their operations and gain a step toward positive perceptions about the industry in their local community. The programs will be offered at various sites around the state in late February and March, so keep your eyes open for your opportunity to attend a meeting and make sure your operation is recognized as environmentally assured.

Pigs for Sale...How to get your farm listed

Are you a hog producer that sells pigs to 4-Her's for show at the county fair? If so, then you may want to get your farm listed on the statewide show pig list that MSU Extension will be putting together again this spring. In an effort to supply county extension offices, 4-H leaders, and kids with sources of pigs for the fairs, the MSU Swine agents compiled a list of producers interested in selling pigs to 4-Her's last year. The program was well received, especially by those kids who waited until the last minute or may have been new to the program. The list is sent to all county extension offices and to all 4-H agents in the state over the MSU internet system. You are free to negotiate your own sale terms and prices. If you are interested in being placed on the sellers list this year, please send me or your area swine agent the following information.

Your name _____
Address _____
County _____
Phone # _____

An outline map of the state of Michigan is shown. To the right of the map is a registration form with four lines for text entry, each preceded by a label: 'Your name', 'Address', 'County', and 'Phone #'. Each line has a horizontal line for writing.

While we can make no promises about increased sales, we will at least know you are interested in selling pigs to the kids and can pass your name along to them when they call. You will also be able to tell the folks down at the coffee shop that you sold some pigs over the internet and it was so...eeeasy. If you send your information to me, please send it to: Tim Johnson, Ottawa Co MSU Extension, 333 Clinton Street, Grand Haven, MI 49417 or call (616) 846-8250 or send e-mail to: johnsoti@msue.msu.edu



Pork Quality Assurance Pilot Project in Michigan

By: Oliver Duran, DVM, PhD, MRCVS- Swine Veterinary Extension, MSU

Purpose

Under Hazard Analysis Critical Control Points (HACCP) plans that packers are being asked to implement, the potential chemical and physical risks of their meat products have to be assessed. This means that packers are looking at ways of controlling and recording the possible hazards from their suppliers (the pork producers). The NPPC has decided that on the base of the current Pork Quality Assurance program, the pork industry needs to build a HACCP plan at farm level which is feasible and can be accomplished by producers.

Objectives

To develop an on farm HACCP plan for addressing potential chemical (antibiotics) and physical hazards that is reasonable to pork producers, that can fit with packer HACCP plans and meet government expectations in relation to food safety.

To determine the costs and commitment needed to implement the pork producers HACCP plan.

Project Plan

1. **Identification of 16 Michigan farms interested in participating in the pilot study;** These needed to represent different scales of operation.

- Eight farrow to finish or farrow to wean farms (4 large and 4 small).

- Eight finishing farms (4 small and 4 large).

Producers were required to write down all the medication use on the farm and collect the time spent carrying out this duty. The producers were assured that the data and the final report would not identify individual farms by name or location.

Start-up visit: Educational session with producer- consisted of Certification of staff/family members to PQA level III and explanation of the purpose, objectives and method for the pilot study. Also recording material was delivered, including a 30 gallon garbage can for used antibiotic/drug bottles and medication bags, Recording forms (numbered) to

collect the time spent recording medicine usage on the farm.

Monthly visits were carried out to gather recorded time sheets and copy other forms and to ensure everything was running smoothly.

Results

Fifteen Michigan farms agreed to participate and completed the PQA/HACCP Pilot study and the distribution between large and small herds can be seen in the table below (Table 1). The cut-off point between small and large herds was set at 5000 pigs/year marketed. One herd did agree to start the pilot study, but decided to depopulate the pig barn early into the study and the herd was not included in the results.

Complete recording data was available for three months only, as several producers stopped recording on the time sheets at that point. The data for time employed to keep treatment and medication records is presented on table 1. Two small contract finishing units did not medicate a single animal during the period of the trial and therefore did not spend any time recording.

The average time spent monthly recording treatments per farm over the 3 month study period was 41 minutes and 18 seconds. There was a wide range of time spent recording, the maximum average time was 120 minutes and the minimum was 0. The costs of recording and individually identifying treated pigs was so low that most producers did not collect this data. None of the participating producers used ear-tags to identify treated pigs and all farms had a policy of avoiding any injectable or in feed/in water medication in the last month of finishing. In cases of emergency a product with no withdrawal period was used. When individually treated pigs needed to be identified, color markers were employed. Two producers collected the cost of recording treatments and they were below 50 cents/month during the pilot project. These expenses included the cost of photocopying recording sheets and purchasing crayon markers for treated individual

Discussion

The health status, production system and number of treatments varied greatly between these 15 Michigan swine farms, which is reflected by the time spent recording treatments. In fact, two all-in-all-out contract finishing units did not record a single treatment during the period of study. The type of production system and the pig flow differed between the farms in the study, perhaps also exerting an effect on overall health and frequency of treatment.

Furthermore, the standard of recording between the farms in this pilot project was vastly different. Only four farms meticulously recorded every treatment, medicated feed batch, kept a drug inventory, and completed vaccination and medication plans for their farm as required under the proposed level III guidelines.

One farm recorded all injectable treatments, maintained an inventory of medication stored on the farm and had a routine medication and vaccination plan drawn out. Eight farms on this study only kept records of injectable medication and vaccination. In these farms medicated feed was either prepared off the farm, not recorded or not used during the period of study. All participating breeding herds recorded sow treatments on the sow's breeding card, in preference to a separate sow treatment sheet.

An exit survey of the participating pork producers was conducted to determine their views on the Pork Quality Assurance program, food safety and HACCP.

Fifteen completed surveys were collected from the Michigan participants. With the exception of four finishing herds all personnel was certified to Pork Quality Assurance Scheme level III at the beginning of the trial. These producers were trained and certified to Level III during the first visit to the farm. All persons involved in administering treatment or drugs had received previous training before the beginning of the study and 93.3% of the participating farms had an established vet/client/patient relationship.

Before the PQA Pilot Project was started 7 out of 15 producers (46.7%) did not know what the acronym HACCP (Hazard Analysis and Critical Control Points) stood for, whilst after the study 33.3% did not

know. When asked if aware of the FDA Compliance Policy Guide 7125.37 "Proper Drug Use and Residue Avoidance by Non-veterinarians" 66.6% of participating producers responded affirmatively before the beginning of the study, increasing to 86.7% at the end of the study. After completing the study all producers except one were aware that the Pork Quality Assurance program was funded with check-off dollars, compared with 12 from 15 producers at the beginning of the study.

The majority of pork producers surveyed viewed their role in providing the consumer with safe pork product as extremely important (73.3%), with the remainder of participants viewing the producers role as important. In addition when asked to rank the degree of importance of different groups in the pork chain- the producers in this study believed that the responsibility to provide safe pork lay first in producers, second in the packer, third in the supermarket or retailer, fourth in the consumer and fifth in the government. Five producers thought that the responsibility for safe pork at the table was shared equally by producers, packers, retailers and consumers. In contrast, almost 50% of participants thought the government was not important or not important at all in providing safe pork.

Before the Pilot study 86.7% of the farms determined that pigs to be sold had completed their withdrawal time by checking the written record of the last day of treatment, one further producer decided to write down this information during the project (93.3% using written record to determine withdrawal was complete), whilst another still continued to use memory to determine that pigs had cleared the withdrawal period.

Individual market pigs that had received medication were detected by a written record of the unique identification of an individual pig by 10/15 responders (66.7%), two producers did not medicate individual pigs in the finisher, two treated the whole pen at a time and recorded the pen location, whilst one relied on remembering the individual pigs receiving medication.

Individual sows and boars that had received medication were identified by a written record of the

unique identification number (ear tag) on 7 out of 8 breeding herds in the study. One producer employed a written record and memory to recall treated sows and boars.

All producers agreed they would continue to record medication use and treated pigs on the farm, but many would employ farm specific, streamlined or “practical” systems adapted to the situation, and not necessarily following the forms provided in the PQA level III booklet.

All producers bar one thought that implementing the

program bought benefits to the farm including: increases awareness of the importance of avoiding residues, review the farm’s medication usage and efficacy, establishes a self regulating program not relying on government intervention, provides a “paper trail” to demonstrate correct usage of medication, emphasizes quality and increases marketability, improves the Vet/client relationship, generates a herd medical history and supports communication between farm workers.

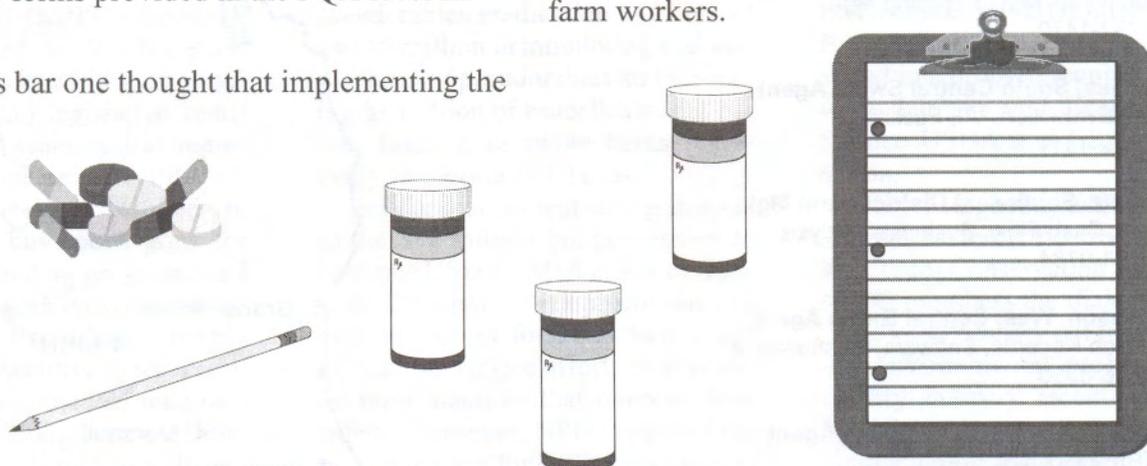


Table 1. Time spent keeping medication records by participating farms in the PQA/HACCP Pilot project.

| Farm Type | Pigs sold/year | Average time (min/sec) recording treatment per month | Minimum time (min/sec) | Maximum time (min/sec) |
|----------------------------|----------------|------------------------------------------------------|------------------------|------------------------|
| Farrow to Finish | 9000 | 9 min | 6 min 15 sec | 10 min 45 sec |
| Farrow to wean | 10000 | 13 min 25 sec | 6 min | 21 min 25 sec |
| Farrow to wean | 15000 | 48 min 30 sec | 37 min | 66 min |
| Farrow to feeder | 8000 | 97 min 20 sec | 34 min 40 sec | 207 min 20sec |
| Farrow to finish | 3000 | 51 min 20 sec | 31 min | 83 min |
| Farrow to finish | 5000 | 90 min | 55 min | 140 min |
| Farrow to finish | 4000 | 98 min 20 sec | 50 min | 195 min |
| Farrow to finish | 4000 | 120 min | 120 min | 120 min |
| Finishing (contract) | 6000 | 6 min 20 sec | 1 min | 13 min |
| Finishing (contract) | 5400 | 24 min 50 sec | 3 min | 54 min |
| Finishign (contract) | 5000 | 11 min | 0 min | 24 min |
| Finishing (Gilt developer) | 12000 | 120 min 40 sec | 17 min | 190 min |
| Finishing | 5000 | 3 min 7 sec | 1 min 30 sec | 4 min 40 sec |
| Finishing (contract) | 3000 | 0 min | 0 min | 0 min |
| Finishing (contract) | 3000 | 0 min | 0 min | 0 min |

All comments and suggestions should be directed to:

MICHIGAN STATE UNIVERSITY EXTENSION

1. **Marty Ropp, North Central Swine Agent**
Genetics
(517) 875-5233
2. **Joe Kelpinski, Northeast Swine Agent**
Environmental Mgt., Finishing Mgt.
(810) 732-1470
3. **Brian Hines, South Central Swine Agent**
Genetic Evaluation, AI, Facilities
(517) 279-4311
4. **Roger Betz, Southwest District Farm Mgt.**
Finance, Cash Flow, Business Analysis
(616) 781-0784
5. **Tim Johnson, West Central Swine Agent**
Production Records, Software, Confinement
(616) 846-8250
6. **Mike Cowley, South West Swine Agent**
Farm Business Mgt.
(616) 657-7745

