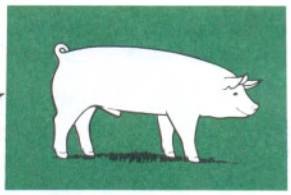
MSU Pork Quarterly



"Information for an industry on the move!"

October 1997 Volume 2.3.97

Expanding the Use of Swine Production Records

By: Tim Johnson, West Central Swine Extension Agent

In today's production systems, the ability to determine where breakdowns are occurring are crucial to maintaining production goals and profitability. In biological systems the various parts of the process can begin to suffer breakdowns and while minor failures may not shut the system down, it will create drag on the system. When enough drag accumulates, the entire system will begin to shutdown and often times require a major effort to get the system back on track. In an effort to avoid this cycle of train wrecks and re-constructions, it becomes important to try to monitor the various components of the production system. To monitor the system, many producers will probably require some type of production record keeping system that is computerized. There are many different programs being used and commercially available, but for purposes of this discussion I will be using examples from the PigCHAMP software program.

Most production software provides records for the breeding herd, farrowing, grow-finish and some financial aspects. The financial aspects of most production software are often weak as linking the two together, production and financial records, often results in a cumbersome package that fails to do a good job at either.

For purposes of today's discussion I am going to focus on the breeding herd and some of the points I feel may be helpful in maintaining productivity in the breeding herd. To get the most out of your records, gilts intended for breeding purposes should be considered part of the breeding herd the day they enter the breeding facility. Even if gilts are not going to be bred for some determined period of time, they should be entered into the herd and into the records as a breeding herd resident. While we can debate this issue of what is the "correct" method, the new industry standards that are being adopted will handle gilts intended for breeding in the manner in which I have described above. The downside of not entering gilts into the breeding herd population at the time of entry and waiting until they are bred or worse yet until they farrow is that you have just lost control of over 40% of the breeding herd. If your replacement rate is higher than the 40% example, you just lost some more control. The most important part of a records program are the reports that are generated, and secondly, what action was taken as a result of the report. The main reason for keeping records should not be to just provide a farrowing date. While farrowing dates are important, records should be an intregal part of the management of the business.

What I would now like to do is to discuss some reports that I have found useful when evaluating certain aspects of the breeding herd. The most common report that should be a starting place for further reports is the performance monitor. The performance monitor provides an overview of breeding, farrowing, and weaning performance as well as population parameters. Evaluation of many of the common production parameters on this report may indicate the need for further investigation and the generation of further reports to allow detailed analysis. While we often view a few of the common reports, what I would like to attempt is to make you aware of some of the other, less utilized reports in the hope that someday they can help you solve a production problem.

Some of my favorite reports when evaluating the breeding herd are the action lists. In most cases, farms will utilize the action lists for producing a listing of sows due to farrow. The list helps ensure that the proper sows are taken to the farrowing barn at the **(Records p.2)**

What's inside...

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appropriate time. While this may be important, the action lists of importance to maximizing breeding herd performance are the reports that list the females that have fallen out of the normal production flow. Those animals are the females that are accumulating non-productive days, eating feed and taking up valuable space in your facility. Action lists can generate listings of sows that have been weaned but not served, sows found not pregnant, and gilts entered but not served. These categories are often places where animals will fall out of the normal production flow and be forgotten. The lists allow management to seek out and identify those animals in the facility and make a determination as to what action needs to be taken to get those animals back in the flow. In my own experience in larger sow units, the number of non-productive females can quickly grow if not managed regularly and aggressively. It is often too easy for breeding barn personnel to focus on those animals that fit the norm and let those that fall-out to continue on an unproductive path. The value of non-productive days has been well documented and therefore should be closely monitored by management. The investment in breeding stock, especially gilts, should also force management to attempt to minimize any losses through non-productivity.

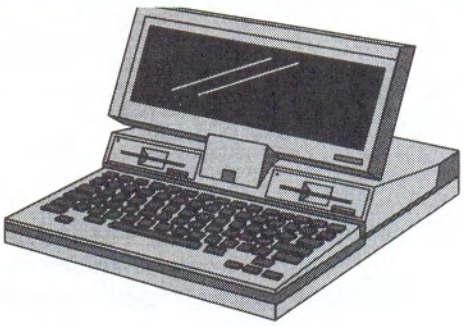
Another series of reports that can be valuable when experiencing problems with conception rates is the boar performance, boar usage, and repeat estrus reports. The boar performance report can be utilized for natural matings or AI situations to evaluate the fertility of boars. An infertile boar can cause problems if not identified and removed in a timely manner. The important point with this type of report is to have enough observations or single boar services to draw valid conclusions. A young boar may need 15 to 20 matings to start demonstrating his true ability. The boar performance report also calculates how often a boar has been mated. If a boar has had a poor conception rate and has been used every day, he may have a reason for being a less than optimal performer. But a boar that has been properly rested and continues to perform poorly, may need to be removed. The boar usage report can provide further details into the number of services that a boar has performed over a given period of time. If you are on a regular replacement schedule for boars on your operation, the boar performance report is often a good place to identify which boars to cull. It is important to point out that your management style in the breeding barn can also have an impact on boar performance. In the previous section I discussed identification of females that had fallen out of the system. In facilities I have managed, we always had a particular section of the breeding barn where these so called "junk" sows were housed so that they got the additional attention they needed. The result of this special attention was that some of the most aggressive boars were often housed here as well. The boar may have been one of the most fertile boars in the barn but due the fact that he was working less than optimal females, his performance figures may have suffered. The other trick to minimizing this effect on a boars' performance is to rotate the boar out of this area periodically to get a true picture of his abilities. The important point is that you have to take management style into consideration when evaluating any set of production records. The third part of the picture is the repeat estrus report. The repeat estrus report evaluates the days to re-service for various parities within the herd. The repeat estrus report can be utilized to determine if sows are being heat checked properly and that repeat service intervals are within normal parameters.

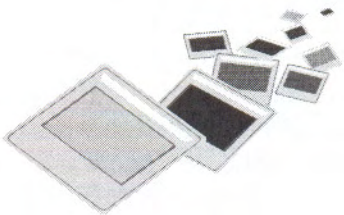
The important point here is that without computerized production records, the ability to gather the information generated would be difficult. The reports also allow producers to zero-in on factors that impact productivity in a matter of minutes. This time saving allows managers to spend more time doing productive, profitable work and less time wondering what-if

while compiling bits and pieces of fragmented data.

While not intended as a comprehensive discussion of production records, I will in the future be discussing other production reports that you can hopefully use to assist in the daily operation of your business. If you have any questions about what I have presented here or suggestions for future considerations, please contact me or any of the swine agents listed on the back cover.

*** The use of the PigCHAMP name does not imply endorsement by MSU Extension, but was simply used for demonstration purposes. PigCHAMP is a registered trademark of the Regents of the University of Minnesota.*





News from the Environmental Front

By: Joe Kelpinski Northeast Extension Swine Agent

Having attended the Swine Extension Educators Conference last month in Des Moines, I came away a little concerned about some of the things happening nationwide in the field of animal agriculture, particularly the swine industry. This conference, sponsored annually by the National Pork Producers Council, addresses the latest issues concerning swine production. The main focus of the conference this year addressed environmental challenges that producers face today. I had the opportunity to interact with colleagues from states such as North Carolina, Iowa, Kentucky, Minnesota and a host of others. I single these four states out because of things happening there which may be an indicator of where we are headed in the industry.

Many of you are aware of the things happening in these states, moratoriums on new construction of ANY size facilities (North Carolina), state laws either pending or in place to prevent "corporate" hog farms (Iowa and Kentucky), and strict guidelines concerning nutrient planning, allowable animal units, and manure plans (Minnesota). Every day I receive information concerning problems producers encounter, both locally and nationwide, in constructing new facilities. Over the last couple years, the bulk of the resistance has come from opposition utilizing environmental concerns as the basis for their arguments. The problem with much of the opposition is that environmental concerns tend to be based on emotion rather than good science. However, it seems to be emotion that is driving current legislation. This can be seen in programs such as "EQIP", which ties nutrient plans and producer size to the ability to receive funding.

Is this "green" syndrome sweeping the country wrong? NO! Are they misinformed? YES! Can this movement be addressed? ABSOLUTELY! The task of countering our opponents falls squarely on our shoulders. It begins with each producer and works upward from there. All though all of you are blessed to be in a state with a Right To Farm law as good as the one we have in Michigan, we cannot responsibly hide behind this law to cover our actions. We MUST be proactive! This means developing, implementing, and adhering to nutrient/manure **(Environmental Front p.4)**

management plans. It means being a good neighbor! It means treating the natural resources surrounding your farm as part of the public domain that they are.

NPPC developed an Environmental Assurance Program(EAP) a couple years ago. Like the Pork Quality Assurance program many of you are familiar with, the EAP has a workbook and farmstead analysis worksheets to guide you through this program. When done you are considered "environmentally assured". Why do we need an Environmental Assurance Program? There are at least four VERY GOOD reasons: To demonstrate to the public, regulators and even yourselves that we are DEDICATED to conserving the environment and that you have confidence and security in your ability to be a good environmental steward; Improve your profitability through better nutrient management; Reduce the potential liability of a nuisance suit through good faith efforts and recordkeeping; and finally, build a positive environmental image for your farm, your family, and your industry.

You may or may not have heard of the EAP program yet. The reason is simple. We in Michigan (MSU, Pork Alliance, DEQ, MDA etc.) are working to improve this program and launch it as a multi-species program for our state. The current program has some inherent shortcomings we feel need to be addressed. It is our goal to launch this program, possibly by Pork Expo time. By improving and implementing this program, we will hopefully avoid some of the pitfalls and problems encountered in my colleagues' states. For information on planning and implementing an environmental management program on your farm, contact your local MSUE swine agent.

Check Market Pigs Weights This Fall

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

There is a natural tendency within the pig business for both financial and biological measures to move up and down over time. Successful managers will try to understand these natural tendencies and capitalize on them.

Two cycles that are of importance in the fall are; a decrease in market pig price/cwt from summer through fall, and a rise in market pig weights during the same period. Typically market pig weight will rise 10 lbs from the first week of September through to the first week of November. During this same period average market price will fall approximately $4-4.50/cwt.

This increase in market weight can be attributed to several conditions. During the summer, growth rate of pigs decrease. This causes either lighter market weights or a greater time to reach a set market weight. However, as summer turns to fall, environmental conditions improve and growth rate increases. Often this improvement in growth rate is not closely monitored and when pigs are marketed at a set age, market weight increases. Since growth rate improves in the fall an opportunity exists to market pigs at a younger age and improve the number of turns within a room or barn.

These two cycles within the pig business typically cause pork producers to market pigs at heavier weights during a time period when market price is decreasing and average of $.50 to $.56/cwt per week. Literally, holding pigs an additional week will typically cause them to be worth less/cwt.

An additional factor to be concerned with is the cost of gain for these pigs. Weight gained at the end of the finishing phase occurs with the poorest feed efficiency. Allowing market pig weights to increase during the fall can add to the total feed cost per pig marketed at a time when market price is usually dropping.

This year market price, for the third quarter should average $54.00. It is anticipated that fourth quarter prices may average in the $45-48/cwt range. Since market price has moved into the $48 range it

appears that prices may well average in the upper $40's for the fourth quarter. Market weight have been in the 248-250 lb range with moving up to 252 lbs in late September. It may be unlikely that markets weights would increase to 260 lbs this fall; however, there will be some further increase during a time when market prices should drop $5-8/cwt.

Pork producers should actively evaluate market weights within their farm. This improvement in growth rate can be missed if pigs are only visually evaluated. However, pork producers can implement some simple management procedures to optimize fall market weights. Within a room or building a pen of pigs can be designated as a sentinel pen. This pen can be used as a monitor of performance within the room or barn. This pen should be representative of the pigs within the barn for size and weight. The pen can be weighed once a week or once every two weeks after they reach 200 lbs. This information can be used to track the change in average weight and assist in the determination of an optimum market weight. This should be done for both barrows and gilts. Following the weight change of a sentinel pen can also help producers fine tune their feeding program if they are trying to implement a feed budgeting regimen.

Pork producers may allow weights to increase in the fall to allow for a greater percentage of pigs within a room or barn to be marketed within a optimum weight window. However, pork producers should understand that if left unattended, fall market weights will rise while fall market price drops, all the while the increase in weight causes feed costs per pig to increase and further reduces profit per cwt.

Employee Motivation

By: Mike Cowley, Southwest Swine Extension Agent

As it becomes increasingly difficult to hire and retain high quality employees, I thought it would be appropriate to focus my article on employee motivation. Effective human resource management will always be a key ingredient to overall managerial effectiveness. While I am not an expert in the area, I thought I would share some ideas on keeping employees motivated and maintaining a sense of pride in their work. It is human nature to desire a sense of purpose and often times the work place is the most crucial area in a person's life to realize this experience, regardless of age, education, or perceived intelligence. Agricultural workers typically spend 60 to 70 hours per week on the job, so it is extremely important to hire people who possess a strong work ethic. However, if an employee does not develop a sense of purpose or a feeling of accomplishment it becomes extremely difficult for the employee to remain motivated and, as a result, farm performance will suffer in one form or another.

While the level of pay and various bonus systems have a definite influence on motivation, it is not feasible for owners to continually increase wages or offer bonuses. This is why the value of verbal rewards as employee motivators are very useful in maintaining or increasing employee performance. This is far from being a new concept, but managers and owners often forget to commend their employees for doing a good job. Sometimes personalities get in the way or they just don't think its important.

I have witnessed first hand the effectiveness of verbal rewards through some of the owners and managers I have worked for in the past. For example, one owner I worked for always made it a point to verbally let his employees know when they were doing a good job. This opened up the lines of communication and gave us all a sense of loyalty towards him and pride in our work. We were not discouraged when he let us know we needed to put forth more effort in particular areas

(Employee Motivation p.6)

because he also informed us that we were doing a good job in other areas. As a result, his farm's performance became a top priority for each of his employees.

All too often managers immediately speak up only when something is not done right. While this is important, it is also equally important to immediately and personally reinforce the desired behavior in employees by speaking up and letting them know they are performing well. There are several examples of non-monetary informal rewards, but verbal rewards are usually the most effective because they give employees an immediate sense of accomplishment and are also the easiest and most practical for managers to provide. The effectiveness of this type of motivation does vary depending upon what the individual employee values. However, it is easy and inexpensive to utilize and it may be helpful in maintaining a high level of motivation and keeping good employees around, even with the level of pay or bonus system held constant. This is a very small part of human resource management, but it is also a very important part that often tends to be overlooked.

New Swine Extension Agent in Central Michigan

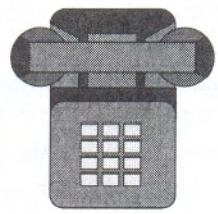
Marty Ropp started with MSU Extension on Aug. 1 as the new Swine Area of Expertise Specialist for Central Michigan.

Marty is originally from Central Illinois where he grew up raising purebred hogs on their family farm near Bloomington-Normal. After attending Bethel College at Newton KS, he finished his BS at Kansas State University in December of 1986. Marty then received his MS in Animal Science from the University of Missouri in 1990.

Following graduation, Marty served as an undergraduate instructor and advisor at MU and coached the University of Missouri livestock judging team for three years. Most recently he worked for Missouri Extension as a Regional Livestock Specialist in West-Central Missouri. While there Marty's swine programming initiatives were mainly in the areas of genetics, meat quality, environmental assessment, producer cooperative arrangements and state wide youth livestock activities.

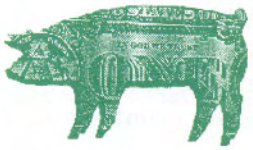
Marty and his wife Renee have been married for ten years and currently live at Laingsburg. Renee recently finished here Ph.D. in Clinical Psychology and works at the UM Medical Center in Ann Arbor.

In addition to Gratiot County where Marty's office is located, he serves Ionia, Mecosta, Montcalm, Clinton, Shiawassee, Isabella, Midland, Saginaw and Bay counties.

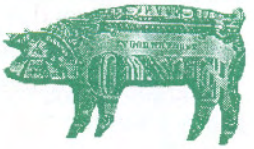


Marty Ropp

You can contact him at the Ithaca office at **(517)875-5233** or by E-Mail at **roppm@msue.msu.edu.**



Annual Business Analysis Essential For Pork Producers



By: Roger Betz, SW District Extension Farm Management Agent

The 1997 Pork symposium held in Lansing in February highlighted the importance of farm financial records and business analysis. Highlighted were financial and income concepts important to monitor the business. The MSU Extension Telfarm and Sweat Project is designed to assist producers with this essential information.

The annual business analysis is useful to the manager to objectively evaluate the overall financial progress of the business. This analysis becomes the permanent record for the business which can be tracked over time. Overall strengths and weaknesses, and competiveness of the business can be objectively monitored. The information can be used for the manager to communicate to himself, business partners, spouses and outside people, including lenders and consultants.

Most producers utilize a single entry accounting system which will provide the necessary information for cash basis tax preparation, however, this alone can be very misleading to evaluate the overall profitability of the business. Many asset, liability and inventory items must be adjusted. This adjustment information is obtained from the net worth statements or balance sheets. As an absolute minimum, all managers should develop a net worth statement with detailed information as of December 31 for each year.

With the beginning and ending net worth statements for each year, the accrual adjustments can be performed to the annual cash transactions. The changes in inventory of crops in storage and quantity of livestock, prepaid expenses, and changes in unpaid bills can all be determined from the beginning and the ending net worth statements. These changes in net worth activities are used to adjust the cash flow activity to help determine the overall profitability of the business. Adjustments for depreciation and an appropriate charge for unpaid labor also need to be considered when developing the income statement.

A single entry reconciled cash accounting system with consistent accurate and detailed net worth statements used to develop the income statement, will obtain exactly the same net results as a more complicated double entry system. The single entry system with the accrued income statement will provide better business analysis than what ninety percent of producers have.

A feature that is becoming more important in the agriculture and swine industry is a dual column balance sheet where both the cost basis and market value net worth statements are shown. This information is useful in helping to establish the difference between the cost basis profit and the "market valuation" profit. The dual column net worth statement discloses both the cost basis and market valuations net worth. This net worth statement along with the cash flow activity provides the necessary information to develop financial ratios and other information for the business manager to monitor.

The National Standards Task Force on farm accounting principles has developed a set of guidelines for consistent and meaningful financial analysis ratios for agricultural operations. These ratios revolve around profitability, liquidity, net worth change, repayment capacity and financial efficiencies.

The Michigan State University Extension Service has two methods designed to help you achieve the useful information for business analysis described above. Both systems utilize the FINPACK software from Minnesota. These two systems are the MSU Telfarm Management Information System and the Swine Sweat Project. The Telfarm system **(Business Analysis p. 8)**

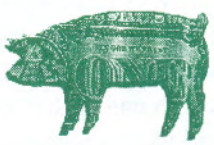
uses the Microtel Accountant software to keep cash flow activity including assets and liabililities. The system provides income tax planning, day to day accounting assistance, depreciation schedules, and FINPACK business analysis. Microtel has an output function that interfaces directly with the FINPACK software for easy loading of the information.

The Sweat project is designed specifically for swine farms where you can utilize any accounting system and Extension agents will work with you to obtain the FINPACK business analysis.

The FINPACK Business Analysis is very well accepted across the midwest by universities, individual producers, and the lending profession. The consistency of information and calculation of numerous useful ratios are performed to the task force recommendations. They are presented in a easy to understand output. The information is stored year to year to develop trend analysis for your business. In either system, individual producer information is held in strict confidence.

The confidential information is summarized with other producers business information to develop "type of farm" reports. These reports are useful to help the farm manager compare to other like farms to help identify strengths and weaknesses within the business.

The MSU Extension team will be performing the business analysis activities in January, February and March of this coming year. Contact your local swine or livestock Area of Expertise Agent for more information on either Telfarm or the Sweat Project.



Thinking Back of Last Winter and Looking Ahead to the Next: Adjusting the Nutrient Requirements of Grow/Finish Hogs in Colder Environments

By: Dr. Dale Rozeboom, Extension Swine Specialist, Michigan State University

The nutrient requirements suggested in most university and feed industry publications are generally intended for pigs maintained in "standard production conditions." Many factors interact to comprise "standard conditions" or the production environment (Table 1). Under "standard production conditions" pigs are typically housed in insulated buildings, fully-slotted floors, with air-movement at less than 50 feet per second and humidity between 20 to 80%.

Growing pigs that are exposed to conditions other than "standard" environments, require different diets with different nutrient densities. In the remainder of this article we'll focus on varying only one of these factors, thermal environment. The influence of thermal climate on the nutrient requirements of grow/finish pigs will be discussed.

The thermoneutral or comfort zone of growing pigs ranges from 70 to 95F and 45 to 85F at 50 and 250 pounds liveweight, respectively. Pigs housed in "outdoor" units such as MOF's, Hoop's, and remodeled dairy barns are frequently exposed to drafts and outside temperatures. They experience effective environmental temperatures (EET) below thermoneutrality. Getting an exact measure of this temperature drop is difficult, with most estimates suggesting the animal's EET is about 3 to 7F cooler in alternative, partial outdoor housing verses "standard conditions."

In these colder conditions the pig will eat more feed to provide the metabolic fuel to keep warm. Despite greater energy needs, the pigs requirement for other nutrients, including amino acids is unchanged. Consequently, the nutrient concentrations in the diet may be adjusted downward. An example of this is illustrated in Tables 2 and 3 using medium-lean gain pigs, in a well-managed, bedded, dry, outdoor-type facility.

The key change in performance accompanying a decrease of about 5F in EET, is a 0.25 to 0.3 increase in feed-to-gain ratio.

This EET change results in a reduction in dietary lysine concentration of 0.02 to 0.05%. Calcium and phosphorus concentrations in diets are both decreased by 0.02 to 0.03%. These small changes amount to a
ost decrease of about $2.50 per ton of feed (corn at $2.70/bushel, SBM at $300/ton, and dicalcium phosphate at $380/ton). In several instances, a similar diet can be fed to barrows and gilts of differing weight ranges.

Overall, making small changes in nutrient concentrations appears most worthwhile when a large number of same-sex pigs are fed. Diets of high-lean pigs would be adjusted correspondingly, if exposed to colder environments. If feeding small groups of barrows and gilts together, meeting exact nutrient requirements of the different sexes, in different phases, under colder thermal conditions, becomes more difficult. The decision to over-feed barrows or under-feed gilts must be made in light of carcass premiums gained. Furthermore, inventories of several rations may cost more than what can be gained by the slight nutrient density change. Customizing your rations may increase manufacturing costs in some instances.

(Nutrient Requirements p. 10)

Table 1. Standard Production Conditions

Grow/Finish Factors	Standard Conditions
Sex	One-to-one ratio of barrows and gilts
Health status (antigen exposure)	Modest (all-in/all-out, 1-2% mortality, one antigen present, facility cleaned between groups)
Thermal climate	Thermoneutral
Social climate	
Pen and feeder spacing per pig	PIH recommendations
Pig weight variation	Less than 20% of average weight
Dietary ingredients:	
Grain	Corn
Protein	
< 30 pound pigs	Soy and animal products
> 30 pound pigs	Dehulled soybean meal
Vitamins and trace minerals	Biologically available and stable
Antibiotic	Subtherapeutic levels
Feeding regimen:	
Feed intake	Ad libitum
Feed form	Meal
Feed particle size	650 to 750 microns
Feed mycotoxins	None
Growth modifiers	None

Adapted from Iowa State University, File: Animal Science 11, Revision 17, 1996.

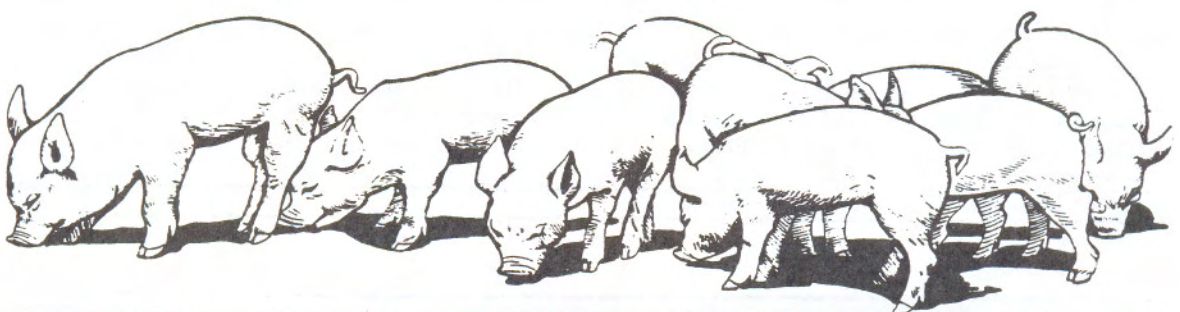


Table 2. Suggested swine diets for medium-lean gain grow/finish pigs in confinement environments (thermoneutral).

	Weight range, lb							
	50-100		100-150		150-200		200-Market	
Sex	gilt	barrow	gilt	barrow	gilt	barrow	gilt	barrow
Feed intake, lb	3.32	3.71	4.76	5.42	6.34	6.79	6.75	7.34
ADG, lb	1.45	1.45	1.60	1.70	1.90	2.00	2.00	2.10
F/G	2.29	2.56	2.97	3.19	3.34	3.39	3.38	3.49
Ingredient, lb								
Corn	1420	1493.5	1521.5	1595.5	1630.5	1697.4	1747	1806.3
Soybean meal 44%	451	376	353	277.5	274.5	206.6	202.4	142
Choice white grease	60	60	60	60	40	40	0	0
Limestone	20	20	19.6	19.6	16.8	16.7	16.5	16.5
Mono-calcium phosphate	19.5	21	16.4	17.9	12.7	13.8	8.6	9.7
White salt	10	10	10	10	6	6	6	6
Vitamin Premix	12	12	12	12	12	12	12	12
Trace Mineral Premix	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lysine HCl	3	3	3	3	3	3	3	3
Total	2000	2000	2000	2000	2000	2000	2000	2000
Calculated analysis								
Lysine, %	0.95	0.85	0.82	0.72	0.72	0.63	0.63	0.55
Lysine, g/d	14.3	14.3	17.7	17.7	20.7	19.4	19.3	18.3
Calcium, %	0.65	0.65	0.60	0.60	0.50	0.50	0.45	0.45
Total phosphorus, %	0.55	0.55	0.50	0.50	0.45	0.45	0.40	0.40

[a]Do not feed these low Ca and P diets to replacement gilts.

Table 3. Suggested swine diets for medium-lean gain grow/finish pigs in outdoor units such as MOF's and Hoop's (5° cooler effective environmental temperature).

	Weight range, lb							
	50-100		100-150		150-200		200-Market	
Sex	gilt	barrow	gilt	barrow	gilt	barrow	gilt	barrow
Feed intake, lb	3.49	3.86	5.08	5.76	6.63	7.11	7.07	7.67
ADG, lb	1.35	1.35	1.55	1.65	1.85	1.95	1.95	2.05
F/G	2.59	2.86	3.27	3.49	3.59	3.64	3.63	3.74
Ingredient, lb								
Corn	1460	1519.6	1561.8	1629	1655	1721.8	1771.5	1823.3
Soybean meal 44%	413.2	353	315	247	251.7	183.9	179.6	126.8
Choice white grease	60	60	60	60	40	40	0	0
Limestone	20	19.4	19.6	19.1	116.7	16.5	16.4	16.4
Mono-calcium phosphate	17.3	18.5	14.1	15.4	11.1	12.3	7.0	8.0
White salt	10	10	10	10	6	6	6	6
Vitamin Premix	12	12	12	12	12	12	12	12
Trace Mineral Premix	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lysine HCl	3	3	3	3	3	3	3	3
Total	2000	2000	2000	2000	2000	2000	2000	2000
Calculated analysis								
Lysine, %	0.90	0.82	0.77	0.68	0.69	0.60	0.60	0.53
Lysine, g/d	14.3	14.3	17.7	17.7	20.7	19.4	19.3	18.3
Calcium, %	0.62	0.62	0.57	0.57	0.48	0.48	0.43	0.43
Total phosphorus, %	0.52	0.52	0.47	0.47	0.43	0.43	0.38	0.38

[a]Do not feed these low Ca and P diets to replacement gilts.

The World Wide Web

by: Tim Johnson, West Central Swine Extension Agent

The internet has been heralded as the next great tool to learning. While I do not know if that prediction will come true, I do know that there is a great quantity of information available over the internet. The problem with the internet is that the information is often disjointed and is obtained in bit and pieces. There is no comprehensive summary about a topic and it is often left up to the reader to sift through the pieces to form a conclusion. The other problem is that anyone with a computer can put information out on the internet and make it look really important. Because there is often an endless list of information on a topic, I generally avoid the search engines and go directly to sites that will generally have a more comprehensive topic discussion and have a reputation of high quality information. In some instances the source is for an established farm publication or organization. These sources will often have all the articles that are published available, and sometimes additional articles on a topic that did not make the final print edition. The following sites are some that I visit often and find the information just as good or better than what is available in the printed version.

If you have other interesting web sites that you have found useful, I would appreciate hearing from you. Please send me e-mail at **johnsoti@msue.msu.edu**.

National Pork Producers Council PRODUCER INFO

http:\\www.nppc.org - The web site for the National Pork Producers. There is information for kids, food and nutritional information, industry news and information, and a section for producers. The producers section has research information, resource contacts for various items on the farm, and a chat line that covers a different topic monthly. The chat line allows producers to ask questions of a team of specialists that have been assembled on a particular topic. The industry news section is a clearinghouse of information about NPPC activities and programs. The food and nutritional information has recipes, nutritional information, information on how to cook pork cuts and information for health care providers. The section for kids has interesting information about cooking with pork and other educational items.

PORK 97

http:\\www.porkmag.com - The site for Pork '97 magazine. This site contains magazine articles, items on other areas of interest to pork producers, and other links to web sites. The site contains articles from the previous month and other new articles for future editions. The web page has organized articles into approximately eight different areas that can be accessed for a listing of articles that have appeared in the magazine. Many of us can remember reading an article about a topic but can't lay our hands on the magazine may find this feature to locate old articles very useful.

National Hog Farmer

http:\\www.homefarm.com - The web site for the National Hog Farmer Magazine and several other agricultural publications from the Intertec Publishing Co. This particular site has some very nice features to locate information about many agricultural topics. The Intertec company publishes a variety of agricultural magazines and you can have access to all of them through this site. The search feature at this site was found to be very helpful and easy to use after a few attempts to locate various items. The search looks through the entire library of publications to find items that may match your search words. Other features that were found to be of interest was the farmer chat line. This new feature allows farmers to share information about marketing and machinery as well as philosophize about the future of agriculture. While you may not be interested in adding your own comments, it is interesting to read what others may have sent in on a topic. There are also links for weather information anywhere in the country. If you are interested in what the markets did yesterday, you can also access the various commodity markets. The daily trading volume, highs, lows and settle price are given for the commodities. The lean hog futures and grain futures are all easily obtained. An interesting feature is the bookstore in which you can get information about ordering many of the books and publications that Intertec produces. If you need a particular manual for that old tractor, you can find it here.

All comments and suggestions should be directed to:

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1. **Marty Ropp, North Central Swine Agent**
   Genetics
   (517) 875-5233

2. **Joe Kelpinski, Northeast Swine Agent**
   Environmental Mgt., Finishing Mgt.
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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**
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6. **Mike Cowley, South West Swine Agent**
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