

Should I Keep Those Hogs For Just a Few More Days?

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Along with the record-breaking low prices experienced last winter, we also saw a lot of folks moving hogs to market at weights both above and below those that usually show up during "normal" times. Lighter hogs came to market because producers felt like it cost more to feed the hogs than what they were worth. Heavier hogs showed up too, as producers kept thinking prices would have to get better any day now, since they just couldn't fall any lower. Although hindsight can now tell us what may have been the best strategy, there has to be a more realistic way to make daily or weekly decisions on whether or not to keep those hogs just a few more days. In fact, there is and it all comes down to analyzing things on the *margin*.

In order to use marginal analysis, don't get hung up on *averages*. Six or ten months ago, when you made the decision to breed, farrow, or finish pigs, average numbers made a lot of sense. If the average price of hogs was greater than the average cost to feed them, then the picture looked pretty straightforward. But when the hogs are ready to market, the real decision is made on the margin. For instance, it doesn't matter what the average daily gain from birth to market was --- what does matter is the current average daily gain for a 250-pound hog. In economic terms, to maximize profit (or minimize losses), keep producing pork up to the point where *marginal cost (MC)* equals *marginal revenue (MR)*. This means feed your hogs until the cost of feeding an additional day (the MC) is equal to the revenue received for the extra weight (the MR).

Implementing this process can either be incredibly intricate or fairly simple. It all depends upon how the cost of keeping the hogs another day is calculated and what may happen to hog prices. To simply the situation, however, think about what it really costs to keep the hogs an additional day. The variable cost involved with feeding the hogs can be thought of as simply the cost of feed. Chances are other costs can be treated as fixed. For instance, labor can be employed elsewhere on the

farm and facility payments will have to be made regardless of whether or not hogs are in the building. Likewise, if you forward contract your market hogs and assume no sort loss or change in backfat, then you will know what the marginal revenue for keeping the hogs will be. With this simplification in mind, let's consider how a marketing decision based on marginal analysis works

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First, you'll need to know the average daily gain (ADG) of the hogs at their current weight, their daily feed intake and daily cost of feed, and finally, the price of hogs. These four components are used to determine the marginal cost (MC) and marginal

revenue (MR). The following equation is what we are after:

$$\text{MC} = \text{MR}$$
$$(\text{Feed Price}) \times (\text{Daily Feed Intake}) = (\text{Hog Price}) \times (\text{ADG})$$

If the marginal cost (MC) is greater than the marginal revenue (MR), or in other words if keeping the hogs another day is costing you more than the revenue you'll receive for the additional weight gain, you'll want to sell the hogs as soon as possible. Alternatively, if MC is less than MR, that means the revenue received from the additional weight gain more than pays for the costs of feed. Keeping the hogs will maximize your profits provided that you have the space available to continue to feed them without backing up your production system.

To provide producers with an approximate, yet simple marketing tool, a decision matrix was developed based on marginal analysis. Because the genotype, gender, and current weight of

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(Marketing Matrix continued from page 1)

the hog will influence ADG and feed intake, the matrix is built for a sample 250-pound animal, with distinctions made between barrows and gilts, as well as between high and low ADG. As a first step in calculating the marginal cost, NRC Nutrient Requirements of Swine (1998) were used to determine feed intakes. Next, various feed prices were considered from a starting point of \$0.035 per pound of feed to a high of \$0.065 per pound of feed. Marginal revenue was determined by considering both a high and a low average daily gain (2.2 and 1.4) and multiplying this figure by various hog prices. The matrix shown in Table 1 is based upon these calculations and provides a decision tool based on marginal analysis.

For a 250-pound animal, the marketing matrix works like this. Find the appropriate feed price along the left-hand column and then determine if your hogs are more likely to have a high ADG (2.2) or a low ADG (1.4). Once you have determined the appropriate row given the feed price and ADG, move along the row until you are in the column that correspond to the gender of the animal (or average of barrows and gilts) and the market price at which you can sell the hogs. If there is a "K" in the box, this means that the value of feeding another day is more than the cost of feeding another day -- so keep feeding. Alternatively, if there is an "S" in the box, it is likely costing you more to feed than the marginal revenue received for the additional pounds gained, so sell them as soon as possible. An "*" indicates that marginal revenue is approximately equal marginal cost.

Consider the following example. Suppose it's Monday morning and you have a marketing window of 7-10 days to move the hogs from the finishing barn. After that, your window disappears because you have new pigs moving into the barn. You want to know if you should sell the pigs on Monday, or perhaps wait until later in the week. Right now, the hogs weigh 250 pounds, it is costing \$0.05 for each pound of feed and the liveweight price that you can get for the entire week is \$0.32/lb. Do you sell hogs on Monday or keep them until end of the week, let's say Saturday? According to the marketing

matrix, you should keep feeding the hogs to maximize your profits. In fact, feed price would have to be as high as \$0.065 per pound before it would make economic sense to sell. And even then, only the barrows with low ADG should be sold. Surprisingly enough, with the current relatively inexpensive feed costs, hog prices have to be well under \$0.20 per pound before marginal cost is less than marginal revenue.

What can marketing your hogs on the margin mean to your bottom line? Suppose that in the above example, the hogs were marketed on Saturday instead of on Monday. In this case the marginal profit to the producer from keeping the hogs another five days is:

$$\begin{aligned} \text{Marginal Profit} &= \text{MR} - \text{MC} \\ &= \$0.32 * (\text{ADG} * 5 \text{ days}) - \$0.05 * (\text{daily} \\ &\quad \text{feed intake} * 5 \text{ days}) \\ &= \$2.24 - \$1.71 \\ &= \$0.53 \text{ per hog or } \$106 \text{ per semi.} \end{aligned}$$

Alternatively, if the hogs were considered to be high ADG, then the marginal profit would be as much as: \$3.52 - \$1.71 = \$1.81 per hog or \$362 per semi.

For producers who want to become more astute at marketing on the margin, the best feature of this matrix is that a degree in economics is not a prerequisite for implementation. In addition, the necessary information to customize this approach to your own farm is relatively straightforward. Simply plug your own numbers into the MR=MC equation. If you do not know the specific production factors for your farm, you can always use the marketing matrix provided. Just be sure to recognize that this matrix is built upon some general assumptions: the decision is being made when hogs weigh 250 pounds, ADG is 1.4 or 2.2, and feed intake is determined by NRC standardized equations for barrows, gilts and averages. In addition, the quality of your animals does not change by keeping them another day and the risk of death loss is not considered.

Table 1. MARKETING MATRIX EXAMPLE

Initial Weight = 250 pounds	Market Hog Price: \$ per liveweight														
	\$0.20			\$0.24			\$0.28			\$0.32			\$0.36		
	Avg.	B	G	Avg.	B	G	Avg.	B	G	Avg.	B	G	Avg.	B	G
ADG-H= 2.2															
ADG-L= 1.4															
L \$0.0350	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K
H \$0.0350	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K
L \$0.0400	K	S	K	K	K	K	K	K	K	K	K	K	K	K	K
H \$0.0400	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K
L \$0.0450	S	S	S	K	K	K	K	K	K	K	K	K	K	K	K
H \$0.0450	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K
L \$0.0500	S	S	S	S	S	K	K	K	K	K	K	K	K	K	K
H \$0.0500	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K
L \$0.0550	S	S	S	S	S	S*	K	K*	K	K	K	K	K	K	K
H \$0.0550	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K
L \$0.0600	S	S	S	S	S	S*	S*	S	K	K	K	K	K	K	K
H \$0.0600	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K
L \$0.0650	S	S	S	S	S	S*	S	S	S*	K*	S	K	K	K	K
H \$0.0650	S	K*	K	K	K	K	K	K	K	K	K	K	K	K	K

Certainly, any information you have about your own herd will improve upon the general assumption underlying construction of the matrix. Using your own production records and tracking daily feed intake and ADG near the end of the finishing phase will more accurately reflect marginal cost and marginal revenue. Nevertheless, doing the little things like marketing animals on the margin rather than the average can help you maximize profits and get the most bang for your buck. 🐷

Biosecurity in Swine Operations

By: Dr. Oliver Duran, DVM, Michigan State University Swine Veterinary Extension

The purpose of this paper is to highlight the areas of concern regarding biosecurity that you, as a pork producer, need to know about and control to avoid costly infectious diseases in your operation.

Risk factors involved in biosecurity:

Pigs - involved as carriers of infectious agents or subclinical (silent) infections

Trucks and Equipment

- Manure (from the wheels, the floor of the truck and on the driver's boots) See table 1 for information on survival of infectious agents in manure and other materials.
- Aerosol from hauling pigs (farms on the roadside with heavy hog transport traffic)
- Particular caution must be taken with removing dead stock- do not allow the truck to enter the farm.

Birds, Rodents, Wildlife, Pets - birds are carriers of many infectious diseases like Salmonella, erysipelas and avian tuberculosis. Ducks have been experimentally infected with PRRS virus and some researchers speculate these migratory birds may have contributed to the worldwide spread of the disease. *Trichinella spiralis* (trichina) has been found in a variety of wildlife, including raccoon, rat and possum. Rodents carry numerous diseases, *Leptospira* and *Salmonella* amongst others. Cats (kittens in particular) may carry *Toxoplasma* and should never be allowed on pork production units to safeguard against this serious food-borne pathogen. Dogs may be carriers of *S. hyodysenteriae* (the cause of Swine Dysentery).

Airborne Spread- this form of transmission is hard to demonstrate but involves mostly viral diseases. Airborne spread occurs particularly on humid, overcast days in areas without natural barriers (mountains, forest, lakes or oceans). Some infectious agents travel considerable distances in ideal conditions (see table 2).

People - The role of people in the transmission of diseases has been exaggerated. Introduction of disease is usually by passive transport on boots or clothing contaminated with hog manure. Workers or visitors are rarely actively involved in transport of infection in nostrils or respiratory tract.

Pigs

Introducing new pigs into the herd is the #1 source of dissemination of infectious diseases in hog farms. These incoming pigs enter the herd either from other farms or from a different section within the production system. Introducing pigs that are shedding an infectious agent will expose the herd to that new microorganism. Carrier pigs are those that have been exposed to an infection, have developed immunity and are healthy, but are still infected and capable of spreading the disease to naïve, non-exposed, pigs. This can be seen in pigs exposed to *Actinobacillus pleuropneumoniae* (APP) that survive the infection and maintain

low numbers of the bacteria in the tonsils. subclinically infected pigs are those that are infected with a disease, but do not show detectable clinical signs. One example of this is parvovirus infection, which will only cause visible signs after infecting pregnant gilts. Sometimes pigs do not show clinical signs because medication masks those signs. For example swine dysentery can be masked by treatment with lincomycin or carbadox, but without achieving complete elimination of the infectious organism. Once treatment is stopped, shedding will infect naïve, non-treated pen mates.

How to apply within herd biosecurity ?

Use All In/All Out production by room or by site.

Include sanitation between batches or groups

Age Segregation - Prevent mixing older exposed pigs with younger naïve pigs.

Pig Flow - Institute batch farrowing. Avoid excessive cross-fostering, back filling and bottle-necks.

How to reduce or eliminate the risk of introducing new diseases to the herd

Closed Herd- breeding own replacements from existing stock using artificial insemination to introduce improved genetics. This method of biosecurity eliminates the risks from introducing new animals, but may undermine productivity by using less advanced genetics and by increasing the time and expense required with maintaining different genetic lines.

Caution! Infectious agents like Pseudorabies virus, PRRS virus, Parvovirus, Hog Cholera virus, Brucellosis, and Leptospirosis can be transmitted through semen.

Purchasing pigs from a single source - reduces the chances of introducing new infections to the herd. Multiple sources increase the chance of disease introduction exponentially, if the risk of introducing a new infection is 5% from one source the chances for infection from two sources is 25%.

Herd Biosecurity Principles

- Locate herd away from potential sources of infection (roads, slaughterhouses, sales barn, other farms)
- Enclosed, bird proof facilities
- Perimeter fences and locked doors
- Preventing vehicles from entering farm unless emptied, cleaned and disinfected.
- Secure loading ramps to prevent pigs from re-entering the unit from the truck.
- Excluding cats and dogs from premises.
- Effective and continuous rodent control.
- Farm personnel does not come into contact with other hogs
- Providing boots and coveralls for visitors
- Requiring 24 or 48 hours without pig contact for visitors

(Continued on page 4)

How to apply biosecurity to protect against diseases from incoming breeding herd replacements?

Compile information on the health status of the farm of origin-

This can be achieved by means of a vet to vet conversation and examination of slaughter check data and production data.

Isolation of incoming stock

Isolation allows clinical signs to develop (Carrier pigs) and provides a chance for diagnostic testing (Serology or collection of swabs and manure samples) to detect subclinical or carrier pigs. In addition the time in isolation will allow recovery after the stress of transportation, before mixing with the rest of the herd.

Acclimatization (Exposure to herd microflora) can also be carried out in the isolation facility. Different techniques for exposure to pathogens are used- vaccination, feedback or contact with cull sows or diseased nursery pigs. The effectiveness of these acclimatization methods has not been well tested.

Isolation facility principles

- Time in isolation **60 Days**, with an absolute minimum of 30 days (Lately some veterinarians are advising 90 days or even purchasing weaner gilts to prevent PRRS outbreaks).
- The isolation unit doesn't need to be a state of the art

building, but must allow gilts to be protected from extreme temperatures and be situated a minimum of 100 feet downwind of the main production unit.

- Routines- inspecting gilts and feeding in the isolation unit must be the last job of the day and separate boots/coveralls should be dedicated to the building. Some producers color code the protective clothing to avoid mistakes.
- New boars should also be isolated before entering the farm. On multi-site operations the boars could be housed with market gilts.
- Farm Serology- on arrival then followed by sampling 30 days later.

Sample sizes needed to detect one positive animal (95% confidence):

- 30 samples - 10% prevalence
- 15 samples - 20% prevalence
- 10 samples - 30% prevalence
- 6 samples - 50% prevalence



These principles should allow some planning in terms of risk management regarding disease threats to your pig herd. This information deals with general biosecurity situations. For more detailed or specific plans consult with your herd Veterinarian or with Swine Extension personnel. 🐷

Table 1. Survival of Swine Pathogens in Manure/Urine/Environment

Parasites	Where	For How Long
Roundworms (Eggs)	Pen floor	years
Whipworms (Eggs)	Pen floor	years
Coccidia Oocysts	Pens, fittings	10 months
Viruses		
Pseudorabies Virus	Manure	2 days
	Urine	14 days
Parvovirus	Manure	Months
	feces	Rapid inactivation
PRRS	water	Well 8 days, city 11 days.
	TGE	room temperature
	Frozen	months
	Sunlight	Hours
Bacteria		
Swine Dysentery	pens	7 days
	Water	6 months
Erysipelas	Soil	6 months
Leptospira	urine	2 months
<i>Streptococcus suis</i>	Room temperature	10 days
	0°C	104 days
<i>Salmonella cholerasuis</i>	Ambient temperature	months
<i>Actinobacillus pleuropneumoniae</i>		no survival outside pig ?
		indirect ? clothing

Table 2. Airborne Spread of Pig Pathogens.

Disease agent	Minimum Distance to Avoid Disease
Mycoplasma	2 miles
PRRS, PRV	5 miles
Swine Influenza	3-4 miles
Foot and Mouth Disease	25 miles
(Agents that are spread in aerosol droplets) (Meters rather than miles)	
<i>Streptococcus suis</i>	300 meters (0.1 miles)
<i>A. pleuropneumoniae</i> (APP)	500 meters (0.3 miles)

Do You Have Farmworkers?

By: Larry Borton, MSU Telfarm Director

If you have employees, then you should have a copy of Circular A, Agricultural Employer's Tax Guide and be able to answer these five questions about taxes. The answers follow these questions.

1. Are you withholding from your workers' pay the proper amounts for federal income taxes, social security and medicare?
2. When are the deposits due?
3. Are your employees eligible for Advance Earned Income Credit (EIC) Payments?
4. Is your farm subject to paying Federal Unemployment (FUTA) Tax?
5. How can I get Circular A?

1) Cash wages you pay to employees for farmwork are subject to social security and Medicare taxes if either of two tests is met.

- You pay cash wages to an employee of \$150 or more in a year for farmwork, or
- The total you pay for farmwork (cash and noncash) to all your employees is \$2,500 or more for the year.

For 1999, the social security withholding rate is 6.2% for the first \$72,600 paid to each employee and 1.45% Medicare tax on all wages. This amount must be withheld from the employee's paycheck AND the employer must contribute a matching amount. If the wages are subject to social security and Medicare, then they are also subject to income tax withholding.

2) The deposits for social security, Medicare and income tax withholding (Form 943 taxes) are paid to an authorized financial institution or Federal Reserve bank and are due depending on whether you are classified as a 'monthly schedule depositor' or a 'semiweekly depositor'. Please note that these terms *do not* refer to how often your business pays its employees, or even how often you are required to make deposits, but identify which set of rules you must follow.

In general, if you reported \$50,000 or less as your deposits in the lookback period (the year 1997 is the lookback period for 1999), then you are probably a monthly schedule depositor. Your Form 943 taxes on payments in a calendar month are due by the 15th day of the following month. For many farms that fall in this category, a recommended method is to write the check for these taxes right after the last labor check is written for the month. That way you can avoid penalties from late payments. These are the general rules. There are exceptions and the 'semiweekly depositor' rules are a little more complicated. Refer to IRS publications for more details. They tell how to get Federal tax deposit (FTD) coupons. If you accu-

multate less than \$1,000 of net Form 943 taxes after paying any advance EIC payments, no deposits are required.

3) An employee who is eligible for the earned income credit (EIC) and who has a qualifying child is entitled to receive EIC payments with his or her pay during the year. Generally, the employer makes the advance EIC payment from withheld income tax and employee and employer social security and Medicare taxes. Employers are required to notify employees who have no income tax withheld that they may be able to claim a tax refund because of EIC. During 1999, if you pay an employee total wages of at least \$26,928, you must stop making advance EIC payments to that employee for the rest of the year.

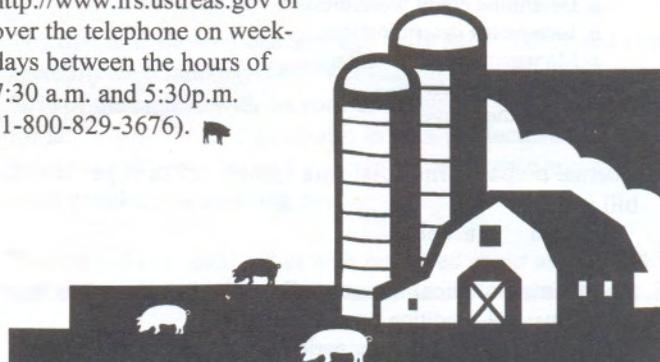
4) FUTA provides for payments of unemployment compensation to workers who have lost their jobs. Employers who meet either one of the following two tests probably have to pay FUTA.

- Paid cash wages of \$20,000 or more to farmworkers in any calendar quarter in 1998 or 1999
- Employed 10 or more farmworkers during at least some part of a day (whether or not at the same time) during any 20 or more different weeks in 1998 or 20 or more different weeks in 1999



There are exceptions for some family members and certain payments for agricultural workers. The FUTA tax rate is 6.2% on the first \$7,000 of cash wages you pay each employee and is generally deposited quarterly. You may receive a credit of 5.4% of FUTA wages for the state unemployment tax you pay. Generally, services or wages subject to the federal FUTA laws are also subject to the Michigan laws with a few exceptions.

5) These answers come from IRS publications. To remain in compliance and avoid problems and penalties, every farm operation that employs workers should have a copy of IRS Publication 51, Circular A, Agricultural Employer's Tax Guide. You can order it anytime through the IRS Web Site <http://www.irs.ustreas.gov> or over the telephone on weekdays between the hours of 7:30 a.m. and 5:30p.m. (1-800-829-3676).



What's Your Financial IQ?

The days of shoebox accounting for farmers is long past. These days most farms have their own computerized accounting systems.

But few farmers have any formal accounting. So how can you be sure you're making the most of your record keeping - or even tell if you're getting accurate information from your system?

In a world of increasing risk, financial knowledge plays a crucial role in determining how your farm copes with the ups and downs of production and prices. Here's a 20-question test to see how much you know.



- Accounting is the ...
 - Reconciliation of numbers
 - Language of business
 - Preparation of a tax return
- The basic set of financial statements consists of:
 - Balance sheet and cash flow statement
 - Income statement and notes to financial statements
 - All of the above
 - None of the above
- A set of GAAP financial statements are prepared in accordance with generally accepted accounting principles.
 - True
 - False
- A balance sheet prepared in accordance with GAAP consists of:
 - Revenues and expenses
 - Assets, liabilities, and equity
 - Profit determination of a business
 - Summary of cash activity
- In accounting a matching concept is:
 - Comparing assets with liabilities
 - Recording assets and expenses
 - Recording revenues and related costs incurred to generate those revenues
 - Properly classifying depreciable assets
- Which of the following are NOT proper uses for financial statements?
 - Determine credit worthiness
 - Income tax determination
 - Management information
 - None of the above
 - All of the above
- Accrual prepared financial data recognizes an expense when a bill is paid.
 - True
 - False
- An income statement measures financial data for a business:
 - Financial condition on a certain date
 - Financial condition for period of activity
 - Cash received and expended
 - Profit or loss determination for a period of time
- The going concern principle of accounting refers to the activity of an operation during a period of time.
 - True
 - False
- The market valuation of assets is always used in GAAP prepared financial statements.
 - True
 - False
- A cash flow statement reflects:
 - Cash income and expenses for a selected period
 - Only the change in cash position
 - Only the current cash balance
 - All cash receipts and disbursements for a given period of time
- Notes to financial statements include:
 - An explanation in narrative form of significant items and events related to the financial statements
 - A disclosure of significant accounting policies
 - Classification of current maturing notes
 - All of the above
 - None of the above
- The most important use of financial statements is:
 - Preparing income tax returns
 - Obtaining credit from a lender
 - Helping the owner and/or manager of a business make a decision
- The use of market valuation for assets is the preferred method of financial statement preparation.
 - True
 - False
- Consistency is using the same alternative accounting principles for successive reporting periods.
 - True
 - False
- Market valuation methods could be used in the following GAAP presentations.
 - Valuation of corn and bean inventory
 - Valuation of feeder pig inventory
 - Valuation of property and equipment
 - Both a and b above
 - Both a and c above
 - None of the above
- An all-inclusive income statement will include changes in the equity section of an entity.
 - True
 - False
- In agricultural production accounting, deferred production costs refer to:
 - Prepaid insurance
 - Investment in planted seed and applied chemicals and fertilizer
 - Value of property and equipment used in operation
 - Value of unpaid bills

19. Applied procedures used in accounting consist of:
- Recording financial and economic data
 - Summarization of economic data into consistently applied and comparable classifications
 - Analysis and interpretations of financial data
 - All of the above
 - None of the above

20. Financial measures can be grouped into five broad categories. All measure either financial position or performance. Name the five.

answers found on page 8



Youth Pork Quality Assurance Programs

By: Brian Hines, South Central Swine Agent

The Pork Quality Assurance program was rolled out in 1989 as a three level program. This program is for all pork producers, regardless of the size of their operation. The youth swine project meets the criteria of raising pork for consumption. The PQA program is focused on gearing producers/youth to producing the highest quality, safest product possible. This is so that we can remain competitive in the United States and in world markets, making pork the meat of choice.

The USDA Food Safety and Inspection Service has required Hazard Analysis and Critical Control Point (HACCP) principles to be put in place in meat packing plants. This seven principle system deals with identification, limits, monitoring, correction, and records in a very specific manner. This translates to the producer in that the packer is demanding a wholesome, consistent, and healthy supply of live product. The PQA Level III identifies reasonable farm practices that enhances the quality of product received by slaughter plants. To date, three packing plants are requiring PQA Level III certification of producers before they will bid on their hogs.

To be proactive with our youth and in tune with the demands of the industry it is time to address these items in the youth project. There are several methods to pursue. The first of which would be having each youth exhibiting swine (or any specie) sign on Exhibitor Agreement with a parent/guardian verifying practices with a signature. This form will be due at

fair weigh-in to be eligible for show and sale. The agreement covers the basics of animal husbandry, responsibility, and withdrawal periods to provide a safe product. This step is a part of the show rules and leaves the responsibility of the swine project care in the hands of the 4-H family.

The second step is offering PQA Level III certification to the group/organization operating and clerking the sale. This might be a local bank, junior livestock sale committee, farm credit organization, fairboard, or any other structured group. The fair group would then get a base market bid from a livestock marketing company to have animals sold as a group under their name. They then would be certified Level III. The youth have verified their project to have followed all guidelines set by the Food and Drug Administration and good animal husbandry was practiced. This system gives the responsibility of food safety to the youth who fed their swine.

The final step is just getting written. The National Pork Producer Council is creating a youth version of PQA Level III to allow for this niche in the swine industry. Veterinarians and MSU Extension personal are the two parties that can conduct certification. A county wide meeting could be coordinated as a swine workshop and all in attendance would receive certification. No time like the present to be proactive with your 4-H/FFA swine project. If you need more information call your local AOE Swine Agent. 🐷



Sucrose and Molasses in Diets

Three experiments were conducted to determine the effects of replacing lactose with sucrose and molasses in simple and complex diets for nursery pigs. The efficiency of milk products in nursery pigs is well documented. Recent research suggests that a source of highly digestible protein can be mixed with crystalline lactose and used to replace milk products (dried whey and dried skim milk) in nursery diets. Price and availability can dictate the use of either.

Sucrose has long been suggested as an energy source and appetite enhancer when used in nursery diets. The same holds true for molasses, although high dietary concentrations generally are not recommended. The underlying principle of the

three trials was to determine the effects of replacing lactose with sucrose and cane molasses on growth performance and nutrient digestibility.

The first trial showed that average daily gain (ADG) and average daily feed intake (ADFI) were not effected by replacing 50% of the lactose with sucrose or molasses. A trend occurred for slightly better feed/gain ratio in pigs-fed lactose. This may negate the expense saved for inclusion of sucrose and molasses depending on sourcing cost.

The second trial used a diet with no added sugar as a control and a higher level of dietary lactose, sucrose, and molasses

(continued on page 12)

(Answers to Financial IQ continued from page 6)

1. (b) Accounting is the language that quantifies the economic transactions of a business into meaningful financial measurements of position and results.
2. (c) Financial statements consist of all four components of balance sheet, income statement, cash flow statement, and notes to financial statements.
3. (True) Generally accepted accounting principles use the term GAAP as an acronym.
4. (b) The balance sheet consists of assets, liabilities and equity balances as of a definite date in time.
5. (c) The matching concept in accounting is the proper recording of revenues and the costs incurred to generate the revenues within the same time period.
6. (d) None of the above. All three of these are common uses of financial statements.
7. (False) Accrual basis financial statements refer to the recognition of income when earned and expense when incurred regardless of the timing of collections and payments.
8. (d) An income statement measures the operating results of a business for a period of time, such as a month, quarter or year.
9. (False) The going concern refers to the method of valuing the assets and liabilities of an entity that is expected to continue operating. A terminating entity could use different valuation methods.
10. (False) Cost is the generally accepted method of asset valuation in GAAP financial statements. Market valuation is an acceptable alternative for only certain types of selected assets that meet specific requirements, such as grain inventory in a readily determinable market.
11. (d) A cash flow statement shows all cash sources and uses for a selected period of time categorized by operating, investing and financing activities.
12. (d) All of the above. Notes should explain significant accounting policies and other information to make the financial statements more usable and readily understood.
13. (c) The most important use of financial statements is to help the owner/manager make decisions. Preparing income tax returns and obtaining credit are only specific elements within the overall management decision-making process.
14. (False) Using market values in financial statements is not the preferred method for a going concern. Consistently using historical costs yields better and more reliable results. Market valuations are more commonly applied in pending or potential liquidation situations, or for estate and gifting considerations.
15. (True) There may be different acceptable ways to treat certain transactions. To prevent distorting results, the selected alternative should be used in each of the reporting periods to obtain comparable results.
16. (d) Market valuations may be used in a GAAP presentation on inventory valuations if a readily determinable daily market is available on interchangeable and co-minglable commodities.
17. (True) The all-inclusive income statement shows all changes in equity from operations, non-operations and changes within the equity section, such as personal withdrawals and additional contributed capital if the business is a proprietorship or partnership.
18. (b) Deferred production costs are those incurred in a growing crop not yet available for harvest. This classification is part of the matching principle in which costs are not recognized as expenses until they become matchable with revenues (value of crops) produced from the incurred costs.
19. (d) The procedures and applications used in accounting let you quantify the economic transactions of your business for recording, summarizing and analyzing results and conditions. This is economic communications via the language of business.
20. The five categories of financial measures are
 - a. Liquidity - The ability to meet financial obligations as they come due.
 - b. Solvency - The ability to continue operation, and to repay financial obligations if assets are sold.
 - c. Profitability - The profit from use of land, labor, management, and capital.
 - d. Repayment Capacity - The ability to repay term farm debt.
 - e. Financial Efficiency - The effectiveness of the assets used to generate returns.How did you do?
Add up the number of correct answers, then figure your grade below.

A = 18 or more.	C = 10 to 14.
B = 15 to 17.	D = Less than 10.

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By Joe Daughettee
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Research Update



Piglet Growth Rate Drops

Following Dexamethasone Use in Sows

Six to seven percent of all post-farrowing sows are treated with dexamethasone (NAHMS survey data). Fifty-percent of producers use a dosage of 10 mg, 21% use 20 mg; the average dose was 12.6 mg. The purpose of this study was to determine the effect of dexamethasone injection on sow milk production. In dairy cattle, dexamethasone decreases milk yield by 20-50% for 1-2 days following treatment. Methods: 24 sows, 12 treatment and 12 controls. The authors treated sows with 14 mg dexamethasone IM once daily on post-farrowing days 4 and 5. Lactation daily gain in the piglets nursing treated dams was 10.4% lower on days 5 and 6, and was 3.5 lower on days 7-10 post-farrowing. Conclusion: Dexamethasone treatment of post-farrowing sows decreases growth rate in their piglets for the duration of lactation following treatment.

Source: Meyers K, Borgman J, Norby B, Straw BE. Proceedings, American Association of Swine Practitioners (AASP) 30: 45-46, 1999.

Busch's Unit Offers Meat According to Cooking Time

Busch's (Ann Arbor, MI) new 51,700 sq ft store in Livonia, MI, is merchandising meat based on the time it takes to cook the product rather than by the variety or cut of meat. The merchandising effort required a total reset and repositioning of the service and self-service displays at the store. The service case, which is devoted exclusively to value-added items, features about 40 items. The self-service case contains steaks, chops, ground beef and similar meats. Busch's is an 11-unit grocery store chain. The variety of value-added items at the new store is at least 50% larger than the assortment at other Busch's stores. For items that customers might not be familiar with, such as marinated Szechuan chicken breasts, Busch's posts product cards with cooking times and instructions.

Source: January 11, 1999 / Supermarket News / Roseanne Harper

Packers Within the Region (Part II)

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

This article is a continuation of the report entitled, "Packers Within the Region", printed in the fall, 1998, MSU Pork Quarterly Vol. 3., No. 3. The intent of this two part series is to provide information from different packer buying programs in which Michigan pigs can be marketed. There is no intent to choose an optimum buying program but to point out similarities and differences. However, producers can use this information to determine which program best fits the pigs they market. In this article there are four packers featured.

The Packers

Armour Swift Eckridge, Inc. Typically known as Swift, Inc., this packer was briefly mentioned in the previous report. Since that time they have changed their buying program and the new program is outlined here. The closest of three plants operated by this company is located in Louisville, KY and slaughters approximately 8,000 per day. The other two are located in Worthington, MN and Marshalltown, IA.

The optimum carcass weight for this packer is 170 to 213 lbs, which is approximately, 230 to 288 lbs live weight. Below is a summary of the carcass weight discounts of this program. Carcasses that are below 155 lbs are discounted but not graded. Thus these lighter weight carcasses (under 209 lbs live weight) are penalized for weight but not further adjusted for carcass merit. Carcasses that weigh less than 148 lbs are discounted further than what is presented here.

Carcass merit is determined by estimating percent lean with a Fat-o-meter. Carcasses that grade higher than 59% lean are paid no further carcass merit premium, which has become a common feature of several buying programs. The carcass merit base within this system is 49.1 to 51%. Carcasses grading within this range receive base carcass weight price and no further premium. Premium classifications change every two percentage lean points from the carcass merit base. Carcasses grading below 41.1% are discounted further than what is listed here. For further information contact the Louisville plant at 502-582-0396.

Hormel Foods Hormel Foods operates 3 slaughter plants with 2 west of the Mississippi River and one east of Mississippi. Those west of the Mississippi are located in Austin, MN and Fremont, NE while the plant closest to Michigan is Rochelle Foods, located in Rochelle, IL. The plant in Rochelle slaughters approximately 7,000 per day and is the smallest of the three Hormel plants. Carcass weight and last rib fat depth are used to determine carcass value. Last rib backfat is measured on the midline of the carcass. Carcass value is defined as a percentage value of carcass base price. To determine final price, the carcass value for a carcass is multiplied by the carcass base price. For example, if the car-

carcass base price is \$38/cwt and the carcass value is 101%, final carcass price is \$38.38/cwt (101% of \$38).

For carcasses whose last rib backfat is less than 1.11 in., acceptable carcass weight range is 174 to 242 lbs (235 to 327 live weight). An exception to this is carcasses that weigh 167 to 173 lbs with less than .7 in. backfat. These very lean carcasses will not be discounted or docked for light weight. Carcasses that weigh less than 153 lbs are discounted further than what is indicated here. It should be noted that for pigs that weigh approximately 235 to 281 lbs and have less than .51 in. of last rib backfat, carcass value decreases. The carcass value percentage decreases for carcasses that have less than .51 in. of backfat compared to those that have .51 to .70 in. of backfat within the carcass weight range of 174 to 208 lbs. For more information about Hormel contact the plant in Rochelle, IL at 815-562-4141.

J.R. Routh Packing, Co. Routh Packing is located in Sandusky, OH. The slaughter plant is operated at a daily capacity of 3,700. This company tends to slaughter lighter weight pigs with an optimum live weight window of approximately, 208 to 267 lbs. However, they will buy carcasses that weigh less than 149 lbs (approximately 200 lbs, live weight) but at a discounted rate. Carcasses that weigh 140 to 149 lbs are graded and receive a carcass merit adjustment; however, the base price is docked by 2% per lb from 150 lbs. For example a 140 lb carcass is docked 10% while a 149 lb carcass is docked 2%. The base price is the carcass base price. Carcasses that weigh less than 139 lbs are not graded and docked by the indicated amount.

Carcass grading is accomplished with a Fat-o-meter. Backfat and loin depth are used to determine carcass value. Value is reported as a percentage and is multiplied by the base carcass price to determine final carcass price. The base for backfat depth is 1.1 in. except for carcasses that weigh 140 to 154.9 lbs. Those carcasses have a carcass value fat depth base of 1.0 in. The base for loin depth is 1.7 in for all carcasses. Carcasses that weigh more than 200 lbs (268 live weight) are graded and adjusted for carcass merit; however, final carcass price is discounted by 6% of the carcass base price. For more information regarding Routh Packing contact Dick Kurt or Dean Smith at 419-626-2251.

Excel Corp. Excel Corporation is a wholly owned subsidiary of Cargill, Inc. Excel operates three pork packing plants, one in Beardstown, IL, another in Ottumwa, IA and the third in Marshall, MO. From many points in Michigan, the IA and IL plants are approximately the same distance. The Beardstown plant slaughters approximately 16,000 per day while the Ottumwa plant slaughters 14,500 per day. Carcass value is determined from both carcass weight and carcass merit. Carcass merit is estimated percent lean. Within a carcass weight

(continued on page 10)

(Packers continued from page 9)

range, carcass value is either above or below 100% of the base carcass price depending on the base percent lean for a carcass weight class.

For lighter carcasses (163-169) base percent lean is 51%. As carcass weight increases base percent lean drops to 49%. However when carcass weight goes above 229 lbs, base percent lean increases again to 51%. Increases in carcass value stop at 55% lean for carcasses that weigh 170 to 221 lbs. Carcasses that are higher for percent lean are assigned the same carcass value as those 55% lean carcasses. This is also true for carcasses that weigh 229-224 lbs but not so for those 163-169 lb and 222-228 lb carcasses. As with other packers discussed, final carcass price is determined by multiplying carcass value by base carcass price. For example if the base carcass price were \$38/cwt and a carcass weighed 185 lbs and was 49% lean its final carcass price would be \$38/cwt (100% of \$38) or \$70.30 total. If this carcass were 51% lean, its final carcass price would be \$39.14/cwt (103% of \$38) or \$72.41 total.

Within the region, MLE Marketing does have an ongoing pro-

curement relationship with Excel Corp. If you are interested in learning more about the Excel buying program contact your local MLE Marketing branch or call the East Lansing office at 317-337-2856.

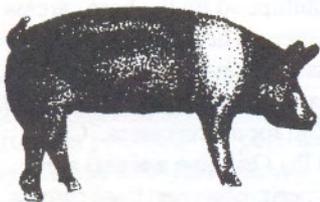
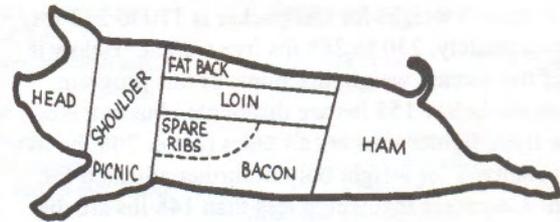
MLE Marketing As you know MLE Marketing does not own slaughtering facilities. However, they have been and continue to be an active marketing cooperative. As mentioned previously, they do work closely with Excel Corp. within this region. Yet, they also work with other major packers on a regular basis as well as marketing sows, boars and off weight pigs.

Conclusion

With the closure of Thorn Apple Valley's fresh pork division the marketing process and market channels have changed. However, access to competitive markets has not been hindered for Michigan pork producers. To maintain their competitive position Michigan producers should determine how to best adapt to the changing marketing system. If you wish further information, please contact your local Swine AOE Agent or Ron Bates at 517-432-1387. 🐷

Swift, Inc. Carcass Weight Discounts

Carcass Weight, lbs	Approx. Live Weight, lbs	Discount/Premium, \$
148-154	200-208	-8.00
155-162	209-219	-4.00
163-169	220-229	-1.50
170-213	230-288	0.00
214-220	289-297	-1.75
221-228	297-308	-3.00
229+	309+	-5.00



Swift, Inc. Carcass Merit Adjustments

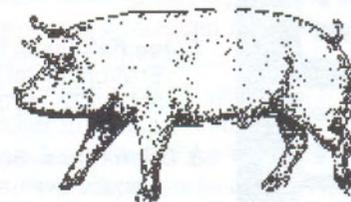
Percent Lean, %	Discount/Premium, \$	Percent Lean, %	Discount/Premium, \$
59+	6.30	49.1-51	0.00
57.1-59	5.30	47.1-49	-1.00
55.1-57	4.30	45.1-47	-2.00
53.1-55	3.30	43.1-45	-3.50
51.1-53	2.30	41.1-43	-7.00

Routh Packing Carcass Merit Program Summary

Carcass \Live Wt, lbs	Premium \Discount	Carcass \Live Wt	Premium \Discount
Less than 110 \ less than 148	60% base dock	150-154.9 \ 201-207.9	Graded, base 1.0 in. fat
111-123 \ 149-165	30% base dock	155-199 \ 208-267	Graded
124-139 \ 166-187	20% base dock	200+ \ 268+	Graded, 6% base dock
140-149 \ 188-200	Graded, 2% dock per lb, (base) from 150 lbs.		

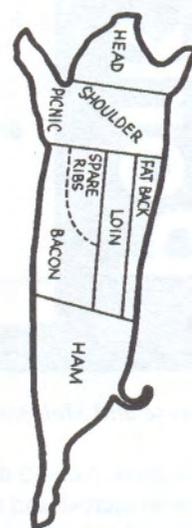
Hormel Carcass Value Matrix

Grade	1-	1	2	3	4
Last Rib Backfat, in.	Less than .50	.51-.70	.71-.90	.91-1.10	1.11-1.30
Carcass\Live Wt., lbs					
153-159\207-215	85%	85%	82%	78%	72%
160-166\216-224	95%	95%	94%	90%	82%
167-173\225-234	100%	100%	99%	95%	87%
174-180\235-243	102%	103%	103%	100%	93%
181-187\244-253	103%	104%	104%	101%	94%
188-194\254-262	105%	106%	104%	101%	95%
195-201\263-272	106%	107%	105%	101%	95%
202-208\273-281	108%	109%	106%	101%	96%
209-215\282-291	109%	109%	106%	101%	96%
216-222\292-300	108%	108%	105%	101%	95%
223-242\301-327	103%	103%	100%	100%	89%
244+ \328+	97%	97%	95%	97%	83%



Excel Carcass Value Matrix

Carcass Weight, lbs	155-162	163-169	170-191	192-221	222-228	229-244
Live Weight, Approx.	210-219	220-229	230-259	260-299	300-309	310-330
Percent Lean, %						
57+	95	103	107	108	107	104
56	95	103	107	108	106	104
55	94	103	107	108	106	104
54	94	103	106	107	105	103
53	94	102	106	107	104	102
52	94	101	104	106	103	101
51	94	100	103	104	102	100
50	93	99	101	103	101	99
49	92	98	100	101	100	98
48	90	97	99	99	98	96
47	88	96	98	98	97	95
46	86	94	97	97	96	94
45	84	87	96	96	94	92



Youth Livestock Fitting Camp June 28-30

A statewide fitting camp will be conducted at Branch County Fairgrounds, Coldwater, MI on June 28 to June 30. The three-day camp is being expanded from a southwest regional camp to a state wide camp on first come, first serve basis. The camp is open to all 4-H members age 11 and older. The camp encourages camping but fairground buildings are available for accommodations. The cost for the camp is \$50 for all youth and chaperoning adults. A Competitive Livestock Grant defrays most of the cost. Each youth selects and ranks their top specie choices from: swine, beef, sheep, dairy, starter calf, goats, poultry, rabbits, horses or dogs. The specie granted to the youth will be their focus for the entire three days. The instructors for each specie have state or national experience to pass on to the youth. MSU will also provide additional specialists in many other areas.

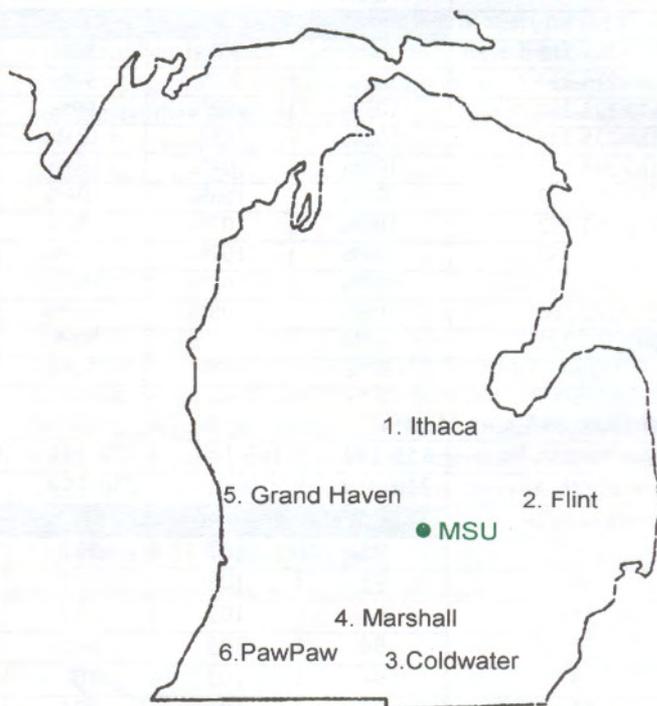
The swine area utilizes a "hands on" approach to nutrition, showmanship, preparation, and carcass work. All swine and feed will be provided to the youth and they need to bring sup-

plies needed to feed, show, and care for their assigned hog. The nutrition element covers most all ingredients in their pure form before being mixed into a swine diet. A carcass will be cut into primal and then deboned to show the ratio of bone, fat, and muscle. Several showmanship classes will be done to improve the existing skills of members. In addition, swine judging, ultrasound, an obstacle course, and computer learning labs will be taught and utilized. Each swine participant will achieve Pork Quality Assurance level III youth status through the NPPC program. The evening festivities have interaction of all groups in skill-a-thons, a dance, and sports activities.

To gain more information on this opportunity call your local MSU Extension office to get the official sign up forms or contact Branch County Extension for more details at (517)279-4311. They are due in early May, but species are limited in order to give individual attention to each youth participant. The AOE swine team hopes to see you there. 🐷

All comments and suggestions should be directed to:

1. **Gerry May, North Central Swine Agent**
Farm Records, Production Systems
(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. **South West Swine Agent**
Farm Business Mgt.
(616) 657-7745



(Sucrose and Molasses continued from page 7)

was in diets. At 0-10 days, the replacing half or all at the lactose with sucrose and the molasses had no effect on ADG, ADFI, and F/G. However, the pigs fed the diet without added carbohydrate sources had growth performance that was similar to pigs fed more complex diets. At day 10 to 30, added lactose, sucrose, and molasses had no effect on growth performance of the pigs. Comparisons within the added carbohydrate sources indicated a trend for greater overall ADG when sucrose and molasses were used to replace lactose. However, replacing 100% at lactose with sucrose or molasses reduced F/G when compared to a 50% replacement rate.

The third trial was designed to test that the presence of simple sugars in complex diets may be without benefit and to demonstrate the possible effects of easily digested carbohydrates in simple nursery diets. For the period 0 to 30 days, a trend occurred to improve ADG and F/G with complex diets and improved F/G with inclusion of sugars. An interaction of diet

complexity plus sugar additions resulted in better F/G when simple sugars were included. Finally, diets with sucrose tended to be used more efficiently than diets with lactose.

The three experiments showed complex diets were of great benefit in the period immediately following weaning. The trials showed limited usage of sucrose and molasses could provide advantage and disadvantages depending on your diets and sourcing costs of your lactose source. Though replicated still work has to be done in this area but may offer a cost savings and not having a reduction in ADG or F/G. 🐷

Source: Kansas State University Swine Day 1998, researchers I, Marromichalis, J. Hancock, R. Hines, J. DeRouche, B. Seanne, S. Sorrell, H. Cao

