WASHINGTON STATE UNIVERSITY EXTENSION

Central Washington Animal Agriculture Team

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Monitoring Your Show Pig's Progress

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Raising quality livestock for junior fairs and shows requires a combination of both a good feeding and animal health program, as well as good overall management. These programs should not be treated as separate subjects, particularly when feeding market hogs. When you have a market project animal, you must also remember you are raising a food animal and your goals should include producing a safe, wholesome and high quality product for consumers.

The first step in producing a quality end product is the selection of a healthy feeder pig with good growth potential. Selecting a feeder pig in the right weight range for your market swine project is critical. However, you must remember show pigs are being fed for a particular date, rather than a specific weight and finish (like the pork industry). It is difficult even for experienced producers to determine the exact date a pig will be ready to go to market. Therefore, it is necessary to monitor your pig's weight and back fat, adjusting the diet and exercise accordingly. If the pig is not in the right weight range, often it is either "held back" or "pushed" to meet the weight limits of the show or fair. This often leads to questionable practices that are not in the best interest of the pig and reflect poorly on the image of youth projects and the pork industry. Humane care is essential in providing a quality, wholesome product for the consumer. Therefore, when selecting your feeder pig, check with the swine producer to see if a scale is available to help take the guesswork out of selecting a pig of appropriate weight.

Depending on breed and frame size of the pig, most animals will achieve the desired level of back fat (10th rib fat) or finish (0.6 to 0.8 inches) and live weight (260 to 280 pounds) between five to six months of age. Gilts tend to grow a little slower than barrows, but are usually leaner.

How much your feeder pig should weigh at the time of selection is determined by knowing how much it should weigh at show time, how many days there are until the show, estimating how much it will gain, and then doing a simple calculation. One of the most difficult things in the selection process is predicting how fast your pig will gain weight because of the many variables

that influence rate of gain. Average daily gain will be affected by breed, genetics, sex of the pig, and environmental temperature, as well as the knowledge and overall management practices of the exhibitor raising the pig. An average of 1.6 to 1.8 pounds per day should be expected for a healthy, growthy pig on a growing and finishing ration. Pigs generally will gain approximately 1.5-1.7 pounds a day during the grower phase, up to about 110 pounds of body weight, and then daily gain should increase to approximately 1.8-2.2 pounds per day as the pig increases in size during the finishing phase. For show pigs to be classified as a Washington Hog of Merit (WSU publication EB1461E) the pig must gain a minimum of 1.70 pounds per day over the test period. It is important to remember pigs often grow slower during the hot summer months. However, there are a number of management strategies you can implement to minimize this reduction in gain. There are a couple of in-depth fact sheets on managing for environmental temperatures on the web site: www.animalag.wsu.edu/swine

It is important to remember the weight range for market pigs may be slightly different for each fair because of where they market their pigs, so it is important to contact the show management for current weight limits. Once you know how many days until the show or fair, what the target weight or weight limits are for the show, and you've predicted a reasonable expected weight gain, you can calculate a good weight range for selecting your feeder pig. For example, if you select a growthy, moderate framed feeder pig on May 1, and the show weigh-in date is August 19, the pig has 110 days to grow. At an average daily gain (ADG) of 1.7 pounds per day and your ideal weight is 265 pounds at fair time, the pig must weigh approximately 78 pounds at the time of selection. This is calculated by multiplying the number of days by the expected gain and subtracting that number from the target ending weight; 265 - (1.7 x 110) = 265 - 187 = 78. You may want to follow this same procedure with several rates of gain and ending weights so you feel comfortable with a weight range for the selection of your feeder pig.

If you are a new swine project member, you may want to give yourself a little more leeway. Therefore, you may want to project only a 1.5 pounds per day of gain and a target weight of 265 pounds. With this example, you would select a 100 pound feeder pig; 265 - (1.5 x 110) = 265 - 165 = 100. However, it is important to avoid selecting a pig that is too big or too old that the rate of gain must be limited by severe feed restrictions, which could result in an undesirable carcass or inhumane feeding practices.

Project feeder pigs are often in short supply and you may need to make purchase arrangements months in advance of the actual date you pick up your pig. Check with your leader, Extension Educator or others for possible project pig sources. Buying animals from a farm or single source has some advantages. These animals are generally not exposed to other pigs from which they could pick up diseases. Also, the producer can give more attention to you as a customer, offering suggestions about feeding and raising your animal.

Regardless of whether you buy your pig at a special feeder pig sale or directly from a reliable farm, there are a

number of things you need to know: time of the sale and driving directions to the sale or farm, cost (approximate cost or pre-set price), preferred method of payment (cash, check or money order), etc. Make sure you arrive on time. Be respectful of the producers' time, facilities and animals. Producers have taken time out of their busy schedule to sort and pen some of their better animals for your selection. Be courteous, keep any negative comments to yourself and always be sure to thank the producer before you leave. For biosecurity reasons, some producers prefer that you not enter their facilities to select your own pig. In this case, just make sure that the seller is aware of the size and type of pig you want, and then trust them to pick the best available animal for you at that time. Be sure male animals have been castrated correctly.

When purchasing pigs for project animals from outside the state of Washington, be sure that you have obtained a Certificate of Veterinary Inspection and an animal import permit number from the Washington State Department of Agriculture (WSDA) Animal Health Department prior to transporting the animal to the state of Washington. Also make sure you have the producer fill out or complete the Producer Affidavit portion of the *Producer Affidavit & Market Swine Health Record* (WSU publication C1055E). This is required for all hogs that go through commercial processing plants to fulfil the requirement for Country of Origin Labeling (COOL). This record form is available at the following websites: http://animalag.wsu.edu/Youth Producers or at http://pubs.wsu.edu. Also observe good biosecurity practices by thoroughly cleaning your vehicle before you go to pick up your animals. At least 24-48 hours should have elapsed since exposure of the vehicle to other pigs. Your clothes and foot wear should be clean and disinfected after the last contact with other pigs.

Major stress can occur when you bring your feeder pig home. The change in feed and stress of transport are the primary ones. To minimize the stress associated with the change in feed, find out what type of feed the pig has been receiving and either purchase a 2 to 4 day supply from the producer or their supplier. Then make changes to a new feed over several days. Young feeder pigs will often scour or develop diarrhea because of the multiple stressors that occur at the change of ownership. Therefore, you should consider the administration of antibiotics (injectable or in the feed or water) for the first few days after you bring them home.

Regardless of how you transport your pigs, make sure the vehicle or carrier is free of sharp edges and is appropriate for the weather and temperature. Clean, straw-bedded dog carriers can be appropriate for smaller feeder pigs. During cool and/or wet weather, drafts should be minimized and protection provided from the damp and cold. Thick straw bedding should be used in cool or cold weather. If you are transporting young pigs in a pickup, make sure the bed is covered and the sides are solid to minimize drafts. However, allow for some air exchange. Shade and wet shavings are appropriate for older pigs or market hogs during transport during hot weather.

Adequate facilities are another crucial factor in making sure your market hog gains well. Elaborate

facilities are not essential for a successful project, but you do need to provide the proper environment to ensure your pig stays healthy and grows well. The determining factors are both the size of the pig and the environmental temperatures. Many project pigs are purchased between 40-90 pounds. The comfort zone for these young animals is 70º to 85º F, and they can easily suffer chilling that can impact their health and growth performance. Therefore, it is critical to consider their effective temperature when preparing the facilities and transporting these pigs home, particularly when night-time temperatures drop well below their comfort zone. In the winter and spring it is important to provide an insulated area in the facility that is draft-free, with deep, dry straw bedding and possibly zone heating for young feeder pigs. As pigs grow, their comfort zone drops to 60º to 75ºF and it becomes critical to provide shade and cooling to ensure good growth during the hot summer months. Many swine project members use fans and misters during hot weather.

Sunburns can be common in white breeds of pigs, especially during the spring and summer months or when transporting pigs without cover. Sunburns are most serious in young pigs. Symptoms include rapid redding of the skin and considerable pain. Pigs outdoor can be protected by providing shaded covering and access to good wallows. There are also approved sunscreen products for swine from animal supply companies. Sunscreen products approved for swine are not the same as products you can purchase for humans at your local drug store, as human approved sunscreens have not been approved for food animal use and could result in residue violations of meat products.

When you purchase your feeder pig, be sure you ask for and write down critical information pertaining to the animal you have selected. Refer to the *Producer Affidavit & Market Swine Health Record* (WSU Publication C1055E) for critical information to ask the producer. Effective and accurate record keeping is becoming more critical each day because of the demands from domestic and export markets and the U.S. government for disease control and surveillance. Knowing the health care history will help you design a health program of your own, including: when and what booster shots you need to give your pig; how soon to treat for internal and external parasites; and if medication is needed in the feed. The key to a healthy pig is a good preventative health program. Check with the show management for any required vaccination program. Many fairs recommend that pigs be vaccinated for certain diseases such as erysipelas and atrophic rhinitis. Your pig should also be dewormed if it hasn't been within the last month. Pigs should be dewormed routinely to maintain a good growth rate. The deworming schedule should be based on the label instructions.

When giving your pig any medications or animal health products, always follow the label directions. Follow withdrawal time requirements carefully for all market hogs because they will enter the human food chain. Failure to follow withdrawal times can result in illegal residues in the carcass. The misuse of antibiotics, vaccines, pesticides and various other animal health medications in meat animal production can have serious legal consequences, including civil and/or criminal prosecution. Violative drug

residues also can cause condemnation of the carcass and loss of payment, as well as jeopardize the safety and quality of the food you are producing.

If you have a choice of the route of administration of any medication between subcutaneous and intramuscular, always choose the subcutaneous route. Intramuscular injections do affect the quality of the food product you are producing. They not only cause lesions in the form of abscesses or scars, but they can result in the surrounding muscle tissue being unacceptably tough. Therefore, if you must give an intramuscular injection, it should be given in the neck region because this is a lower value area of the carcass.

To ensure proper growth it is critical to provide a balanced commercially prepared ration design for growing and finishing pigs. There is no one magic feed that will make a champion, it is the total nutritional program, including the feeding schedule, the exercise and the careful daily observation during the growing and finishing phases that help make a champion. Make sure to read the label on the feed to make sure you are feeding the appropriate feed for the size of the pig, because a pig's nutritional requirements change as the pig gets older. You should change the feed to accommodate these changes. However, never make abrupt changes in the type or amount of being fed. Many may start with a starter diet, moving to a grower diet and finally transition to finisher ration. When you choose a grower ration it should contain 18-20% protein, 0.9-1.0% Lysine and less than 5% fiber. The finisher diet should contain 16-18% protein, 0.8-0.9% Lysine and less than 6% fiber. Fresh water is the most important nutritional factor for any animal. Water should be kept cool and clean. If nipple waters are used, flow should be checked on a regular basis. Water nipples or troughs should not be kept in direct sun because the metal or tubing can get very hot and pigs will be reluctant to drink.

Your pig should consume between 4 to 8 pounds of feed per day. Pigs can be either self-fed or hand fed at least twice daily. To make sure that your pig is growing on schedule, you should weigh it on a regular basis. Always weigh at the same time of the day to avoid variation due to feeding and watering. If you do not have access to a scale, there are less accurate methods of estimating weight, such as using a weight tape or using two body measurements (body length and heart girth) and then applying a formula. Weight tapes can be purchased at many feed stores or livestock catalogs. You may also use a fabric tape measure. When measuring your animal, you need to determine the heart girth and body length in inches. The heart girth is the pig's circumference just behind the elbow. The body length should be the distance from the top of the head between the ears to the tail head. Then use the following formula: weight = $\frac{\text{heart girth} \times \text{heart girth} \times \text{length}}{400}$.

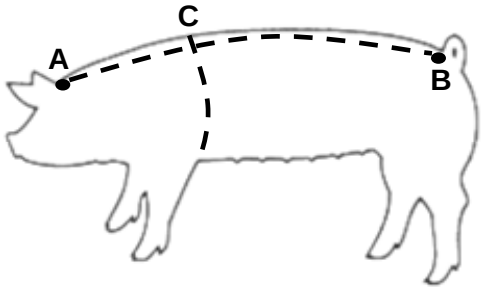


Figure 1. Body length and heart girth measurement points.

Monitor your pig's performance by weighing it preferably every week, or at a minimum every two weeks, and calculate its daily gain since the last weight. Record its weight and date on a chart. If its daily gain has fallen off, ask a knowledgeable adult for some help in determining why. It may be a simple matter of: making a minor change in facilities to minimize the stress on the pig, changing the amount of feed given, the energy level of the ration, or addressing a health related problem.

Sometimes pigs that are too big early in the feeding period need to be held to a lower rate of gain for a period of time to prevent them from exceeding the proper show weight. This can be done by reducing the daily intake or by reducing the energy level. Large hogs can also be limit-fed in conjunction with an exercise program to hold the pig's weight gain to a minimum. If you choose to limit the rate of growth, consider doing this mid-way in the feeding period and finish the pig on a regular finishing ration for the last three weeks before the show to give it a trim, finished appearance. This will also usually result in a more desirable carcass.

Skin care is also very important for show preparation. Most market shows do not allow oil-based products to be used for fitting pigs on show day, only water or approved swine show supplies may be used. However, skin and hair care should begin at home by brushing your pig at least twice a week and increasing to daily from the time you purchase your pig. This removes dry skin cells and increases the natural oil to be released from the hair follicle. It also helps the pig become accustomed to being handled. There are also many different products designed for use on animals that may be used to condition the skin while you work with your project at home.

The days prior to and during the fair can be stressful. With this in mind, it is beneficial for your pig to be prepared for the setting of the fair prior to the actual event. Four to five days prior to the show, feed and water the pig in the same equipment that will be used at the fair. If the animal will be drinking chlorinated water at fair, add an approved electrolyte for swine to the water to mask the odor and taste. Continue to add electrolytes to the water throughout the fair or until the pig becomes accustom to the water. When you arrive at the show do not feed the pig immediately upon arrival. Allow the animal to calm down and become accustom to its new surroundings.

References:

Miller, P. S., R. Moreno, T.E. Burkey, and R.K. Johnson. 2008. Estimation of the Lysine Requirments for High-Lean Growth Pigs. Nebraska Swine Report. Digital Commons @University of Nebraska - Lincoln.

Kircher, P. and M. S. Carlson. 2003. Swine Care, Selection and Showmanship. MU Extension, University of Missouri-Columbia.

Table 1. Projected feed intake and average daily gain of the typical show pig.

Show Pig Project: Feed Projections

Purchase Date: Depends on show date
Beg. Wt. 80 lbs (70-90 lbs)
Birth Date: 8-10 weeks

Weigh-in Date Shows typically have 80-120 day test
Weight: 100 lbs
ADG goal: 1.4-2.0 lbs/day

Show Date: Know the date of the fair
Finish Wt: 265 lbs (245-285 lbs)

Rule of Thumb: Pigs will normally eat 3-5% of their body weight

Self feeders are a common way to feed young growing pigs. When first introducing pigs to self feeders, fasten the lid up so they will learn where to eat. After a few days let the lid down and monitor the amount of feed the pigs are consuming to make sure they are using the feeders correctly. Keep enough feed in the feeder to keep feed available at all times, however be careful to not put so much feed in the feeder that spoilage occurs. Self feeders are to ensure pigs have feed at all time--not to reduce work or requirements to check on your animal's care and well-being!

If your pig is getting too fat or putting on weight too quickly, you may need to remove the self feeder and limit feed the pig two times a day. To keep the animal content you will want to feed the pig at least 2.5-3.0% of his body weight in feed. You can also reduce gain by reducing the amount of energy in the diet by substituing less energy dense feeds like alfalfa or whole oats. Be carefull not to add more than 10-15% of these alternative feeds as they can cause the ration to become unbalanced for the essential amino acids or B-vitamins. Exercise during the cool of the day can also be used to maintain weight.

FEEDING

Date In	Feed Type	% CP Levels	# Days	Feed (lbs/d)	Total Grain	Expected ADG	Total Period Gain	End Period Wt
Days 1-10	Starter/Grower	20-22	10	3	30	1	10	80
Days 11-20	Grower	18-20	10	4	40	1.3	13	90
Days 21-30	Grower	18-20	10	4.5	45	1.5	15	103
Days 31-40	Grower	18-20	10	5	50	1.5	15	118
Days 41-50	Grower	18-20	10	5	50	1.5	15	133
Days 51-60	Grower	18-20	10	6	60	1.8	18	148
Days 61-70	Finisher	16-18	10	7	70	2	20	166
Days 71-80	Finisher	16-18	10	7	70	2	20	186
Days 81-90	Finisher	16-18	10	7	70	2	20	206
Days 91-100	Finisher	16-18	10	8	80	2	20	226
Days 101-110	Finisher	16-18	10	8	80	2	20	246
Days 111-120	Finisher	16-18	10	8	80	1.8	18	266
			120		**725**	**1.70**	**204**	**266**

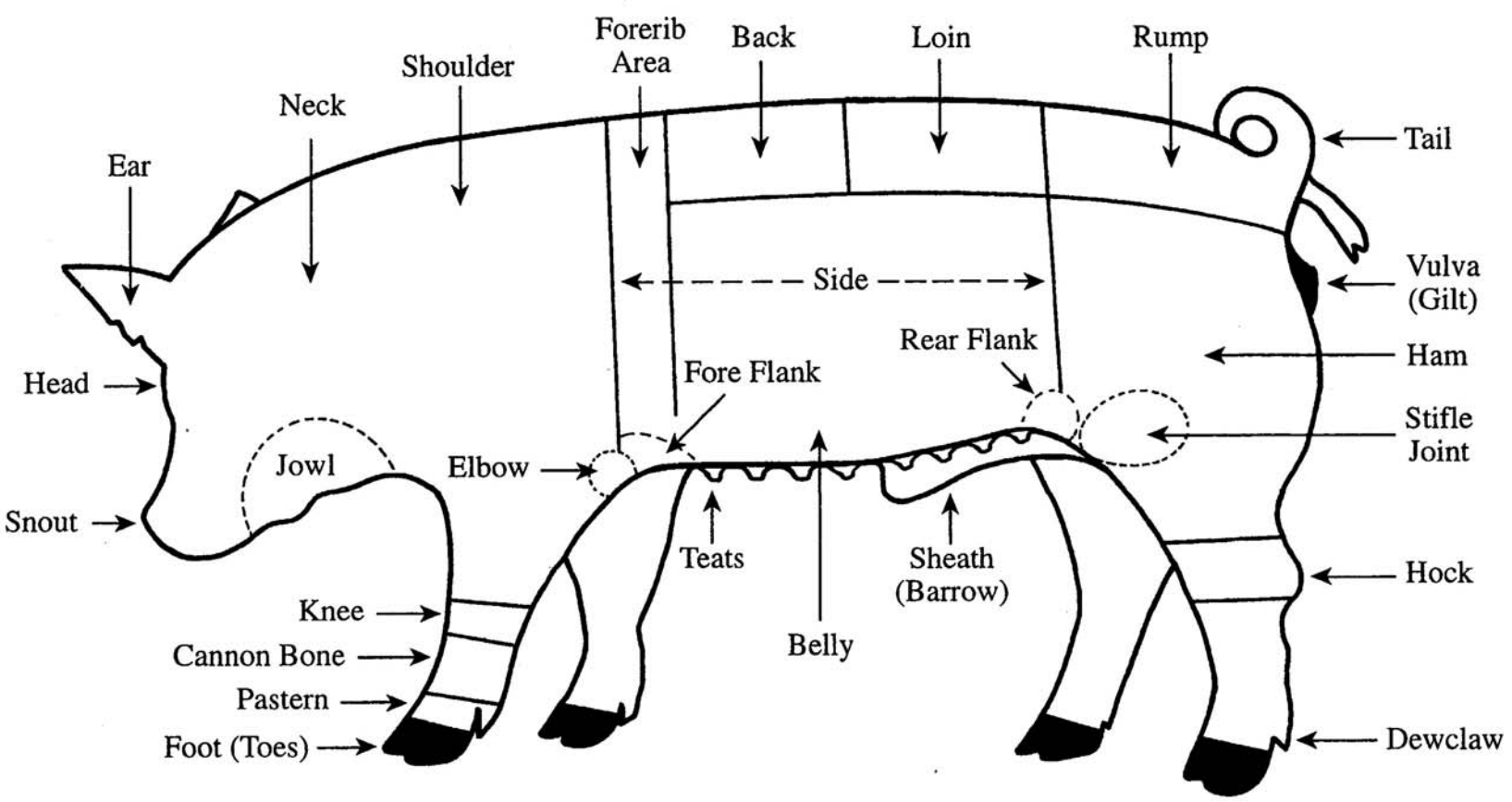
Unlike ruminant animals, cattle and sheep, pigs are unable to synthesize essential amino acids and B vitamins by the microbes in the rumen. Therefore, special attention must be given to providing pig a well-balanced diet for their specific level of growth (weight and age). The most efficient way to meet your pig's nutritional requirements is to feed a formualted diet for the pigs specific phase of growth.

Stage of Production	Avg Wt.	CP %	Lysine%	ME, Mcal/lb	Fat %	Ca%
Starter	**35-100**	**20-22**	**1.0-1.5**	**1.55-1.60**	**5.5-6.5**	**.65-.75**
Grower	**100-150**	**18-20**	**.90-1.0**	**1.55-1.60**	**4.5-5.5**	**.60-.65**
Finisher	**150-260**	**16-18**	**.80-.90**	**1.55-1.60**	**3.5-4.5**	**.50-.55**

CP = Crude Protein, ME=Metabolizable Energy, Ca=Calcium

These calculations are AVERAGES. DO NOT use these numbers as your sole feeding guidelines. You must pay attention to feed bunk management, feed nutrient analysis, animal's genetics, level of exercise, and environmental conditions. Remember exteme hot, cold, or wet enviromental conditions will negativaly impact your animal's weight gain or feed efficiency.

Figure 2. Body parts of a market swine.



SWINE LEARNING LABORATORY KIT

Quality Assurance and Animal Care: Youth Education Program

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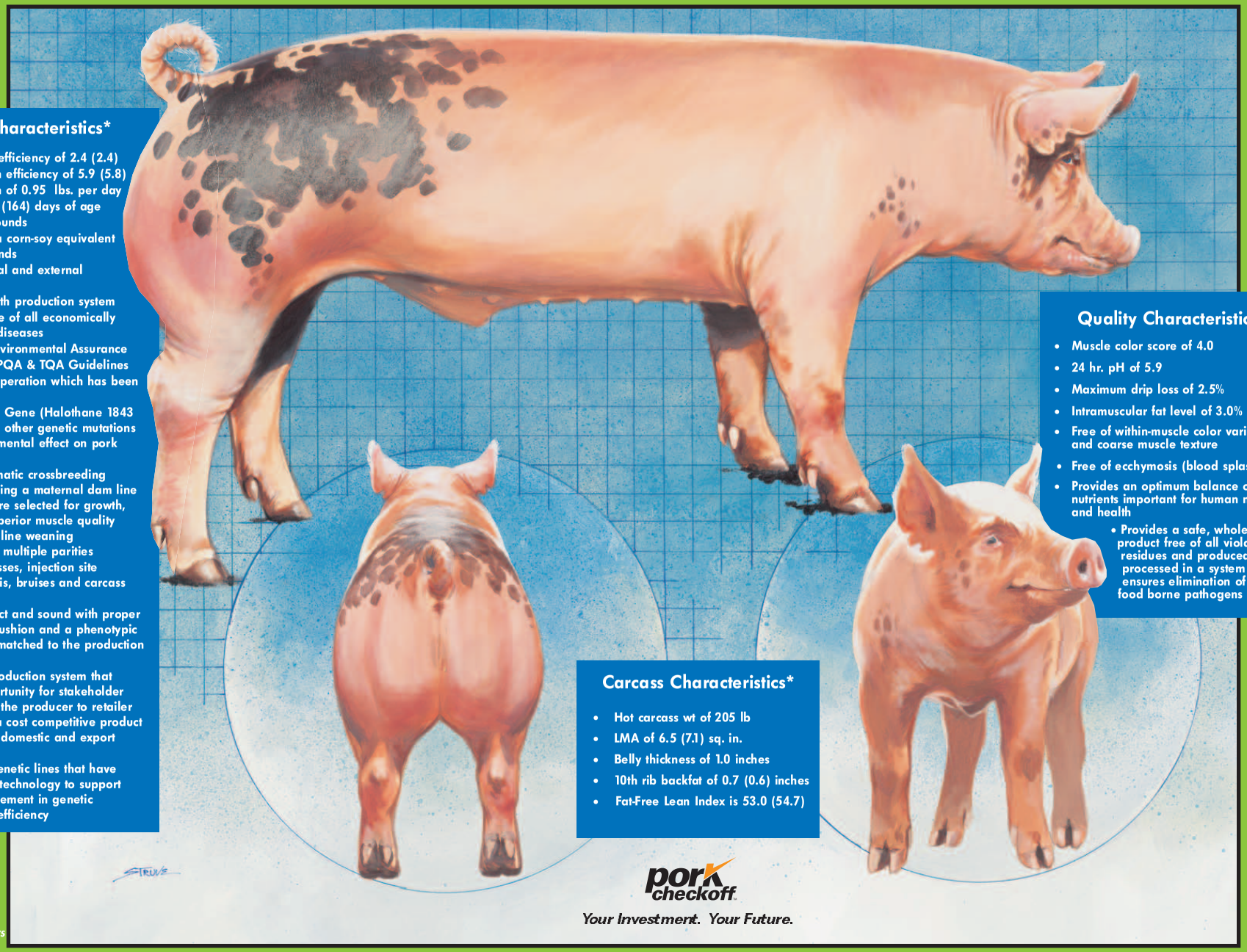

Production Characteristics*

- Live-weight feed efficiency of 2.4 (2.4)
- Fat-free lean gain efficiency of 5.9 (5.8)
- Fat-free lean gain of 0.95 lbs. per day
- Marketed at 156 (164) days of age
- Weighing 270 pounds
- All achieved on a corn-soy equivalent diet from 60 pounds
- Free of all internal and external parasites
- From a high health production system
- Immune to or free of all economically important swine diseases
- Produced with Environmental Assurance
- Produced under PQA & TQA Guidelines
- Produced in an operation which has been SWAP assessed
- Free of the Stress Gene (Halothane 1843 mutation) and all other genetic mutations that have a detrimental effect on pork quality
- Result of a systematic crossbreeding system, emphasizing a maternal dam line and a terminal sire selected for growth, efficiency and superior muscle quality
- From a maternal line weaning >25 pigs/yr after multiple parities
- Free of all abscesses, injection site blemishes, arthritis, bruises and carcass trim
- Structurally correct and sound with proper angulation and cushion and a phenotypic design perfectly matched to the production environment
- Produced in a production system that ensures the opportunity for stakeholder profitability from the producer to retailer while providing a cost competitive product retail price in all domestic and export markets
- Produced from genetic lines that have utilized genomic technology to support maximum improvement in genetic profitability and efficiency

* *NOTE: all numbers in parentheses represent gilt numbers corresponding to the barrow numbers shown*

Quality Characteristics

- Muscle color score of 4.0
- 24 hr. pH of 5.9
- Maximum drip loss of 2.5%
- Intramuscular fat level of 3.0%
- Free of within-muscle color variation and coarse muscle texture
- Free of ecchymosis (blood splash)
- Provides an optimum balance of nutrients important for human nutrition and health
- Provides a safe, wholesome product free of all violative residues and produced and processed in a system that ensures elimination of all food borne pathogens

Carcass Characteristics*

- Hot carcass wt of 205 lb
- LMA of 6.5 (7.1) sq. in.
- Belly thickness of 1.0 inches
- 10th rib backfat of 0.7 (0.6) inches
- Fat-Free Lean Index is 53.0 (54.7)