



Project Pig Production Planner

Scott Williams, Cache County, and *Darrell Rothlisberger*, Rich County

Start by Selecting the Appropriate Age/Weight Hog

There are many factors to consider when selecting a market hog for your 4-H project animal. Seek out reputable hog producers who produce hogs with high quality genetics and growth potential. Discuss the health and feeding program the hogs have received and follow these recommendations to assure your project animal can reach its growth potential.

Select your market hog with the end in mind. Optimal show hog weights are customarily between 245 and 280 pounds at fair time. Review the contest rules for the show you plan to attend and select project animals that will meet minimum and maximum weight restrictions. Use Table 1 to help you in your selection. For example, if your fair/show is August 14 and if you plan to take possession of your market hog on May 15 of the project year, you would want to select a feeder pig that is 14 weeks old weighing about 87 pounds. Pigs that are heavier for their age than the table shows will tend to be faster growing and more feed efficient, so plan your project with that in mind.

Hogs will grow at differing rates depending on their genetic growth potential, quality and quantity of feed, environmental factors (too warm, too cool), and health reasons such as worms. Weigh your pig every two weeks if possible but at least twice between purchasing it and the fair. Calculate the pig's average daily gain $[(weight\ 2 - weight$

$1)/days]$ and compare it to the average daily gain in Table 1. This will give you an idea of how well your pig is growing and if you are on target to reach the desired market weight by fair time. With that information you can make adjustments to your feeding and management practices.

If you do not have access to scales, you can get a weight estimate by using a measuring tape. You should measure body length (BL) and heart girth (HG) in inches as shown in Figure 1. The body length is measured from the base of the tail to a mid-point between the ears. You will have the best luck doing this if the hog is eating from a feed pan when you take the measurements. Measure the heart girth just behind the elbow. Use the following formula to calculate the weight in pounds: $[weight = (HG \times HG \times BL)/400]$. If the resulting number is less than 150 pounds, add 7 pounds for the total weight.

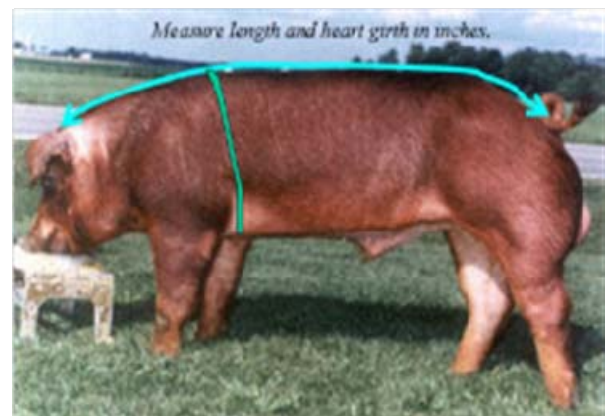


Figure 1.

Table 1.

Weeks of Age		Weight (lbs)	Average Daily Gain (ADG)	Daily Feed Intake (lbs)	Total Weekly feed (lbs)	Total Feed / period	Protein level (%)
27	14-Aug	255	2.3	6.9	48	369	14-16
26	7-Aug	239	2.0	6.0	42		
25	31-Jul	225	2.0	6.0	42		
24	24-Jul	211	2.0	6.0	42		
23	17-Jul	197	2.0	6.0	42		
22	10-Jul	183	1.9	5.6	39		
21	3-Jul	170	1.9	5.6	39		
20	26-Jun	157	1.7	5.1	36		
19	19-Jun	145	1.9	5.6	39		
18	12-Jun	132	1.7	5.1	36		
17	5-Jun	120	1.6	4.7	33	279	16-18
16	29-May	109	1.6	4.7	33		
15	22-May	98	1.6	4.7	33		
14	15-May	87	1.6	4.7	33		
13	8-May	76	1.4	4.3	30		
12	1-May	66	1.4	4.3	30		
11	24-Apr	56	1.3	3.9	27		
10	17-Apr	47	1.1	3.4	24		
9	10-Apr	39	1.1	3.4	24		
8	3-Apr	31	1.0	3.0	21		
7	27-Mar	24	1.0	3.0	21	87	18-20
6	20-Mar	17		3.0	21		
		Total Gain: 238 lbs ADG: 1.62 lbs	Total Feed: 735		Ave: 5.0 lbs/day		

Feeding Options

Most market project hogs are fed in a self-feeder where the hog has free choice of when and how much feed they eat. Self-feeding is more convenient and the pigs can eat whenever they are hungry. Check the feeder daily to make sure the feeder is working properly and the pigs do not run out of feed.

Hand-feeding requires feeding your hog twice a day, feeding as much fresh feed as they will eat before the next feeding. As a rule of thumb, a market hog will eat from 2.5% to 5% of their body weight in feed per day. Smaller pigs will generally eat more for their weight than larger pigs. Pigs will require about 3.3 pounds of feed for each pound of gain. Use this information to help you in hand feeding your pig or to predict how much feed you will need to have on hand for your project.

Fresh, clean, cool drinking water is the most important part of your pigs ration. Your pig will not eat if it is thirsty, which will reduce weight gain.

Nutrition Is Essential to Growth

Proper nutrition is essential to the growth and proper muscle development of the project pig. Many commercial feeds will have analyses for crude protein, crude fat, and crude fiber on the feed tags. Of those, crude protein is most important since it is the building block for lean meat. Commercially prepared feeds are balanced with the appropriate amounts of protein, energy and additional types of nutrients. The nutrient requirements change as the project pig grows and rations need to be adjusted accordingly. It is important to note that barrows (castrated male hogs) generally eat more feed, grow slightly faster, and will have more fat to lean meat

than gilts (female hogs). Gilts will generally have a leaner carcass than barrows and will eat less feed per pound of gain, but require a higher level of protein in their feed. The protein percent (%) column in Table 1 lists the minimum level of protein that should be in the ration for pigs at various weight ranges. The first number in the protein % column is for barrows and the second number is for gilts. If feeding barrows and gilts together it is recommended that the higher protein level be fed. These are the *optimal* nutritional levels necessary to support the daily rates of gain listed in the table. Feeds with greater amounts of protein may improve performance slightly, but they will also cost more.

Hog Health

Selecting hog project animals from a reputable grower and then keeping them healthy is vital to the success of your market project. Consult with the grower to find out what vaccinations and other medications your animal has received. Your 4-H leader, Extension agent or veterinarian will be able to offer suggestions.

Deworming should be done when you first receive your pig, then again about one month later. Use a dewormer effective against whipworms such as *Safe-guard*® (fenbendazole) or *Atgad*® C (dichlorovos). Always read and follow instruction on the product label and keep good records of treatments including date and the names of products used.

Monitor Growth

Livestock shows may have minimum and maximum weight restrictions for market hogs. Review the show rules and monitor the growth of your project hog to assure that it reaches a market weight within the required weight range. Obtaining regular weight gain information will help determine if your hog will reach the desired weight or exceed the acceptable weight come fair time. Compare the weights you obtain with the information listed in Table 1. If you find that your hog is gaining weight too quickly, you have several options to control the gain. First would be to exercise your hog daily.

Exercise during a cool part of the day to avoid stressing your hog. Exercise will slow down weight gain and also train your hog for the showmanship contest. Second, you can replace 10%-15% of the high energy grain in the ration with whole oats or alfalfa pellets. This can be done by adding 5-7.5 pounds of oats or alfalfa pellets to a 50 pound bag of feed, mix well and add to the free-choice feeder. The third option is to take the hog off of free-choice (ad lib) and hand-feed the hog twice per day. The hog should receive at least 2.5% to 3% of their body weight in feed daily. Adding alfalfa pellets or whole oats will provide lower energy feed that will still satisfy the hog's hunger and will then be more content.

If you discover that your hog is not growing at a rate to make market weight by show time, a variety of factors could be the cause. Examine for external or internal parasites or for symptoms of other health issues and treat appropriately. Examine feed to make sure the quality has not been decreased due to moisture or contamination from birds or cats.

Next, make sure that your pigs have protection from extremes in temperatures. Shade and water misters will cool your pig on hot day. An appropriately sized shed will give protection from wind and rain on cool days. Being more comfortable will encourage your pig to eat more and eat more often.

You may also want to make an effort to get your pig up and moving several times a day. Once the pig is up (s)he will go eat before returning to rest.

Adding fat to the pig's ration will also increase weight gain. Fat contains 2.25 times more calories than grains (carbohydrates). You can add about a 1/3 cup corn oil to the daily feed ration. Mix up only the amount of feed for each day. Do not mix up large quantities of feed with oil since it will go rancid quickly especially in warmer temperatures. Milk is often added to the diet to add fat. Liquid milk or dry milk pellets can be used. Your pig will gain weight in the form of fat with the addition of fat to the diet which is not beneficial to the appearance of your pig, so use this feeding method only if necessary to reach the minimum weights for the show.

Feed Caution

It is important to remember that you are producing a market animal which will be harvested and consumed by someone. Any modifications to a normal hog ration should be ethical with the health and safety of your project pig and the consumer in mind.

Some prepared hog rations will contain low levels of medication, especially in starter rations. Such medications will have withdrawal periods specified on the feed tag. The withdrawal period is the amount of time from the date the medicated feed is eaten by the hog to the day of harvest. Generally, the withdrawal times are 14 to 21 days depending on the medication. Read the feed tag to make sure that there are no medications or other substances in the ration requiring a withdrawal period fed during the finishing phase.

Estimating Project Costs

Knowing your costs related to the market hog project is an important part of your project. Market animal projects are generally sold at a market project animal auction for prices higher than the usual market prices for each species. The life-skill lessons taught by participation in a market animal project are difficult to place a dollar value on. However it is important to understand the economics involved in the project. The two largest costs in the project are the purchase price of your

hog and feed costs. By using the rule of thumb that it takes roughly 3 pounds of feed to produce 1 pound of gain, you can estimate the amount of feed you will need for each growing phase. For example: Table 1 illustrates that it will take about 279 pounds of feed to take your project hog from 47 pounds to 132 pounds, the “growing” phase. Price of “grower” pig feed at the local farm supply store is \$16.89 for 50 pounds. Divide 279 pound of feed by 50 pounds per bag and you get 5.6 bags of feed, which is roughly how many bags of feed you will need for that phase. Multiply the price per bag of \$16.89 by the number of bags needed, 5.6 for a total cost of \$94.58 for that phase. Repeat that process for the finishing phase (369 pounds of feed / 50 pounds per bag = 7.4 bags X \$16.39 / bag = \$121.29). Add the feed costs together (\$94.58 + 121.29=\$215.87) which is your estimated feed costs.

With an estimation of your feed costs you can estimate the total cost of your project. So, for example; if you paid \$100 for your feeder pig, plus feed costs of \$215.87 and then add any additional cost such as wormer (\$12 estimate) and some show supplies and you will then know your total costs. In this example your total costs would be about \$327.87. Armed with this information, review the auction prices for hogs at your sale from other years. Are you likely to make money or lose money on your project? What adjustments can you make to lower your cost to make your project more economical? Enter your estimates in Table 2 to help you estimate your costs for your project.

Table 2.

	Amount	Cost per item	Total cost
Purchase price or value			
Feed costs: Starter Phase			
Feed costs: Growing Phase			
Feed costs: Finishing Phase			
Health supplies			
Show supplies			
Other			
Total			

References

Sprinkle, J.E. 1998. "Swine Nutrition for Show Animals." A publication of Arizona Cooperative Extension.
<http://ag.arizona.edu/pubs/animal/az1055.pdf>

Albrecht, J.E., J.C. McConnell, J. Adams. 1995. "Swine Feeding Suggestions." Circular 509. A publication of Clemson University Extension.
<http://clemson.edu/psapublishing/pages/ADVS/EC509.PDF>

Platt, T. Date unknown. "Feeding Your Market Hog: a Youth Guide." Washington State University

Extension. http://lincoln-adams.wsu.edu/4-H/Feeding_Market_Hogs.pdf

Swine Resource Handbook. 2001 The Ohio State University, 4-H Circular 134R

Horney, M. R. Date unknown. "Project Pig Production Planner." Unpublished document, University of California Cooperative Extension

Lawhorn, B. 2006. "Keeping Show Pigs Healthy." Texas A & M University AgriLife Extension System, Publication E-418.
<https://agrilifebookstore.org>

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