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## Feed and Growth

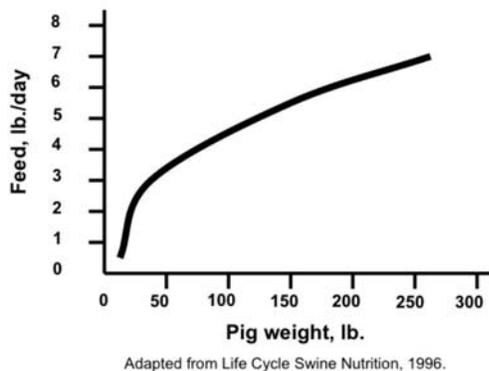
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Growing pigs typically are on self-feeders and can eat as much feed as they want. The following relationships are true for pigs on self-feeders, or in other words pigs fed ad libitum.

### Feed Intake

As pigs grow, daily feed intake increases (Figure 1). The energy-to-amino acid ratio of the diet should be adjusted as pigs grow so that nutrients are supplied to match performance needs.

Figure 1. Daily feed intake.



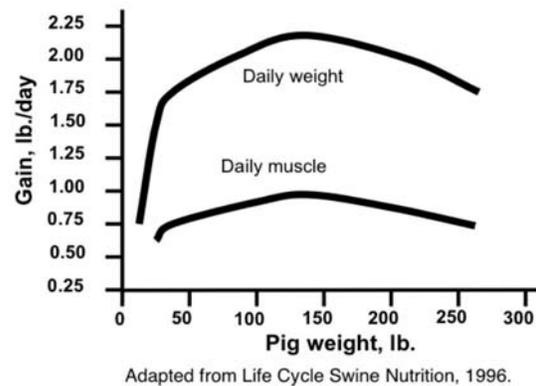
A pig's feed intake is controlled by the energy density of the feed. If fibrous feeds are added, pigs will eat more feed. If fats or oils are added, pigs will eat less feed. Pigs that are cold will eat more feed than pigs that are comfortable, and pigs that are hot will eat less. Gender affects feed intake in pigs that are larger than 50 pounds. Barrows will eat more feed than gilts. Sick pigs will eat less than healthy pigs.

### Average Daily Gain

Young pigs grow very rapidly. Rate of gain declines as the pigs grow beyond 150

pounds. Daily muscle gain is similar but not identical to daily gain (Figure 2).

Figure 2. Daily weight and muscle gain.



In addition to muscle, the pig is adding size and weight to its organs, fat reserves, and bones.

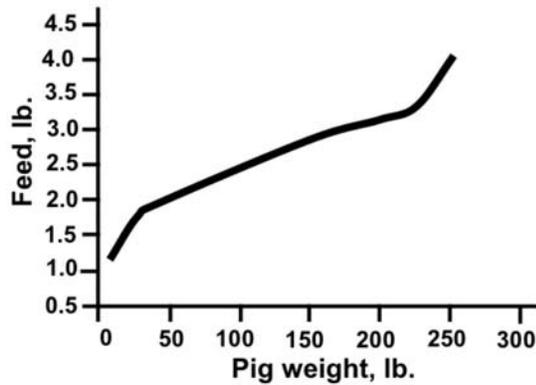
Average daily gain (ADG) is largely a result of feed intake. After 50 pounds, barrows eat more feed daily than gilts and usually gain weight faster. Genetics also influences ADG with some breeds and lines growing faster than others, often because they eat more feed.

### Feed Conversion

Small pigs convert feed into body weight very efficiently. As pigs grow, it takes more feed per unit of gain (Figure 3). Nearly four times the amount of feed is needed for a 250 pound pig to gain one pound of body weight as compared to a 10 pound pig gaining the same amount. This is because the larger pig has more body weight to maintain than the smaller pig. Total feed intake relative to maintenance needs decrease as the pig grows in size, thus a 250 pound pig must eat

more feed than a 10 pound pig to gain the same amount of weight.

**Figure 3. Feed required per unit of gain.**



Adapted from Life Cycle Swine Nutrition, 1996.

Leaner pigs are more efficient at converting feed into weight. Gilts are leaner than barrows and tend to have better feed conversion. Pigs that are cold will use more feed to maintain body temperature than pigs that are comfortable. Sick pigs will not convert feed to gain as effectively as healthy pigs. Feed intake, average daily gain, and feed conversion are optimal when pigs are healthy, comfortable, and cool. Table 1 provides estimates of growth, feed consumption, and feed conversion for pigs.

**Table 1. Estimated growth, feed consumption and conversion for pigs<sup>1</sup>.**

Age, d	0	50	100	160
Weight, lb	3	50	175	265
Feed intake, lb/d	0.5	3.2	6.0	7.0
Gain, lb/d	0.3	1.8	2.1	1.75
Feed : Gain	1.1	2.0	3.0	4.0

<sup>1</sup> Adapted from Life Cycle Swine Nutrition, 1996.

### Additional Resources

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