Pig Body Weight Variation. A Hidden Nemesis.

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Pig body weight variation is a serious problem that is often overlooked until pigs are ready to go to market. Variation then becomes an urgent and significant management problem as pigs require sorting and remixing, and light weight culls are removed to another site so that facilities can be washed and prepared for the next group of pigs.

Pig body weight variation doesn't just happen in the finisher. Variation magnifies itself throughout the life of the pig, and becomes greater as pigs age. For example, at weaning, the average weight of a group of pigs may be 13.0 pounds, with a range of body weights from 8.0 to 18.0 pounds. This is a 10.0 pound spread. By the end of the nursery period, the average weight of this group of pigs may be 66.0 pounds, with a range of body weights from 46.0 to 86.0 pounds. The range of variation has now increased to 40.0 pounds. By the time the group of pigs approach market weight, the variation in pig body weight from the lightest to the heaviest may be 100.00 pounds or more!

What is an acceptable amount of variation? Dr. John Patience from the Prairie Swine Centre in Saskatoon, Saskatchewan makes the following recommendations. For pigs at weaning, the Coefficient of Variation (CV) should be 20.0% or less. For an accurate estimation, at least 100 randomly selected pigs need to be weighed individually. For pigs coming out of the nursery, the CV should be 15.0% or less. For an accurate estimation, at least 50 randomly selected pigs need to be weighed individually. For pigs at market weight, the CV should be 10.0% or less. For an accurate estimation, at least 50 randomly selected pigs need to be weighed individually before the first group of pigs leaves the facility for market.

There is Good News!

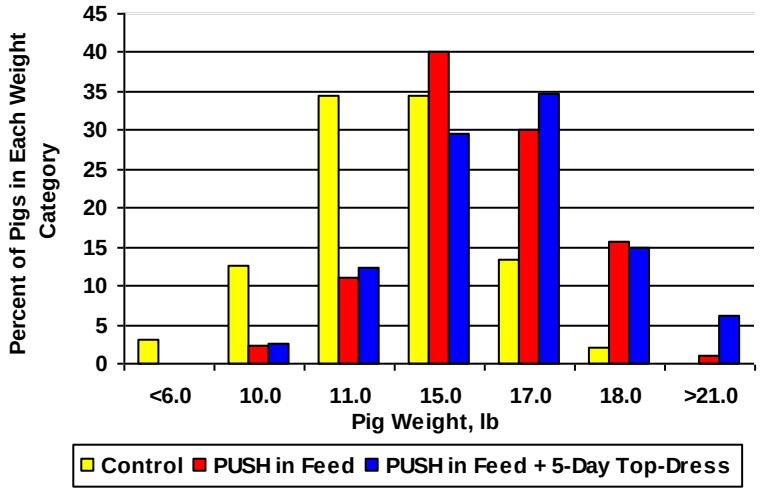
The good news is that pig body weight variation can be reduced. Management practices and products that reduce variation early in a pig's growth phase provide the biggest benefits.
In the process of developing and testing PUSH®, Land O'Lakes Purina Feed research scientists conducted a research trial in collaboration with scientists from the University of Minnesota. This study included three dietary treatments: 1) A control lactation diet 2) The control diet containing PUSH® 3) As #2 + PUSH® top dressed for the first 5 days after farrowing. Dietary treatments were fed from the day sows were moved to farrowing crates, and throughout the 19 day lactation period. Research results demonstrated that sows fed either PUSH® treatment weaned litters which were significantly heavier than litters from control sows (Table 1). Additionally, and perhaps even more exciting was that PUSH® significantly improved pig uniformity within litter, as shown in Figure 1. Heavier pigs at weaning with less body weight variation means less sorting and reduced days to market.

Table 1 : A 10lb heavier Litter Weaning Weight can be achieved from Sows fed PUSH® feed

	Treatment			
	Control	PUSH®	PUSH® + top-dress	SEM
No of Sows	52	53	54	
Mean Parity	2.79	2.85	2.89	
Lactation length, d	18.5	19.0	18.6	0.25
Wean to Estrus Interval, d	4.5	4.4	4.7	0.14
Feed Intake lb/d	13.94	14.50	13.99	0.46
Litter weight at 2days, lb	36.6	37.9	36.0	1.2
Litter weaning weight, lb[c]	131[a]	142[b]	141[b]	3.2
Pre-weaning mortality, %[d]	8.8	8.4	7.7	1.3

ab Means in the same row with different superscript differ (P < 0.05)
c Litter size after transfer and lactation length were used as covariance
d Pigs a d 2 was used as covariance
Source: University of Minnesota, Waseca

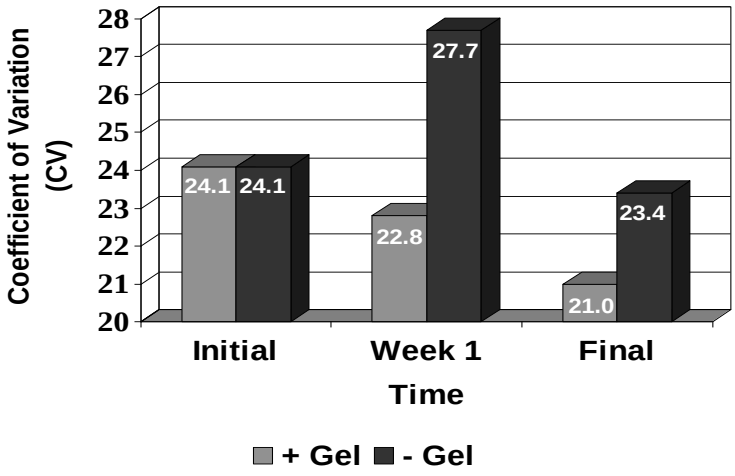
Figure 1 : PUSH® Sow Feed reduces Pig Weaning Weight Variation and shifts the Weaning Weight Distribution Curve to the Right



PUSH® sow feed is available in 60lb bags and is directly added at 60lbs/ton complete feed. It can also be top dressed. The key to its effectiveness is to ensure each sow receives 0.36 lbs/ day from the moment she enters the farrowing house, through the lactation period.

To reduce variation even more, feed Gel to all pigs as they enter the nursery. Research at the LongView Animal Nutrition Center, Missouri, has shown that pig weight variation in the nursery can be reduced by using Gel (Figure 2). Gel was fed 0.5-1lb/head/day for 7 days in total. After day 3-4, Gel was mixed in the feed. At the end of the nursery period, pigs that were not offered Gel had a CV for weight of 23.4, while pigs fed Gel had a CV for weight of only 21.0. In addition, pigs consuming Gel were 1.7 pounds heavier!

Figure #2
Body Weight CV for Pigs Consuming Gel
Initial Weight; 9.1 lbs



LongView Gel Studies

Begin with the end in mind. To reduce pig weight variation at marketing time, feed PUSH® feed to sows in lactation and PuriGel or UltraCare® Gel to all pigs as they enter the nursery.

Learn more on www.GelResearch.com and www.feedPUSH.com

For further information, please see your local feed sales representative at a Land O'Lakes Feed Co-op or Purina Mills Dealer. Visit us on-line at www.LOLFeed.com, www.PurinaMills.com

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