The Importance of Feed Intake
John Patience

Surveys have shown that feed intake varies by at least 25% among commercial farms. This may under-estimate the problem, since accurate data on feed intake is not readily available on many farms. Some of the data which is available, if estimated from long-term averages or calculated on an inventory basis, fails to identify short-term deviations from this average. Once feed intake has been identified as a problem, the next step, obviously, is to resolve it. Where does one look and what does one do to assist farms?

Different genotypes are suspected of having different capacities for adlibitum feed intake; however, actual comparative data is very rare. One must be very careful in not ascribing too much of the “blame” for a feed intake problem on genotype.

Management practices, as discussed at left, should be scrutinized to ensure that feed intake is being optimized under all circumstances, no matter what the genotype. High temperatures depress feed intake as the animal seeks to minimize the generation of metabolic heat associated with the consumption and digestion of food. For example, the optimum temperature for pigs weighing more than 55 kg, housed on partial slats, and free from drafts and wetness, is 14°C (Zhang, 1994). Mount (1975) has suggested the following adjustments to the measured temperature to determine the effective ambient temperature: straw bedding, +4°C; concrete slats, -5°C; wet floors, -5°C to -10°C. In addition, air movement of 0.2, 0.5 and 1.5 m/sec reduces the effective ambient temperature by 4°C, 7°C and 10°C, respectively.

Recent research by Dr. Harold Gonyou compared 12 different feeders, including both single and multiple space across dry or wet/dry designs. He observed a range in feed intake of about 15% across all feeders; the simple choice of wet/dry feeders as opposed to dry feeders resulted in a 5% increase in feed intake. Floor space, or lack thereof, is known to impact on feed intake. The following equations were developed by Kornegay and Notter (1984) to relate floor space per pig to voluntary feed intake. S is floor space per pig m2.

- Grower (27 to 54 kg): ADF (kg/pig/day) = 1.542 + 0.856S - 0.494S².
- Finisher (44 to 92 kg): ADF (kg/pig/day) = 1.619 + 1.833S - 0.837S².

An imbalance in the diet will affect feed intake. For example, it is well understood that deficiencies of most amino acids will depress appetite, as will inadequate sodium or chloride. Excesses of some nutrients are known to be appetite suppressants as well. Clearly, a balanced diet is essential to maximizing voluntary feed intake. The form of the diet will also affect feed intake. For example, liquid feeding systems increase feed intake, in some cases by as much as 10 to 15%.

Feed Intake Checklist
A. Have you determined what your feed intake target is?
   ✓ How far below target are you?
   ✓ Where in the growout phase does the shortfall exist?

B. Do pigs have ready access to feed?
   ✓ Does the feed system ensure a continuous supply of feed to the feeder?
✓ Is there adequate feeder capacity in the pen given the number of pigs in the pen?
✓ Are the feeders properly placed within the room?
✓ Is the feeder designed properly, to ensure easy access to the feed by the pig?
✓ Is the feeder properly adjusted to ensure easy access to feed, while preventing excessive wastage?

C. Do the pigs have a continuous supply of fresh water?
✓ Is the flow rate adequate for nipple drinkers?
✓ Are dish drinkers clean and operative?
✓ Do the pigs have ready access to the drinkers?
✓ Are there sufficient drinkers in the pen?

D. Is the room environment conducive to maximizing feed intake?
✓ Is the room temperature too high, event in cool weather?
✓ In the summer, is everything possible being done to minimize the effects of excessive temperatures?
✓ Monitor interior temperature relative to outside. Is it within 2 to 3°C?

E. What is the health status of the herd? Is there reason to believe that transient or acute infection is reducing appetite?
✓ If yes, talk to your herd health veterinarian!

F. Do you suspect that diet composition (nutrients or ingredients) may be a problem?
✓ Review the composition of the diet and determine if any ingredients may be a cause for concern (Hint: Pigs are much less particular than we are. It is unlikely that ingredient per se is at fault.)
✓ Is it possible that the diet has become contaminated with mycotoxins or unpalatable weed seeds?
✓ Are there imbalances in nutrient content which might cause suppressed intake?
✓ Have you analyzed the diet to determine if errors in mixing or formulation are the cause of suppressed appetite?