

Diet Complexity for Show Pigs
by Dr. Kevin Burgoon
Nutritionist Show Chow & HONOR™ Showfeeds

Diet complexity is very important for newly weaned pigs. Whether the pigs are ultimately intended for show or market, getting off to a good start is vital to growth performance, and lean tissue content.

Diet complexity is defined by the amount of high quality lactose and animal protein sources that are incorporated into the feed for young pigs. Lactose is the primary energy source for nursing pigs. Sow's milk is not only high in protein and fat, but very high in the carbohydrate lactose. It is the principle sugar found in sow's milk. Young, nursing pigs are very efficient utilizing the nutrients that the sow produces.

As we wean pigs and transition them from a liquid to a solid diet, lactose plays an extremely important role. Most swine nutritionists refrain from using any appreciable amounts of soybean meal in pig pre-starter diets. Soybean meal contains two proteins that can cause an antigenic effect, activating the immune system. The antigenic response causes scours and poor growth performance. The young pig's digestive tract is suited for liquid diets high in lactose immediately following weaning. As the digestive tract matures it can process higher amounts of soybean meal and corn in the pig's diet. This is why Show Chow and HONOR recommend a phase feeding approach to newly weaned pigs, starting with the very complex HONOR First Wean One, and then transitioning to feeds containing less complexity and higher amounts of soybean meal.

We recommend starting with First Wean One. HONOR First Wean One contains about 1800 lbs./ton of complex ingredients, making it one of the most complex and palatable pig starters on the market today. This feed contains spray dried whey, spray dried porcine plasma, spray dried skim milk, spray dried eggs, spray dried red blood cells, select fishmeal, spray dried coconut oil, and among other high quality ingredients. HONOR First Wean One contains a very small amount of soybean meal included only to help mature the pig's digestive tract and transition to a less complex feed. HONOR First Wean One also contains no corn, using ground oat groats as the grain source. This feed also includes organic acids to acidify the diet making nutrients more digestible to the pig. Yucca-schidigera extract is also included to improve growth performance and air quality.

As the pig grows and the digestive tract matures, we can feed greater amounts of soybean meal and corn, resulting in the need for less expensive diets. HONOR Showpig Starter 15CX or Show Chow First Step are second phase pig starters intended to feed to pigs weighing at least 15 lbs. in bodyweight. These feeds contain a bit more soybean meal than First Wean One, while also containing spray dried whey, spray dried eggs, and select fishmeal. HONOR Showpig Starter and Show Chow First Step also contain the organic acids, yucca schidigera extract, and crystalline amino acids much like HONOR First Wean One. These feeds are very complex as compared to a simple corn soybean meal diet, but less complex than HONOR First Wean One. Again, the philosophy is to mature the pig's gut as quickly as possible to accommodate simpler, less expensive diets.

HONOR Showpig Prep CTC/DEN is intended for pigs weighing between 30 and 80 lbs. that are headed for a pig sale, or to be sold off the farm as showpigs. This feed is not as complex as HONOR First Wean One, or HONOR Showpig Starter 15CX, however it does contain very high quality animal proteins to produce an effect on skin and haircoat. This feed also maximizes muscle, while not creating the extreme look. Simply, this feed unlocks the pig's genetic potential to express muscle synthesis and definition. Show Chow First Step is also an excellent choice for preparing young pigs for sale as it delivers nutrition similar to Showpig Prep.

We have 5 other HONOR Showpig feeds and 4 Show Chow feeds that contain various amounts of complex ingredients. Table 1 shows some of these ingredients and the relative complexity of HONOR™ Showpig Feeds. Table 2 indicates the relative complexity of Show Chow feeds.

HONOR FEED	RELATIVE COMPLEXITY						
	SD Plasma	SD Whey	SD Skim Milk	Select Fishmeal	SD Eggs	SD Red B. Cells	Oat Groats
First Wean One	XXXX	XXXX X	XXXX	XXXX X	XXXX	X	XXXX
Showpig Starter 15CX		XXXX		XXXX X	XXXX		
Showpig Prep			XXXX	XX	XX	XXX	
Showpig Grower				XX	XX	XX	
Showpig Finisher w/Pay				XX	XX	XX	
Showpig Finisher				XX	XX	X	
Powerfill	XX	XXX	XXXX	XXXX	XXX	X	XX

SHOW CHOW FEED	RELATIVE COMPLEXITY						
	SD Plasma	SD Whey	SD Skim Milk	Select Fishmeal 1	SD Eggs	SD Red B. Cells	Oat Groats
First Step		XXXX		XXXX X	XXXX		
Foundation				XX	XX	XX	
Final Push w/Paylean				XX	XX	XX	
Pig Basis 18.5				XX	XX	XX	

Table 1. Diet complexity is also important in heavier pigs being grown for exhibition. The inclusion of animal protein products contribute greatly to skin and hair condition. In addition, these complex animal proteins offer excellent sources of very digestible amino acids. This is important when formulating a feed using the Ideal Protein concept. Simply, the Ideal Protein formulation technique uses apparent ileal or true ileal digestibility coefficients to set a minimum for lysine. Then minimums for all other essential amino acids expressed as a percentage of lysine are set as nutrient minimums for a given feed. These minimums expressed as a percent of lysine, may change due to the size of the pig being fed.

Research indicates that as the pig grows and becomes heavier, the nutrient minimums (expressed as a percent of lysine) for total sulfur amino acids, tryptophan, and threonine increase because they become a larger part of the maintenance requirement. So, in turn the Ideal Protein ratio, or amount of essential amino acids on a digestible basis, changes as the pig grows. Showpig feeds that have similar essential amino acid ratios; Showpig Grower L200, Showpig Finisher T100 w/Paylean, Showpig Finisher T100, Foundation, Final Push, and Pig Basis 18.5. All of these feeds can be fed to the same weight range in growing pigs, so they contain similar amino acid ratios. HONOR Showpig 16 and HONOR Powerfill™ have differing amino acid ratios for heavier, larger showpigs to maximize their genetic potential, and First Wean One, Showpig Starter, Showpig Prep and Show Chow First Step have ideal protein ratios for young pigs.

In summary, diet complexity serves not only to provide extremely valuable nutrition, but also to transition the young newly weaned pig to less expensive simple diets. Diet complexity also provides valuable nutrients for growing showpigs that add luster to skin and hair, and promote muscle synthesis. Lastly, very high quality animal proteins provide diet complexity and the

essential amino acids to properly formulate showpig diets according to the Ideal Protein concept.