PIG NUTRITION

Feeding growers: protein, energy and lysine in practice

How to tell whether a grower pig diet is short on energy or lysine, and what to change first. Practical guidance for pig farmers and feed mixers.

By FeedSport Nutrition Team · Published 6 October 2026 · Updated 28 October 2026 · 3 min read

KEY POINTS

- Grower pigs (about 25–60 kg) build lean tissue fast, so lysine supply drives growth.
- A lysine shortfall shows as slower growth, poorer feed conversion and fatter pigs.
- An energy shortfall shows as pigs eating more but still growing slowly and looking lean.
- Fix the limiting nutrient first, then balance the other amino acids to lysine.

The grower phase, roughly 25 to 60 kg live weight, is when pigs lay down lean meat fastest. It is also where a poorly balanced diet costs the most, because feed intake is rising quickly and every tonne of feed counts.

Energy: the fuel for growth

Energy sets the pace. Pigs partly eat to meet their energy needs, so a low-energy diet makes them eat more, up to the limit of their gut capacity. In hot weather, or with bulky high-fibre diets, they hit that limit sooner and growth slows.

Cereal grains provide most of the energy in a grower diet. Sorghum is a good energy grain for pigs. On our specification it supplies about 3,358 kcal ME per kg as fed. Fibrous ingredients such as wheat bran and sunflower meal dilute energy and should be kept low in grower diets.

Lysine: the nutrient that limits lean growth

Protein is made of amino acids, and pigs need them in roughly fixed proportions. Lysine is almost always the first one to run short in cereal and soybean meal diets, so lysine supply effectively sets the ceiling on lean growth.

Formulate on **standardised ileal digestible (SID) lysine**, not total lysine or crude protein. SID values account for how much of each ingredient's lysine the pig actually absorbs.

Once lysine is right, balance the other essential amino acids as a ratio to it. This is the "ideal protein" approach. Approximate ratios commonly used for growers are:

Amino acid	Ratio to SID lysine
Methionine + cysteine	about 58–60%
Threonine	about 63–65%
Tryptophan	about 18–20%
Valine	about 65–70%

Crude protein: a result, not a target

Crude protein is still worth checking, but it is better treated as a result of meeting the amino acid targets. Adding crystalline L-lysine HCl, and where needed methionine, lets you meet amino acid targets with less soybean meal. That usually lowers cost and reduces the nitrogen pigs excrete.

Do not push crude protein too low with synthetic amino acids alone. Once threonine, tryptophan or valine become limiting, growth drops even if lysine looks fine.

Reading the pigs: what a shortfall looks like

What you see	Likely cause	First thing to check
Slow growth, poor feed conversion, pigs carry more fat	Lysine or amino acid shortfall	SID lysine and the energy-to-lysine ratio
Pigs eat a lot but stay lean and grow slowly	Energy shortfall or very fibrous diet	Energy density and fibre level
Uneven growth within a pen	Feeder space, water, mixing or health	Feeder access, water flow, mix uniformity
Sudden drop in intake	Heat, water problems, feed spoilage	Water supply, feed freshness, temperature

Feed is not the only possible cause. Disease, water supply, stocking density and genetics all affect growth. Rule them out before reformulating.

The energy-to-lysine ratio

Energy and lysine work together. If you raise energy without raising lysine, pigs eat slightly less feed and may end up short of lysine per day. If you raise lysine without enough energy, the extra amino acids are burned for energy instead of building lean meat. Keep the ratio of SID lysine to energy consistent with your reference tables when you change either one.

Practical steps

1. Get current specifications for your grain and protein meal.
2. Check the diet's SID lysine and energy against targets for the pigs' weight range.
3. If lysine is short, add soybean meal or a small amount of L-lysine HCl, then check threonine and methionine.
4. If energy is short, reduce fibrous ingredients or increase the grain share.
5. Recheck the full diet in the formulation tool before mixing.

For a full walk-through of building a diet, see how to formulate pig feed. To see what a better grower feed conversion is worth across a batch, try the pig farming profit calculator.

Need a diet checked? Send your ingredients and targets to the FeedSport nutrition team on WhatsApp +263 77 468 4534 or sales@feedsport.co.zw.

Figures in this guide are typical values and general ranges. Confirm targets for your animals, genetics and ingredients, and check batch specifications before formulating.