HAMLET PROTEIN®
a nuscience brand

Optimize performance with HP 270; *clean soy protein with the best return on investment*



To ensure good health and performance, piglet diets need to be formulated with highly digestible protein sources. This can be a costly challenge. The use of HP 270 provides the perfect balance between a highly digestible protein source which is low in anti-nutritional factors and an affordable price.

When used in nursery diets HP 270 improves:

- average daily gain
- body weight
- feed conversion rate
- return on investment



The protein source of choice for pigs is generally considered to be soybean meal (SBM) as soy protein is rich in the limiting amino acids lysine, threonine, and tryptophan in contrast to for instance cereal grains. Amino acids from soybean meal are well digested by pigs and more readily available than from other protein sources. Furthermore, does soybean meal contribute to the energy requirements of pigs just as much as corn does.

However, SBM contains anti-nutritional factors (ANF's) such as trypsin inhibitors, the oligosaccharides stachyose and raffinose and the antigen β-conglycinin, which reduce piglet performance. ANF's can be partly reduced by processing of soybean meal through heat treatment or fermentation, but the most effective way to eliminate antinutritional factors is through enzymatic treatment of soybean meal. Enzymatic treatment reduces the concentrations of oligosaccharides and allergenic proteins to create a product that can even be used in weaned pigs (Table 1).

Table 1 Comparison of content of antinutritional factors between SBM and HP 270 .

Antinutritional factor	SBM	HP 270
Trypsin inhibitor activity (mg/g)	3.22	2.0
Soybean oligosaccharides (%)	12.4	4.0
Betaconlglycinin (ppm)	54,097	10

Since Hamlet Protein started to reduce the ANF content of SBM using its patented enzyme activated technology, the process has been optimized and further developed resulting the current offering of HP 270 with an outstanding track record on pig growth performance.

The use of HP 270 results in uniform piglet growth and improved weight gain which gives producers around the world a strong return on their investment.

HP 270 results in heavier piglets and the best FCR at d47 post-weaning

Table 1 Piglet performance summarized from weaning (d0) to day 47 post-weaning when replacing part of soybean meal in nursery diets with further processed soy proteins.

	SBM	HP 270	SPC	SPC1	ExS	FSBM	ExS1
BW d0 p.w., lb	14.5	13.9	14.8	14.4	14.1	14.1	14.6
BW d47 p.w., lb	48.1	48.7	47.0	48.1	47.6	47.4	45.9
ADG d0-47, lb/d	0.705	0.728	0.683	0.705	0.705	0.661	0.661
FCR d0-47, lb/lb	1.69^{xy}	1.55^{x}	1.72^{xy}	1.62^{xy}	1.68^{xy}	1.83^{y}	1.68^{xy}

SBM=Soybean meal; SPC=Soy protein concentrate; ExS=Extruded soy; FSBM=Fermented soybean meal; p.w.=post-weaning; ADG=average daily gain; FCR=feed conversion rate.
Different superscript letters (x,y) indicate a near-significant trend towards difference between treatments ($0.05<p<0.10$).

Piglets gain more weight at better FCR with **HP 270** *compared to other soy-based proteins*

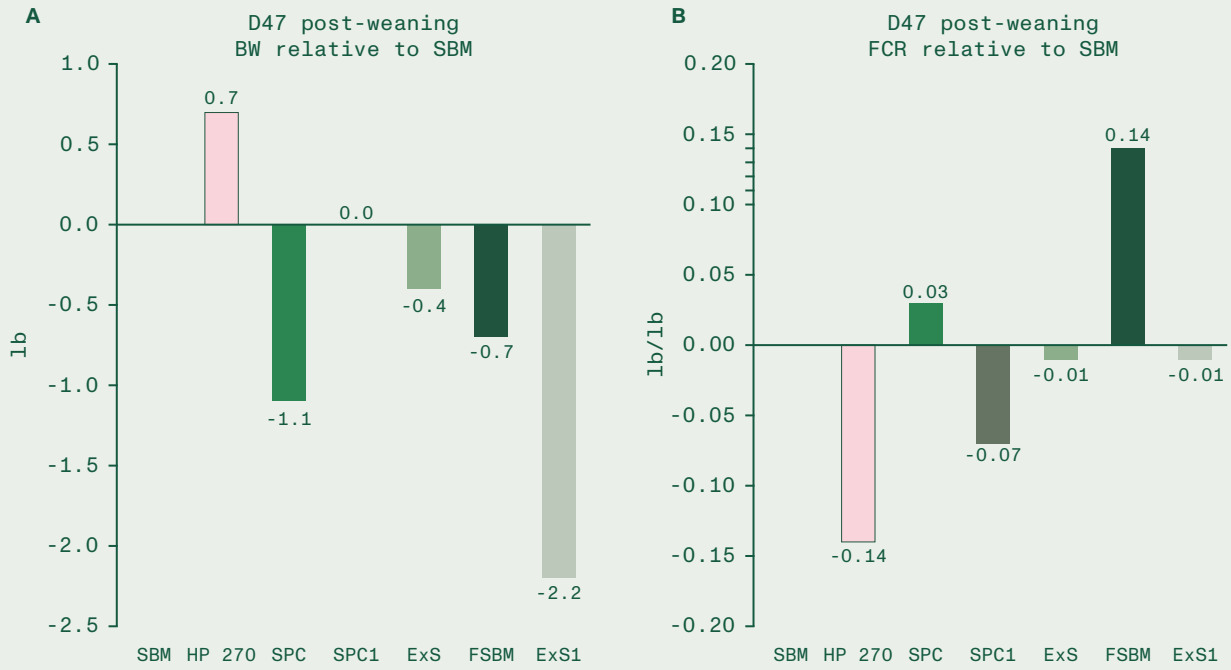

Figure 1 A) Body weight (BW) increment (kg) and B) points improvement in mortality adjusted feed conversion ratio (FCR, g/g) of piglets fed alternative soy-based proteins relative to piglets fed soybean meal in the nursery diet. SBM=soybean meal, SPC=soy protein concentrate, ExS=extruded soy, FSBM=fermented soybean meal.

Why choose HP 270 ?

The effect of the inclusion of HP 270 in pig diets has been investigated in feeding trials around the globe. The results clearly show that the inclusion of HP 270:

Significantly improves feed intake, weight gain and feed conversion ratio of nursery pigs and delivers the most favorable return om investment. The performance-improving effect of HP 270 makes it a cost-efficient alternative to SBM and other soy-based proteins.

Product characteristics and inclusion

HP 270 is a specialty soy protein for nursery pigs. Recommended inclusion levels for nursery diets of piglets are 5-15%.

Product features

- Very low in ANF's
- Highly palatable
- Good protein solubility
- Superior water holding capacity

Benefits

- Stimulates feed intake and growth
- Improves FCR
- Safeguards gut health

How do I choose *a fast protein source* for diet formulations?

Protein kinetics can be simulated *in vitro*. Research has revealed that Hamlet Protein products have the fastest kinetics among all tested soy-based protein sources (see figure 2).

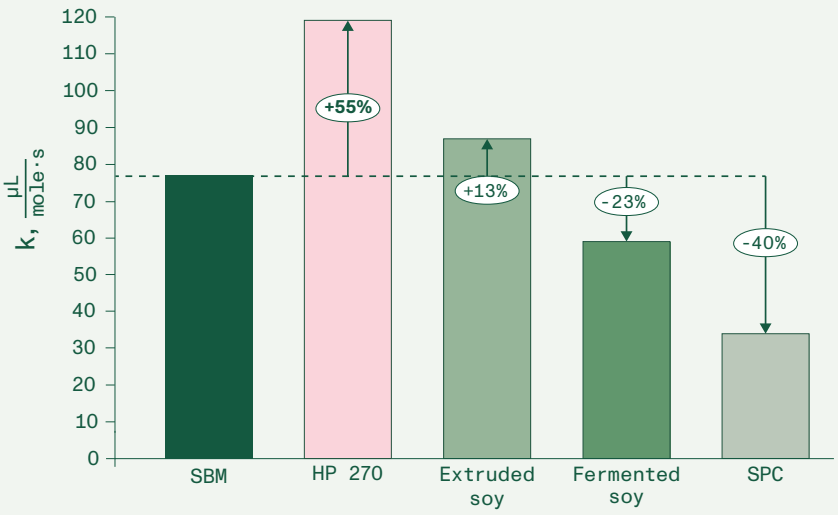

Figure 2 Speed of protein degradation for various soy proteins

Speed of protein degradation for various soy proteins as measured by the hydrolysis constant k[µL/(mole*s); µL=microliter NaOH needed to keep pH at 8 during hydrolysis (acid is released) and s=seconds]. 5 different soy-based protein ingredients were incubated with proteolytic enzymes for 120 minutes (SBM=soybean meal; SPC=soy protein concentrate). Values in bubbles indicate the percentage difference to SBM. The higher the k-value, the faster the hydrolysis and thus absorption.

Hamlet protein offers the fastest vegetable protein

The unique production process of Hamlet Protein using enzymatic treatment does not only effectively reduce the content of anti-nutritional factors but also may modify the protein in such a way that it becomes easier accessible for proteolytic enzymes, resulting in a very fast protein source. Protein from Hamlet Protein hydrolyzes faster than SBM and a lot faster than protein from SPC's.[1]

References

1) Bible et al., 2023; Toghyani et al., 2020; Zhang et al., 2022

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Healthy Animals - Healthy Business
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