

Unique feeding concept for piglets

By ir. Lars Gorisse, technical manager, Joosten Products, Weert, The Netherlands.

Recently Joosten Products introduced a new, unique feeding concept for piglets up to 25kg – Three Become One.

This feeding programme can be easily used with local ingredients and focuses on health, consistent quality and a complete balanced piglet feed.

All these features make the concept unique. The company recently carried out a piglet trial in Spain with 1,000 piglets and a comparison trial in Holland. Both trials showed excellent results in growth and animal health and, therefore, tremendous economic benefit for the users.

The concept

Three Become One contains three different products, Delac 3BI, Superpig 3BI and Skimpro 3BI. All these products are developed and produced by Joosten Products.

These three products have different nutrients which are essential for young piglets. Delac 3BI provides highly digestible protein and lactose.

Superpig 3BI is the energy provider of the piglet feed and contains, amongst others, short chain fatty acids and omega 3 fatty acids.

Skimpro 3BI contains all the essential vitamins and minerals which a piglet needs for health and optimal growth.

These three products are the basis of a high quality, balanced piglet feed and can be combined with local ingredients. All three products have

different inclusion rates and can be varied according to the raw materials which are available.

The recommended inclusion rates are;

- 1** Delac 3BI >7.5-12.5%.
- 1** Superpig 3BI >5.0-7.5%.
- 1** Skimpro 3BI >5.0%.

The Three Become One piglet concept consists of two piglet feeds; weaner feed and starter feed.

The weaner feed can be given approximately 10 days before weaning until 10 days after weaning. The starter feed can be given 10 days after weaning up to 25kg.

This concept ensures that the piglet gets all the nutrients it needs for an optimal price during this difficult period of its life.

Three Become One not only focuses on piglet health and growth, but also has benefits for the user.

1 Able to make a balanced weaner and starter feed with local ingredients irrespective of which ingredients are available at a certain time.

1 The concept is flexible, one can adapt the inclusion levels depending on your own ingredients or animal demands.

1 All three products have a constant quality and are easy to use and convenient.

1 The concept contains a lot of health features. You do not have to buy all these features separately, which means less raw materials need to be stored.

Health features

Besides being able to produce a balanced feed, Three Become One also

	Control feed	3BI Concept	Difference
Days 0-14			
No. piglets	143	143	
Initial weight (kg)	6.27	6.27	
Final weight (kg)	9.68	9.79	+ 0.11
DLWG* (g)	243.44	251.06	+7.62
DFI* (g)	285.18	293.21	+8.03
Days 14-26			
No. piglets	141	142	
Initial weight (kg)	9.68	9.79	
Final weight (kg)	14.54	14.70	+0.16
DLWG (g)	404.80	409.25	+4.45
DFI (g)	513.72	540.04	+26.32
Days 26-38			
No. piglets	139	142	
Initial weight (kg)	14.54	14.70	
Final weight (kg)	20.59	21.13	+0.54
DLWG (g)	504.39	536.28	+31.89
DFI (g)	845.47	803.15	-42.32
Overall 0-38			
No. piglets	143	143	
Initial weight (kg)	6.27	6.27	
Final weight (kg)	20.59	21.13	+0.54
DLWG (g)	376.80	391.09	+14.29
DFI (g)	528.85	530.42	+1.57
FCR	1.40	1.36	-0.04
Margin over feed* (€)	1.31	1.66	

DLWG = Daily weight gain DFI = Daily feed intake

FCR = Feed conversion ratio (DFI/DLWG)

Margin over feed = (weight gain x average sell price per kg) / (cost of 1kg feed x feed intake)

Table 2. Results.

contains many health features which are necessary for today's piglet feed.

1 Immunoglobulins (used by the immune system to identify and neutralise bacteria and viruses).

1 All necessary amino acids (building blocks for young animals).

1 Glutamines (improves gut health).

1 Carbohydrates. Lactose acts as an energy provider and can be seen as a prebiotic.

1 Short and medium chain fatty acids (highly digestible fat source for young animals).

1 All necessary vitamins and minerals.

1 Phytase (improves phosphorus level in the feed).

1 Omega 3 fatty acids (optimise

inflammation which means better recovery and immunity).

Nutritional elements

The key issue of the concept is balance. Balance means that the level of energy of the piglet feed is in relation to the digestible amino acids of the feed.

Table 1 shows an example of a perfectly balanced piglet feed. Besides energy and amino acids there are also demands for lactose (minimal demand for example 3.5%), protein (not too high in order to prevent diarrhoea; for example

Continued on page 25

Table 1. Example of starter feed conform 3BI concept.

Ingredient	Value	Cum.	Percent
Maize	400.00	400.00	40.00
Casava	125.00	525.00	12.50
Delac 3BI	92.52	617.52	9.25
Soya bean meal	88.03	705.55	8.80
Soyabeans	75.45	781.01	7.54
Superpig 3BI	74.61	855.62	7.46
Palm seed	50.00	905.62	5.00
Skimpro 3BI	50.00	955.62	5.00
Broken rice	44.38	1,000.00	4.44

Continued from page 23
18%), crude fat, crude fibre and digestible phosphorus.

The trials

To know if the Three Become One concept actually works in practice, Joosten Products conducted several trials. In February 2008 the company did a field trial with 330 piglets on three commercial Dutch farms.

One treatment was the Three Become One concept and the other treatment was a high quality piglet feed from a leading Dutch feed mill.

There is no statistical data from this trial (it was really a field trial) but according to the general data of the farm and the opinion of the farmers plus employees there were no differences between the two treatments.

At the beginning of 2008 Joosten Products did a trial with 1,000 piglets on a trial farm in Spain.

In total there were six treatment groups. One of the treatment groups was the Three Become One concept.

This was compared with the control treatment, which was a standard, common piglet feed.

The other four treatments were used by Joosten Products to test several raw materials and new ideas/concepts.

All feeds were calculated to have the same level of nutrients. The weaner feed was given for 14 days and the starter feed was given from day 14 until day 38 (approximately 22kg). At day zero, 14, 26 and 38 feed intake was measured and piglets were weighed.

Results

The overall results show almost the same feed intake (528.85g/day vs 530.42g/day) between the control group and the Three Become One feed. However a statistical difference ($F<0.001$) in daily weight gain was found between the two treatments, respectively 376.8g/day for the control feed and 391.1g/day for the Three Become One feed.

This results in a better feed conversion ratio and a better margin over feed for the Three Become One concept in comparison with the control feed.

In addition to feed intake and

Example calculation:

4% less mortality, per sow 2.2 cycles and 10 piglets per litter

1 Per year: + 0.88 more weaning piglets.

1 Per year: + 0.88 slaughter pig/sow/year.

1 Farm with 500 sows: + 440 piglets/year!

1 Price per piglet in the Netherlands (25kg) €32.

1 Savings with 4% less mortality -> $440 \times 32 = €14,080$ per year!

Table 4. A feeding programme that focuses on health can save money.

growth the health status of the different treatments were recorded during the trial. Table 3 shows an overview of the results.

The Three Become One treatment has 4% less fall out in comparison with the control group.

The example calculation in Table 4 shows that a feeding programme focusing on health can save a lot of money.

The Three Become One concept has proven to have more growth with similar feed intake for piglets to day 38. This results in a better feed

conversion rate and an economic benefit. Three Become One concept shows less fall out (4%) resulting in tremendous economic savings.

Conclusions

Last year several nutritional calculations were made concerning the Three Become One concept for customers all over the world.

Joosten Products has formulated piglet feed with the Three Become One concept with ingredients from all over the world, including Asia, Russia, South America and Europe.

Every time it has been proven that the concept is able to formulate a completely balanced piglet feed with all available local raw materials.

The piglet trials have shown that the Three Become One concept shows better growth and health, resulting in an economic benefit. ■

Table 3. Health status.

	Control feed	3BI Concept	Difference
Mortality	5	2	3
Morbility	3	1	2
Total No.	8	3	5
Fall out (%)	6	2	4