# NUTRITIONAL NEEDS AND GROWING ABILITY OF YOUNG PIGLETS

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Without human interference, a young piglet becomes nutritionally independent from its mother and weans in the natural way at the age of 70 days having a usual liveweight of 15 to 20 kg.

The digestive ability of the young piglet towards a nutritional scheme without milk starts developing between the ages of 14 and 28 days. This digestive ability is supported by the early exposure of the young piglet to feed.

Another factor is the gradual transition from liquid to solid feed, together with the fact that the growing procedure is fully performed without milk from the age of the 52$^{nd}$ day and so on.

In the 60s, the usual practice in Europe was to wean the piglets on the 56$^{th}$ day of age.

Today, the constant improvement in the nutritional field, the deeper understanding of the physio-pathology of the young piglet and the development of new methods and technology to control the climatic conditions inside the farm, made possible to perform the piglet weaning on the 21$^{st}$ day of the animal's age as a routine procedure.

In order to meet the growing needs of the piglet after its weaning it is necessary to have a complete knowledge of the needs of the animal's body developing together with the changes that take place in the body's chemical structure concerning the protein deposit and the fatty tissue.

The relation between the protein- fat deposit and the age of the piglet is shown at the table below.

***Relation between liveweight, body protein and fat tissue in young piglets ( Dividich – Seve ).***

| *Age (days)* | *Liveweight Kg* | *Body protein Kg* | *Fat Tissue Kg* | *Protein / Fat Relation* |
|---|---|---|---|---|
| Birth | 1,23 | 0,130 | 0,020 | 6,5 |
| 1 | 1,45 | 0,175 | 0,030 | 5,8 |
| 7 | 2,8 | 0,410 | 0,190 | 2,2 |
| 14 | 4,5 | 0,650 | 0,510 | 1,3 |
| 21 (weaning age) | 6,3 | 0,830 | 0,640 | 1,3 |
| 28 | 7,0 | 0,890 | 0,540 | 1,6 |
| 35 | 8,8 | 1,130 | 0,730 | 1,5 |

This dramatic differentiation in the protein / fat relation depicts the necessity of a quality provision of protein and fat to meet the piglet's needs. This necessity is also dictated from the need to arrange the percentage of different aminoacids in order to balance the aminoacid relation itself as well as the relation between aminoacids and energy.

Consequently, the nutritional needs of the young piglet have to be faced with a nutritional scheme of *optimum* quality in terms of raw materials, in one hand, and correct preparation, in the other, in order to avoid disorders of the digestive system,

which is extremely sensitive, which nutritional scheme is also required to face the increased growing needs of the animal at that important age.

It is common knowledge, nowadays, the fact that when a piglet eats more and earlier at this particular age, this procedure is accelerated and widened during the pre-fattening and fattening period.

Another important factor is that the sow's milk is not at all sufficient.

According to data from a last research ( Harell at all), milk production is not enough to face the animal's needs from the $7^{th}$ – $10^{th}$ day of birth and then. This situation is getting even worse during the suckling period and the piglet's growth procedure is severely disturbed if it does not get supplementary feed.

At the age of 2 days, the young piglet is able to consume up to 460 g milk per kg bodyweight ( Dividich et all ), a quantity which is 30-40% more than what was stated by other researches.

Nowadays, a sow with a high genetic value can produce 12 kg milk per day, whereas 20 – 30 years ago the milk production could only reach the 7 kg per day.

Despite the improvement in the genetic field and the development of the know-how in terms of sow-nutrition, it is a fact that today, a sow with a 10 - piglets litter has to produce 18 kg of milk per day from the $21^{st}$ day of birth in order to face the amount of energy required from the 10 member litter.

Fat is the basic source of energy for the suckling piglet but has also another important role. The fat deposition, which is subcutaneous, acts not only as an energy supply available to the metabolism procedure from the weaning age but basically as a body heat – insulating agent during the suckling stage.

The modern data in the animal nutrition field between the ages of $7^{th}$ to $10^{th}$ days are required to face and balance the animal's needs at its most important growing phase offering diets able to respond not only to the animal's energy needs but to the protein needs of the growing procedure, as well. This will have as a result the revelation of the animal's maximum genetic ability during the fattening stage.

Based on the notions mentioned earlier in this article, we have created a new nutritional program for young piglets.