

# MANAGEMENT & FEEDING

guidelines for Iberduroc progeny



The king of  
**marbling**

Target Group  
Nutritionists and Farm managers

Global version | Updated: 21-05-2021  
© Copyright Topigs Norsvin

## INTRODUCTION

The aim of this manual is to provide guidelines based on the nutritional management requirements of the Iberduroc genotype to achieve premium eating quality pork with Intramuscular fat levels >4% and color scores >3 with tastings generating good scores for succulence, tenderness and flavour. The recommendations are designed to enable producers to achieve the genetic potential for Meat Eating Quality from Iberduroc progeny and not designed to minimize cost of production.

Due to the higher levels of IMF it is vital that the saturation level of fats meets the needs of the packer. Topigs Norsvin recommends reviewing fat sources in the pig diets to ensure the resultant meat is suitable for the targeted pork products being produced.

As with all pork products best practice regarding feed withdrawal, animal handling, transport, lairage, movement to stun, stunning and chilling of carcasses should be followed to optimise meat and carcass quality.

**Ask your local Topigs Norsvin representative for the relevant Global Meat Group factsheet if you require more information on these recommendations.**

### Key Areas For Iberduroc Pork

The factors to unlock the genetic potential of Iberduroc pork

- Do not use entire boars or immunocastrates in the pork production of the Iberduroc progeny
  - Always feed the Iberduroc *ad libitum*
  - Do not use ractopamine
1. Slaughter animals at the correct stage of development
  2. Feed a multi-phase diet & implement split-sex feeding
  3. Analysis of liquid feeding is required
  4. Ensure ambient climate & environment
  5. Ensure adequate levels of vitamin E in the ration

#### **Note:**

**The following points need to be taken under consideration for SPF animals:**

- SPF animals grow faster, therefore have the capacity to reach higher protein deposition rates.
- The higher feed intake capacity in SPF animals does not reflect in an increased protein deposition level, if the protein:energy ratio's in the diet is limited.



# 1. Slaughter animals at the correct stage of development

Not all parts of the pig grow at the same rate. Figure 1 shows over time how the rate of growth of components of the pigs varies with maximum bone development occurring before muscle which in turn occurs before fat. Note that subcutaneous fat is deposited before marbling (IMF) fat. These depositions are further spread when the animal is on a lower plane of nutrition (part b of figure 1), such as in a pig with suppressed feed intake. For this reason it is important that diets are **not deficient in energy**.

## Advice

Target Slaughter weight at a point towards the peak of curve 3 to achieve higher IMF levels and not around the peak of curve 2 which would be more typical of conventional pork production with lower levels of IMF. To achieve the desired levels of meat quality do not include animals under 120kg (liveweight) in the supply chain.

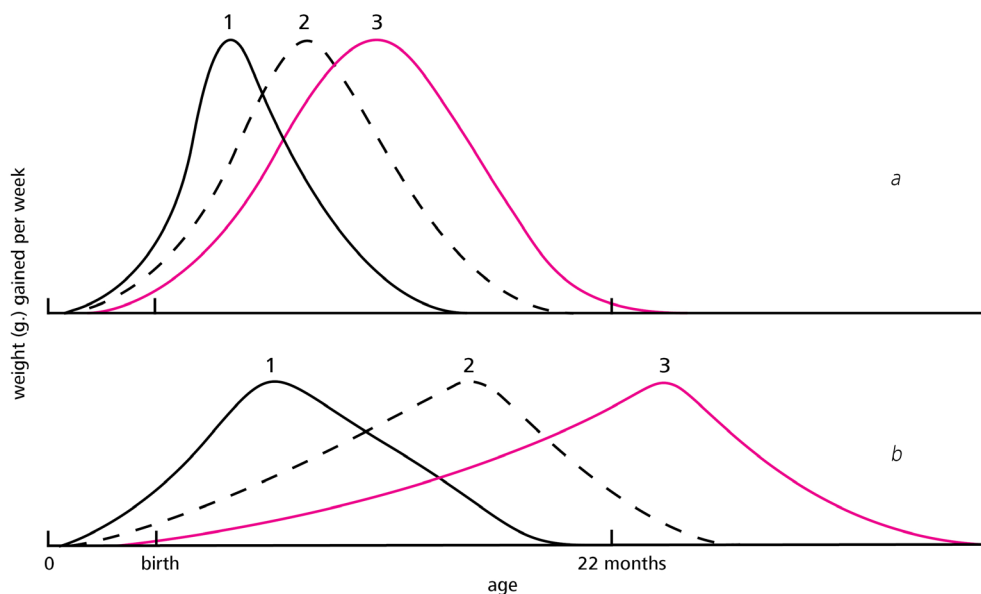


Figure 1. The rate of increase in weight, showing the way in which the changes in shape and proportions of the body are affected by the level of nutrition. *a*, on high plane of nutrition; *b*, on low plane of nutrition.

curves 1: cranium and shanks  
bone  
caul and gut fat

curves 2: neck  
muscle  
subcutaneous fat

curves 3: loin  
fat  
marbling fat

## 2. Multi-phase feeding

Nutrient tables for castrates and gilts are given. The Nutrient tables provide the producer and/or feed company with the dietary recommendations for each sex. Diets for the Iberduroc offspring need to be developed within the minimum and maximum nutrient recommendations. The maximum nutrient levels are advised to reach optimal technical performance. Independent of the raw material type, the SID Lysine : NE ratio should be different between minimum and maximum to support the different targets between those 2 categories.

In general, gilts will consume 7 to 8% less feed and have a higher protein deposition and therefore a better FCR during the finishing period than castrates. The differences in feed intake, together with the differences in performance and carcass parameters, provide the basis for split-sex feeding.

### **Note:**

**The following points need to be taken under consideration for SPF animals:**

- Implement split-sex feeding.
- Use the diet specifications in table 1 for castrates and table 2 for gilts.

**Table 1.** Nutrient boxes for Iberduroc offspring:

**Castrates**

Weight Range	Nutrients	Unit	Meat Quality <sup>1</sup>
25 – 45 kg	Ave Daily Feed Intake	Kg/day	1.65
	Net Energy	MJ/kg	10.1
	Metabolizable Energy	MJ/kg	13.6
	Metabolizable Energy	Mcal/kg	3.24
	Lysine SID	g/kg	11.0
	SID Lys/NE	g/MJ	1.09
	Calcium	g/kg	7.3
	Digestible Phosphorus	g/kg	2.7
46 – 75 kg	Ave Daily Feed Intake	Kg/day	2.25
	Net Energy	MJ/kg	10.0
	Metabolizable Energy	MJ/kg	13.5
	Metabolizable Energy	Mcal/kg	3.21
	Lysine SID	g/kg	9.3
	SID Lys/NE	g/MJ	0.93
	Calcium	g/kg	6.3
	Digestible Phosphorus	g/kg	2.5
76 - End	Ave Daily Feed Intake	Kg/day	2.60
	Net Energy	MJ/kg	10.0
	Metabolizable Energy	MJ/kg	13.5
	Metabolizable Energy	Mcal/kg	3.21
	Lysine SID	g/kg	6.9
	SID Lys/NE	g/MJ	0.69
	Calcium	g/kg	6.1
	Digestible Phosphorus	g/kg	2.4

<sup>1</sup> to use the maximum meat quality potential of the Iberduroc.

**Note:**

- Advised phosphorus levels are based on diets formulated without the use of Phytase. The use of phytase will mean phosphorus levels will need to be adjusted accordingly.
- $NE = ME \times 0.74$  (The conversion factor could be different for each country).

**Table 2.** Nutrient boxes for Iberduroc offspring:

**Gilts**

Weight Range	Nutrients	Unit	Meat Quality <sup>1</sup>
25 – 45 kg	Ave Daily Feed Intake	Kg/day	1.42
	Net Energy	MJ/kg	10.2
	Metabolizable Energy	MJ/kg	13.8
	Metabolizable Energy	Mcal/kg	3.28
	Lysine SID	g/kg	11.5
	SID Lys/NE	g/MJ	1.13
	Calcium	g/kg	8.3
	Digestible Phosphorus	g/kg	3.1
46 – 75 kg	Ave Daily Feed Intake	Kg/day	2.03
	Net Energy	MJ/kg	10.0
	Metabolizable Energy	MJ/kg	13.5
	Metabolizable Energy	Mcal/kg	3.21
	Lysine SID	g/kg	9.7
	SID Lys/NE	g/MJ	0.97
	Calcium	g/kg	7.0
	Digestible Phosphorus	g/kg	2.8
76 - End	Ave Daily Feed Intake	Kg/day	2.49
	Net Energy	MJ/kg	10.0
	Metabolizable Energy	MJ/kg	13.2
	Metabolizable Energy	Mcal/kg	3.14
	Lysine SID	g/kg	6.7
	SID Lys/NE	g/MJ	0.67
	Calcium	g/kg	6.8
	Digestible Phosphorus	g/kg	2.7

<sup>1</sup> to use the maximum meat quality potential of the Iberduroc.

**Note:**

- Advised phosphorus levels are based on diets formulated without the use of Phytase. The use of phytase will mean phosphorus levels will need to be adjusted accordingly.
- NE = ME X 0.74 (The conversion factor could be different for each country).



### 3. Liquid feeding

Working with liquid feeding systems requires good control of diet composition and hygiene. For each type of diet there is an ideal dilution, which depends on the ingredients used and their inclusion. We advise regular laboratory analyses of the feed to guarantee that the pigs are not fed diets that can limit their performance and/ or negatively affect the carcass quality.

### 4. Climate and environment

Pigs have a thermoneutral zone between 17-19°C for animals between 30-60kg and 15-17°C for animals 60-120kg. When the temperature is higher than these ranges, pigs metabolically adapt to the conditions. Feed metabolism generates heat, so pigs in hot environments will decrease feed intake. The reduced feed intake results in slower growth and lower fat deposition. Intramuscular fat (IMF) content is up to 32.5% lower and cooking loss up to 9.1% higher in pigs from hot versus cold environments. Shear force, a measure of meat tenderness, is up to 6.4% higher in hot environment animals.

### 5. Vitamins and minerals

Producers should use standard recommendations for vitamins and minerals for Iberduroc progeny. Particular emphasis should be focused on minimum vitamin E levels in finisher pigs due to its antioxidant properties and beneficial impact on fat stability and product shelf life.

## Advice

- **Place environmental control systems**

The environment can serve as a significant factor affecting both the voluntary feed intake level and the overall nutrient requirements of pigs. Given the fact that animals tend to eat less when temperature rises, feed intake capacity can be a limiting factor for optimal performance. Swine diet formulations should be adjusted to account for the variations in feed intake associated with temperature changes.

- **Low crude protein diets**

Practically, crude protein is partially replaced by starch and/or fat and industrial amino acids in order to meet the protein requirement for optimal performance.

- **Offer the feed during cooler phases of the day/night**

- **Feed more times per day**

Feed will be less per meal and have a lower influence on the energy needed to digest/ internal heat etc.

- **Ensure the availability of fresh clean water**

Water should be available ad libitum. Ensure a minimum flow rate of 1.5 litres per minute.





