

Iberian pig production: genetic background, finishing systems, carcass traits and product quality

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The traditional Iberian pig production system is based mainly on the use of natural resources as feed sources in a slow growth, long life cycle to produce high-quality meat. In relation to reproductive aspects, the usual farrowing facilities can be divided into two different types; one is based on individual huts (camping type) placed outdoors and the other on conventional farrowing cages within a maternity building facility. In both systems, the numbers of piglets born (8.97), born alive (7.08) and weaned (5.8) are less than in the conventional breeds. Increasing the number of weaned piglets is one of the objectives of the Iberian pig genetic improvement program.

Regarding feeding management, the Iberian breed can be considered as an obese breed due to its leptin resistance, which is based on specific mutations of the leptin gene. In relation to this, pigs are fed-restricted from 40 to 100 kg to avoid an early excessive fattening, and then, during the finishing period (from 10-12 to 12-15 months of age), pigs are fed ad libitum, taking advantage of compensatory growth, resulting in a great increase in fat deposition. Fattening can be done in an extensive, free-range system based on acorn feeding (*montanera*) or in a semi-extensive system based on concentrate feeding. The *montanera* period goes from November to March, when the acorn is ripe and available. In relation to this, Official Quality regulations divide Iberian pig products into four categories: labeled with different color depending on genotype and finishing system, “black label” is for products of pure Iberian pigs fed in the *montanera* system; “red label” is for products of crossbred Duroc x Iberian pigs fed in the *montanera* system as well; “green label” is for products of pure Iberian or crossbred Duroc x Iberian pigs fed in extensive system with concentrates; and “black label” is for products of crossbred Duroc x Iberian pigs fed in intensive system with concentrates as conventional intensive production; Pure Iberian pigs are slaughtered with an average weight of 160 kg.

There are important differences between the *montanera* system (black label) and the extensive fattening system (green label) in relation to the quality of carcass, meat and meat products. For example, pigs finished in a *montanera* system have thicker subcutaneous fat depots, smaller prime cut yields and similar intramuscular fat content than concentrate-finished pigs. In relation to lipid metabolism, free-ranging *montanera* pigs have healthier fats, with higher percentages of MUFAs and PUFAs and better, atherogenic and thrombogenic index, and therefore more healthy meat than those finished on concentrate. Hams from *montanera* pigs are cured around 1100 days lose less weight (2.7 kg.) than those finished on concentrate during 900 days (3.0 kg.). Finally, in relation to the sensorial evaluation, hams from pigs fed in *montanera* have better scores in terms of marbling, flavor and juiciness than those finished on concentrate.

Therefore, it can be concluded that the Iberian pigs finished in a *montanera* system have fresh meat and cured products of great organoleptic quality and with healthier fats than those fed concentrates.

Key words: Extensive production, acorns, carcass traits, cured meat products, Iberico