



Considerations on ethics and animal welfare in extensive pig production: Breeding and fattening Iberian pigs[☆]

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Abstract

The extensive pig production in Spain is traditionally characterised by: the use of the Iberian pig, an autochthonous breed perfectly integrated into the environment in which they have developed; a long duration of the productive cycle for about 23–24 months; a high level of animal welfare level, specially in the fattening process with freedom of movement and feeding base on natural sources: acorns and grass, and an equilibrated “dehesa” agro-forestry system where this activity has been developed. Nowadays, the introduction of more intensified methods due to the increasing demand led to important changes, such as: the shortening of the productive cycle (10–12 months); freeing from the territorial base; changes during the fattening period, fattening with mixed feed and less animal freedom. All these facts may implicate a loss of the animal welfare condition. These circumstances lead us to question it from an ethical point of view.

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1. Introduction

The great diversity of edaphic, climatic, orographical, and other determinants present in the Iberian Peninsula have for millennia had a decisive influence on the differentiation of a series of breeds of stockbreeding species, perfectly adapted to the habitat in which they have evolved. The anthropic action exercised both on

the surrounding environment and on these breeds, by means of selection and improvement depending on their main productive orientation, has been determinant in their definitive shaping. In the south-west of Spain an exceptional representative exists, namely the Iberian pig. Since its origins, this breed has been fed on the natural resources of wooded pastureland, thus producing derivatives of the highest quality.

The production systems of the Iberian pig have been developed over centuries, with new technology being incorporated to the cultural wealth of the pigmen, who included them as appropriate in the production cycle. In the mid-twentieth century a series of socio-economic and pathological factors came

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together, such as the appearance of African Swine Fever in 1960, which almost wiped out the breed and the exploitation system (Vargas Giraldo and Aparicio Tovar, 2000). By the end of the century, however, the production of the Iberian pig had made a spectacular comeback, which was mainly due to the scientific demonstration of its products and the increase in demand. This had a favourable effect on the associated meat industry and led to great expansion in the sector.

Although the stockbreeding of the Iberian pig sector is very dynamic, and incorporates the latest advances in installations, buildings, reproduction, feeding, etc., the preoccupation with animal welfare still only exists from a production perspective.

2. Origin of the Iberian pig

A number of authors agree that the current pig species originates from the primitive wild boar (genus *Sus*). Although different opinions exist as to the division into subgenera and species of the former (Aparicio Sánchez, 1960; Roldán Reina, 1983; Concellón Martínez, 1986; Aparicio Macarro, 1988), it is generally accepted that it originated some 12,000 years ago between the former Yugoslavia and the Far East. This is because the number of chromosomes of the wild boars in this area, thirty-eight, coincides with that of current pigs (Davis, 1989).

The differentiation and continental expansion of this new species took place over centuries; it reached the Iberian Peninsula during the sixth millennium B.C. (Berrocal Rangel et al., 1995). Its exploitation and consumption evolved more slowly than those of other domesticated species, which was due both to competition with man for feeding because of its omnivorous nature and to exclusive meat exploitation. However, its production gradually increased, perhaps due to the abundant oak tree cover of most of the Peninsula, particularly the south-west area, and it overtook the wild boar in about the fifth millennium B.C. (Rubio de Miguel, 1988). On the contrary, in other regions of the world in which the species was present in numbers it declined owing to the increase in crops and the reduction of wooded areas (Harris, 1990).

3. The evolution of exploitation systems

The first references found to the exploitation of pigs on wooded pastureland date from the times of the

Roman Hispania. Those of Columela, in which pig rearing is treated as a complete activity and from an economic perspective, are particularly noteworthy. In his work *Of country tasks* (Columela, 1988 edition), he mentions numerous trees and shrubs that produce fruits that can be eaten by pigs, and also indicates the importance of feeding in times of scarcity, recommends installations (individual pigsties for giving birth), and recommends productivity control for each sow, as well as the follow-up of the piglets (marking them in the same way as their mothers) and the selection of breeding animals.

It is clear that in those times animal welfare was not taken into account, and that any improvements in this respect were merely designed to raise the animal production. The moral concept of beings having feelings was very different from what it is today; indeed, it seems that animals in general and pigs in particular were considered to have no feelings. However, some authors such as Plutarco (1968 edition) questioned whether man had the right to subject domestic animals to a series of privations in order to obtain food from them.

The exploitation of pigs in Spain doubtless decreased after the invasions of Northern peoples and the subsequent Arabic occupation. During the Reconquest (between the 8th and 15th centuries), large areas of evergreen oaks were felled, although decrees were also issued to protect them, such as those of the Municipal Charters of Montánchez and Cáceres in the 13th century, which favoured the persistence of extensive pig production systems (MAPA, 1984).

Work of Agriculture by Gabriel Alonso De Herrera (1981) was originally published in the early 16th century. At this early date it already outlined the pig exploitation systems that were maintained in Spain until the early 20th century. These feature the handling of types of animal by lots, the concentration of delivery pens, the use of straw for the sleeping quarters, and the importance of correct feeding for breeding animals. At this time the official position of the Church regarding animals was based on the doctrine of Saint Thomas Aquinas, who considered them merely as something useful to man (De Lora, 2003). It is therefore to be supposed that nobody was morally concerned about the welfare of pigs.

At the beginning of the 20th century, the extensive pig farming systems in Spain had hardly changed from

those described by Herrera, although the influences of a current of “modernity” imported from other countries of intensive pig production were beginning to be appreciated. For many authors such as Aran (1925), old was a synonym for backward; he thus undervalued the relationship between the animals and their medium and its importance for the conservation of the environment.

In the mid-twentieth century *The Iberian pig in the province of Badajoz* (De Juana Sardón, 1954) was published, in which the considerable evolution of those years is observed. This work describes in detail the general production systems of extensive pig farms of the time, which were maintained almost until the end of the century.

The separation of animals into lots implies in itself a clear distinction between the various phases of the productive cycle: rearing, growing pigs, and fattening (essentially extensive). Breeding errors were partly corrected by reducing the number of sows per boar and by organising breeding sows into lots, and supplementary feeding etc. was introduced. Although the complete cycle was very long, it was not unduly expensive, owing to the adaptation of the animals to the surrounding resources, to eating cereals and pulses from the farm itself, and to the possibility of starting fattening using grass and acorns (wooded pastureland) so as to achieve high weights.

This long duration of the productive cycles, both in reproduction (the elimination of older animals sometimes when over seven years old, late weaning at over 50 days) and in fattening (fattened animals are over 24 months old and sometimes over 36) is now considered an indication of welfare (Broom, 1991). If to this is added the possibility of developing, to a large extent, their behavioural needs (Gonyou, 1994), and that most of their food requirements are met by the grazing of different resources, it could be considered that this farming conditions are a fair approximation to an ideal welfare situation. However, low productivity deriving from inadequate food and installations, together with deficient sanitation, meant that the “productive liberties” (Webster, 1993), which should be part of the “Five New Freedoms” (FAWC, 1993), were not complied with. Indeed, the appearance and propagation of African Swine Fever was one of the factors that most contributed towards the crisis affecting the Iberian pig, which almost disappeared

as a breed in the sixties and seventies (Vargas Giraldo and Aparicio Tovar, 2001). The second half of the twentieth century was thus the time of big changes in Spanish pig production, which underwent a genuine industrialisation to which the Iberian pig could not adapt and therefore declined markedly.

It was precisely at that moment when the United Kingdom began to consider large-scale exploitation by means of the “Outdoor pig production” system. While the rest of the world reflected on the suitability of intensive production systems with works such as those of Harrison (1964), or subsequently, Singer (1975), Spain encouraged the development of integration systems that dispensed with the land factor and used fast-growth lean meat breeds.

As for the Iberian pig, farming methods were diversified, partly due to the scarcity of specialised labour, with the development of new models characterised by the reduction of the duration of the cycle, the systematic use of compound fodder, and the almost generalised crossing with “early” breeds of pig, essentially Duroc–Jerseys (Prat Frígola, 1976).

4. Current farming systems

The word that best defines current farming systems for the Iberian pig is DIVERSITY, which refers both to the installations and to breeding animals, feeding, production cycles, types of fattening, etc.; however, there is also an important INTENSIFICATION component.

4.1. Breeding phase

Most small and medium-sized farms tend to use the outdoor production system for breeding due to the lower investment needed together with the lack of specialised labour. This system includes a diversity of typologies as to the number of huts per hectare, the hut type, the existence of individual parks, etc., which affects the handling system. On big farms, the installations used resemble those of intensive pig rearing (breeding pens and slats), and have the same objectives: a higher number of weaned piglets per litter and a lower unitary cost of labour.

In traditional pigsties and conventional outdoor installations, the sows stay together all the time; they only leave the rest of the group momentarily in order to

suckle at the beginning. However, in the breeding pens and in the individual outdoor installations, the sows who have just given birth are isolated from the rest of the group for at least 4 weeks, and are generally kept together after the piglets are weaned and after mating until the next pregnancy. This allows social interrelations although it may also cause a greater level of stress during the first subsequent days of isolation.

On all breeding farms, most of the food the breeding pigs need is provided in the form of concentrated fodder; access to grazing resources is limited, partly due to their seasonal distribution and partly to the decreasing space available. Moreover, sanitary regulations mean that a periodic serological check is compulsory; and this together with an intensification of reproduction (reduction of the time limit between pregnancies) leads to very stressful situations that contribute towards reducing useful life.

Some of these installations, as well as current handling, are incompatible with the welfare of animals kept under these conditions. Although many researchers have contributed towards the improvement in pigs' welfare in other countries by communicating their results to industrialists and stockbreeders, much knowledge still remains to be transferred (Grandin, 2003), especially in the Iberian pig sub-sector.

Most of this research has been carried out on "white" pigs and commercial hybrids, and if individual differences exist in the response to adaptation to the environment, is it not possible that racial differences also exist? The problem underlying the criticisms of intensive farms is that the animals have not had time to adapt to these new systems, which frequently leads to their suffering chronic stress which implies a drop in productivity and welfare (Swanson, 1995). Therefore, what state will a cooped-up Iberian pig be in, if it has been selected for over 2000 years for extensive production at minimum cost?

Different breeds of pig react differently to different accommodation systems (Pajor, 2003). On the other hand, different types of installation (Table 1) affect different welfare problems differently, due to which it is hard to generalise (Rushen and De Pasillé, 1992). It therefore seems necessary to carry out further research on the installations and handling systems most suitable for the Iberian pig, so as to adapt them to its behavioural needs and thus improve its welfare.

Table 1

Compared characteristics of different installation types in the breeding phase of Iberian pigs

	Pigsty	Outdoor	Intensive P.
Handling difficulties	XXX	XX	X
UTH/breeding sow	XXX	XX	X
Specialised labour	XXX	XX	X
Piglets/breeding sow	XX	XX	XXX
Adaptability of piglets	XXX	XXX	X
Zoosanitary expenses	X	XX	XXX
Animal welfare	XXX	XX	X
Conservation of the environment	XXX	X	X
Space/sow needs	XXX	XX	X
Short- and long-term investment/sow	XX	X	XXX
Long-term investment/sow	X	XXX	X
Cost of maintenance	X	XX	XXX

Source: Own material.

4.2. Fattening phase

Fattening systems depend not only on the availability of resources that can be grazed during the *montanera* (a period of autumn/winter lasting 2.5 to 3 months during which animals are fattened, essentially with acorns). There is certainly a considerable number of Iberian pigs which put on their last 50–60 kg (until they reach 150–160 kg) by grazing on pastures and eating acorns and other resources *in situ* (tubers, fungi, roots, etc.). These are *acorn pigs*, which enter the slaughterhouse at an age of over 16 months, and often at almost 20 months.

However, this type of animal represents a percentage that is getting lower and lower with regard to the total number of Iberian pigs slaughtered; their scarcity is reflected in the high prices they fetch. The preponderance of fattening with fodder, both intensive and extensive, and of "recebo",¹ from the imbalance consistent with the resources produced in the medium, are the consequence of the growth undergone by the transformation industry in recent years, which cannot only depend on the slaughters after the *montanera* period. This intensification of fattening involves a shortening of growing pigs and an ever greater dependence on zoo-sanitary products and concentrates, in which the incorporation of unsaturated fats can be considered normal.

¹ Mixed fattening on both fodder and acorns.

5. Final considerations

The previous pages have shown the modifications that have been introduced into the systems of breeding and handling of the Iberian pig in recent decades. These systems have shortened considerably the productive phases, from breeding to growing pigs and fattening. In recent decades the productive systems used in rearing this breed have greatly intensified, thus shortening the life of the animals, reducing the space available, and limiting the animals' natural behaviour. Rusticity, understood as adaptation to the medium, has been much appreciated but is of little interest from a productive viewpoint, except in those animals being extensively fattened. On the contrary, low prolificity as a form of ensuring the descendants of the litter is nowadays a negative factor, since feeding is not a limiting factor. In short, it can be said that there has been an objective decrease in animal welfare.

It is clear that the intensification of agriculture and stockbreeding is a fact both in developing and in developed countries, and has “been essential for centuries in order to satisfy the growing demand for food of an increasing world population” (the [FAO, 2003](#)). In developing countries agricultural intensification is a consequence of the need to increase food production.

In developed countries intensification is the consequence of the need to increase productivity so as to be able to face the situation created by increasing costs and the gradual decrease in the prices of agricultural products. In the case of the Iberian pig, between 1977 and 2000 the prices of the various production factors rose by between 22% and 120%, while the prices of fattened pigs have fallen by between 53% and 61%, depending on the type of animal ([Aparicio Tovar and Vargas Giraldo, 2002](#)).

At the same time as this intensification process in the rearing of Iberian pigs, new productive models began to appear in various European and American countries. These models tried to harmonise the exploitation of natural resources, the increase in animal welfare, and the improvement in production quality. In this way the models of “outdoor pig production” in England, “plein air” in France, “suini all'aperto” in Italy, and “a campo” in Argentina, Uruguay, or Venezuela, became examples of new

extensive pig production methods, a tendency which is the opposite of what is being applied in the Iberian pig sector, which seems to be swimming against the current in this respect.

The intensification in the Iberian pig sector has had its consequences in different fields, among them culture and ecology. In the field of culture, the loss of knowledge on the handling and care of the livestock that had been treasured and transmitted for generations is noteworthy. This being so, the number of expert pigmen, with a high degree of interrelation with the animals going beyond mere care, is very small. In former times these men knew their pigs perfectly, i.e. their character, their behaviour, their preferences, and their weaknesses, to such an extent that it was not a case of just “animals” but of individuals with their own personality to be attended in an equally differentiated manner, particularly at critical moments such as birth or adoption.

From an ecological point of view, intensification has meant a reduction of the exploitation of the natural resources of the spring pastures, once the *montanera* is over, of stubble fields in summer after the cereal harvest, and a greater dependence on resources that are foreign to the farm and are largely non-renewable. In this sense, “ecologically sustainable intensification would require an increase in production, but should not cause an increase in dependence regarding non-renewable resources.” ([FAO, 2002](#)).

The introduction of changes in the rearing of the Iberian pig raises doubts from an ethical viewpoint, insofar as the former involves a loss of animal welfare, even when a utilitarian stance allows us to understand that given the current economic structure this serves to ensure the continuation of the activity. Nevertheless, we recognise the advisability of carrying out further study on all factors affecting the changes indicated and on their assessment from integrating positions such as that indicated by [Fraser \(1999\)](#), given the special characteristics that have arisen in the current situation of the Iberian pig.

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