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The Iberian pig in the dehesa system of Extremadura (Spain): Imbalance between energy requirements and grazing resources

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SUMMARY - Iberian pig is, at the moment, the most important livestock subsector in Extremadura. In 1995, more than 130,000 Tm real live weight were produced, they were evaluated at more than 20,000 million pesetas, which meant more than 30% of the total final livestock production in Extremadura. The economic outcomes of the exploitation are up to now, in most cases, satisfactory, due to the good prices at the fatstock market. But the Iberian pig production may already have lost part of its extensive character. This work analyses monthly distribution of energy requirements, supplemented feed and potentially grazed resources in four Iberian pig herds during three years. We estimated that carrying capacity of the environment is overcome nowadays.

Key words: Iberian pig, energy requirements, grazing, feed.

RESUME - "Le porc ibérique dans les systèmes de dehesa d'Estrémadure (Espagne) : Déséquilibre entre les besoins en énergie et les ressources pâturables". Le porc ibérique est, actuellement, le sous-secteur du bétail le plus important en Estrémadure. En 1995, plus de 130 000 Tm de poids vif réel ont été produites, évaluées à plus de 20 milliards de pesetas, ce qui représente plus de 30% de la production totale de bétail de l'Estrémadure. Les résultats économiques de l'exploitation sont jusqu'à maintenant, dans la plupart des cas, satisfaisants, dû aux bons prix sur le marché du bétail gras. Mais la production de porc ibérique peut-être déjà perdu en partie son caractère extensif. Ce travail analyse la distribution mensuelle des besoins en énergie, l'alimentation supplémentaire et les ressources potentiellement pâturables pour quatre troupeaux de porc ibérique pendant trois années. On pense que la capacité de charge de l'environnement est dépassée aujourd'hui.

Mots-clés : Porc ibérique, besoins en énergie, pâturage, alimentation.

Introduction

The Iberian pig is the emblematic breed in the wooded dehesa, which occupies an area of 6 million hectares (Campos, 1993), located in the southwest of the Iberian Peninsula. The last official census (MAPA, 1996) shows an evident recovery of the strain, which includes more than 100,000 breeding sows nowadays. Its relationship with the dehesa in the past is evident: the decline of its exploitation system was one of the factors which firmly affected the crisis of the dehesa in the 60s. It is at the moment the most important livestock subsector in Extremadura. In 1995, more than 130,000 Tm real live weight were produced, they were evaluated at more than 20,000 million pesetas (Coletto *et al.*, 1996), which meant more than 30% of the total final livestock production in Extremadura.

The Iberian Pig is the unique autochthonous breed which is not subsidised for production. Nevertheless, the economic outcomes of the exploitation, though under the influence of the cyclic character of its market (Esparrago *et al.*, 1994), are up to now, in most cases, satisfactory. The price that fattened pigs in "montanera" reach in the market is the main reason for this fact. But this situation may be changing. Extensive production are characteristic for the demand of low external input of energy. However, when exploiting the Iberian pig, the phases of its productive cycle may already have lost its extensive character.

The aim of this work is to analyse the monthly supplement feed of several Iberian pig herds in order to quantify the resources grazed from the environment by the animals, regarding the estimated energy requirements for these animals.

Materials and methods

Four dehesas have been studied over a period of three years (SO, NA, AL and NO) under the project CAMAR CT 9028. There, the Iberian pig is exploited in a complete cycle (breeding, rebreeding and fattening in montanera), combined with other types of species (bovine in one case and ovine in the rest of the cases). Daily reports of the work force have been used which showed the supplied fodder for every type of animal, the changes in the census, etc. The information was completed with country reports compiled directly by the research team, these reports were never obtained over a period longer than a fortnight.

The methodology considered is the one edited by Martin *et al.* (1986). This methodology is applied under the "Dehesa Law" for the estimation of the set stocking, with some alterations we deemed necessary. These are:

(i) 20% of the needs is not taken into account for the estimation of the grazed resources, but rather the total amount (Vargas, 1994).

(ii) The Maintenance Ration of Porcine (MRP) is 5286 Kcal ME (Kilocalories of metabolizable energy) (Escribano, 1995).

(iii) The annual energy requirements have been transformed into monthly ones in order to correctly determine its relationship with resources potentially available in the environment.

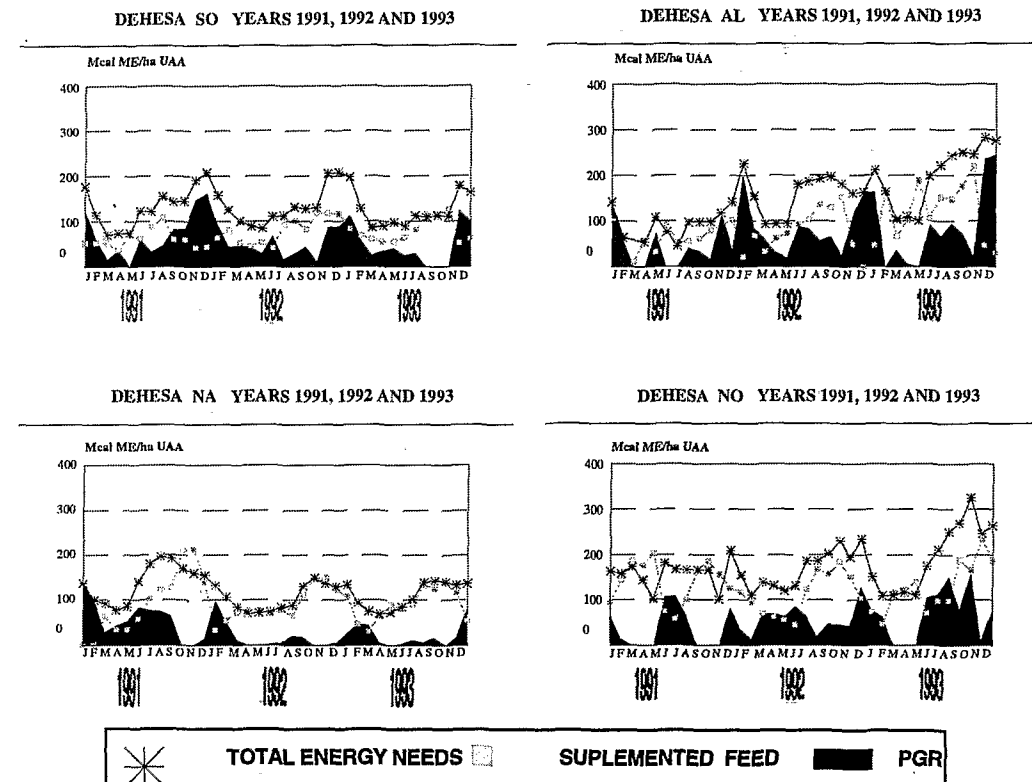
Results

Table 1. Indicators of the annual energy requirements of the Iberian pig herd (in Mcal ME and in MRP) with regard to Usable Agrarian Area (UAA) and the total energy requirements of the livestock in the exploitation

		SO	NA	AL	NO
Energy requirements of Iberian pig herd ha ⁻¹ of UAA (Mcal. of ME)	1991	1,594.15	1,680.47	1,044.36	1,896.48
	1992	1,584.27	1,252.50	1,920.63	2,019.73
	1993	1,476.80	1,318.15	2,403.13	2,356.99
	Average	1,551.74	1,417.04	1,789.37	2,091.07
Energy requirements of Iberian pig herd ha ⁻¹ of UAA (MRP)	1991	301.58	317.91	197.57	358.77
	1992	299.71	236.95	363.34	382.09
	1993	279.38	249.37	454.62	445.89
	Average	293.56	268.07	338.51	395.59
Energy requirements of Iberian pig with respect to total energy requirements of the livestock farming (%)	1991	58.92	38.36	40.91	32.85
	1992	57.77	28.82	48.54	34.31
	1993	56.63	33.87	52.38	38.86
	Average	57.77	33.68	47.28	35.34

The average annual energy requirements of porcine herds in the four dehesa oscillate between 1417 and 2091 Mcal of ME ha⁻¹ of UAA, which are 268 and 396 annual MRP ha⁻¹ of UAA. The requirements of the porcine with regard to the total number of animals in exploitation are between 34% and 58%.

These figures themselves already show a close up view of the extensive needs of the 4 porcine herds and, therefore, of all the animals in exploitation (demonstrating the former a higher percentage than the latter). However, graphics of monthly distribution of energy requirements and its relationships with the supplemented feed and with the resources potentially grazed from the environment by pigs exemplify the dynamics of the feeding in this kind of animals.



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