

THE PYRENEAN BREED: SOME PRODUCTIVE TRIALS AND THE INTEREST ON ITS CONSERVATION IN MOUNTAINS AREAS

LA RAZA PIRENAICA: ESTUDIO DE SUS CARACTERISTICAS PRODUCTIVAS EN CONDICIONES DE MONTAÑA

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Palabras clave adicionales

Additional Keywords

INTRODUCTION

The existence of cattle breeds with blond coats and light coloured mucous membranes on both sides of the Pyrenees has been evidenced by several authors who have presented different theories concerning to their origins, differences and interrelations, (Lafitte, 1927; Denis, 1983; Echeverría, 1975 and Bertocchio, 1988).

In the course of our century, many of these populations have undergone a series of fusion and selection processes that have ended up, on the French Pyrenees, with the Blonde d'Aquitaine breed (Bertocchio, 1988). During this period, the spanish breeds, grouped at the present under the name of *Raza Pirenaica* underwent many crossings with other breeds, being almost extinct; in 1974, there were only 1585 animals recorded in the Herd Book (Echeverría, 1975). The present census of the breed is 10000 animals (Rincón and Albarrán, 1990), out of which only 500 are farmed in the region of Aragón.

The aim of present study is to provide

with information about reproductive indexes of a, number limited, cattle breed which future is debated between a specialization as a beef breed (Rincón and Albarrán, 1990) or keeping it as a maternal breed specialized in production in mountain areas (Sierra, 1987).

MATERIAL AND METHODS

The data here presented have been obtained from two lots of heifers born in 1985 (20 animals) and 1986 (19 animals) respectively and from their progeny. All animals were born from breeders entered in the Herd-Book.

From their purchase at six month old, the animals were reared at *La Garcipollera* estate (Huesca, 42°N =°30' W; 945 msnm), property of the Agricultural Research Service of the Autonomic Government of Aragón, according to a management system

which is characteristic to the mountains areas, (Revilla, 1987): overwintering indoors from November to May; mountain grazing (1,200-2,000 m height) from June to October, and Autumn ranging in woody areas at medium height (1,300-900 m height) from the end of the mountain grazing to the beginning of the indoors period. During winter, the feeding levels offered to the animals were in no cases limiting to their productivity (Blasco, 1991).

Replacement heifers, from weaning (5-6 months old) to the first mating (25-27 months old) were fed according to their needs, (Albertí and Revilla, 1987 and Albertí *et al.*, 1991). Along this period, blood samples were taken every 10 days in order to determine onset of puberty (Olleta *et al.*, 1992).

During the years the herd was studied, the same reproductive management was followed, which consisted in the introduction of breeders in the herd (one bull per 15-20 cows) on the 15th May, being withdrawn on the 15th August. The cows that remained barren were culled from the experiment. The heifers were mated with bull semen proven for A.I. From 1990, the breeding bulls used for natural mating gave favourable results in the Performance Test carried out at the Selection and Reproduction Center (CENSYRA) of Zaragoza.

Weight was regularly controlled (every 15-30 days, according to the time of the year). Calves were weighed at birth and then weekly; while indoors, the milk intake was estimated by the methodology described by Le Neindre (1974). The animals were

weaned on the first days of September, except in 1989 when they were weaned at the beginning of August.

The anoestrus period was determined by measuring the plasma progesterone levels, taking three samples per week, from calving till the end of the mating period (Blasco and Revilla, 1992).

RESULTS AND DISCUSSION

The post-partum weight found (**table I**) show values within the ranges presented by Sierra (1987) for the breed (450-600 kg). It is worth mentioning the high percentage of animals with live weights over 600 kg after the third calving (5 years old). The average height in multiparous animals presented similar values to those described by Echeverría (1975) for the breed. According to these data, the breed could be classified among those of *average size*, Aparicio (1960). Birth weight of calves had statistically significances in relation to the calving number of the dam (**table II**), being the mean values lower than those of Brown Swiss managed under similar conditions, Blasco and Revilla (1991); Blasco (1991) and lower than the values given by Petit and Lienard (1988) for the Blond d'Aquitaine breed. In primiparous as well as in multiparous, calves had low (7.5%) relative size at birth ($RSB = \text{Calf weight} / \text{weight of the dam} \times 100$, Menissier *et al.*, 1974) which translated into low calving difficulties. Out of a total of 112 calvings recorded there were two cesarean sections

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Table I. *Post-partum weight and wither height of cows.* (Peso pos-parto y alzada a la cruz de las vacas).

	Calving order		Significación
	Primiparous	Multiparous	
Calving Weight (kg)	491,8	568,9	***
SE (n°)	6,19 (38)	9,69 (26)	
Minimum (kg)	419	495	
Maximum (kg)	560	669	
Wither Height (cm)	126,8	130,3	***
SE	0,50	0,47	
Minimum (cm)	122	126	
Maximum (cm)	135	138	

The 42,3% of the multiparous cows (3rd calving) weighted more than 600 kg.

(1.8%) and four parturitions that required assistance (3.6%).

The average daily gain from birth

to weaning in calves did not show differences as to the parturition number of the dam, being lower than that

Table II. *Productive parameters of calves.* (Parámetros productivos de los terneros).

	Calving order of the dam.				C.O.	Sex	SxO
	Primiparous		Multiparous				
	Males	Females	Males	Females			
Weight (kg) at							
- Birth	36,8±1,3(12)	37,2±0,8(23)	42,3±0,8(50)	39,1±0,8(39)	***		NS
- Weaning	207±9,5(9)	170±6,7(18)	194±4,6(39)	183±5,3(29)	NS		***
Age (d) at							
Weaning	187±8,5(9)	162±6,0(18)	175±4,0(39)	175±4,7(29)	NS	**	*
DG (kg/d)							
Birth-Weaning	0,908±0,04(9)	0,907±0,05(18)	0,865±0,02(29)	0,826±0,02(29)	NS		*
Milk							
Production (l)	6,81±0,18(39)	7,68±0,13(71)	***				

(n)= n°

C.O.= Calving Order; Sex= Calves' Sex; SxO= Interaction between Calving order and calves' sex.

Table III. *Effect of calving order on the length of the anoestrus post-partum.*
(Efecto del ordeño de parto sobre la duración del anoestro post-parto).

	Primiparous		Multiparous		Sig
	Mean	SE	Mean	SE	
Anoestrus post-partum lenght (d)	56,2	2,84	38,7	2,50	***
N°	39		71		

observed for Brown Swiss breed managed under similar conditions (Blasco, 1991) but is closer to that mentioned by Petit and Lienard (1988) for Blond d'Aquitaine breed calves (0.97 kg/day). For the conditions of our experiment, where calves do not receive supplementation but graze in mountain pastures, the weights at weaning may be considered as satisfactory although they are lower than those observed for similar breeds. The estimated milk production (6.8 l/day in primiparous and 7.7 l/day in multiparous) does not appear as a limiting factor in the breed for production of quality calves (high weight at weaning) as compared to other spanish beef breeds.

Heifers reached puberty at a mean age of 16 months, although all 100% of the animals were fully cycling only at 24 months, which could somewhat hamper the possibilities of early calvings at the feeding levels of our experiments (average daily gain

weaning-puberty, 548 g/day). The duration of the post-partum anoestrus (**table III**) has, on the contrary, been very short (56.2 ± 2.84 days in primiparous *vs* 38.7 ± 2.50 days in multiparous, $p < 0.001$), having been included in these means animals subject to different management conditions, (Blasco, 1991).

These preliminary results show the need to further the studies on the breed in order to gain information that permit to define the possibilities for production and to determine the optimal management conditions for the breed to express its productive potential.

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