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Cytogenetic study of the Spanish goat breed *Murciana–Granadina*

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INTRODUCTION

In order to provide a basis to know the level of chromosome aberrations in populations of the autochthonous Spanish goat breed *Murciana–Granadina*, we have, for the first time, cytogenetically analyzed these goats. The number of chromosomes and chromosomal abnormalities are recorded.

This goat breed is distributed especially in southeastern (Granada, Almería, Murcia and Alicante) Spain (Mason, 1981) and one of its main virtues is its dairy potential (Del Amo García, 1983) principally to produce cheese (Poto, 1990, personal communication).

MATERIALS AND METHODS

The cytogenetic analyses were made on 106 animals (24 females, 82 males) coming from 7 cattle associations located in Murcia. The females were taken at random and the males had been preselected for testing.

Peripheral blood was cultured for conventional studies as previously described (Burguete *et al*, 1987) with some modifications (RPMI-1640 medium, Flow Dutch modifications and fetal calf serum, Gibco myoclone plus).

RESULTS AND DISCUSSION

The normal karyotype of the goat has $2n = 60$ chromosomes, all acrocentric except the Y chromosome which is the smallest and the only metacentric one.

The incidence of chromosomal abnormalities and their distribution in the seven cattle associations are shown in table I. It is interesting to note that out of 106 animals examined, only 2 of them showed centric fusions, one female taken

Table I. Level of chromosomal abnormalities in *Murciana-Granadina* goats and their distribution in 7 cattle associations.

Cattle association	*No animals examined*		*Chromosomal abnormalities*			
			centric fusion		*other*	
	M	*F*	*no*	*%*	*no*	*%*
El Palmar	1	9	1(F)	11.1	–	–
EMEGA	33	14	1(M)	3.0	–	–
Calasparra	1	1	–	–	–	–
Bullas	18	–	–	–	1(M)	5.5
Yecla	13	–	–	–	–	–
Campos del Río	12	–	–	–	–	–
Sangonera	4	–	–	–	–	–
Total	82		1	1.2	1	1.2
		24	1	4.2		

M: male; F: female

at random (4.2%) and one male preselected for testing (1.2%) (figs 1 and 2) and one showed a break (1.2%). All carriers were phenotypically normal.

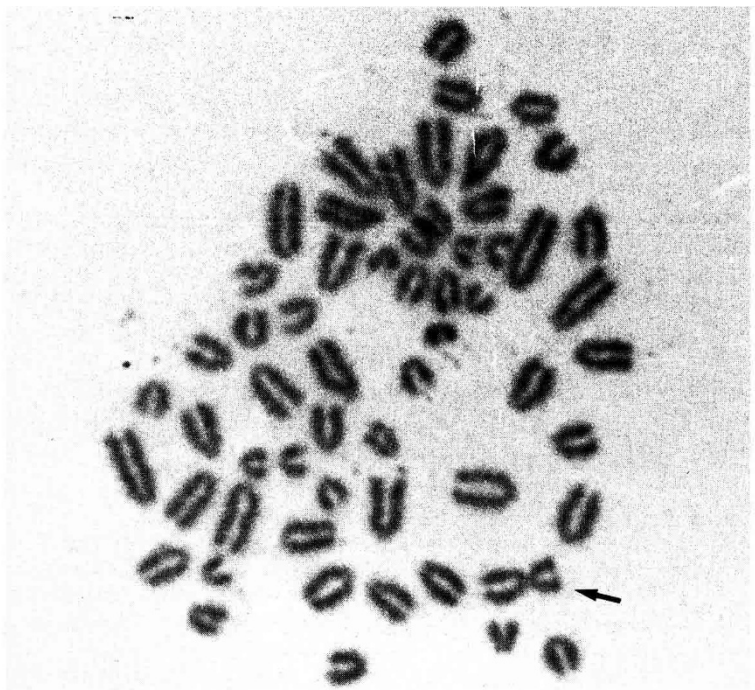

Fig 1. Metaphase plate of a female *Murciana-Granadina* goat carrying a centric fusion (arrow).

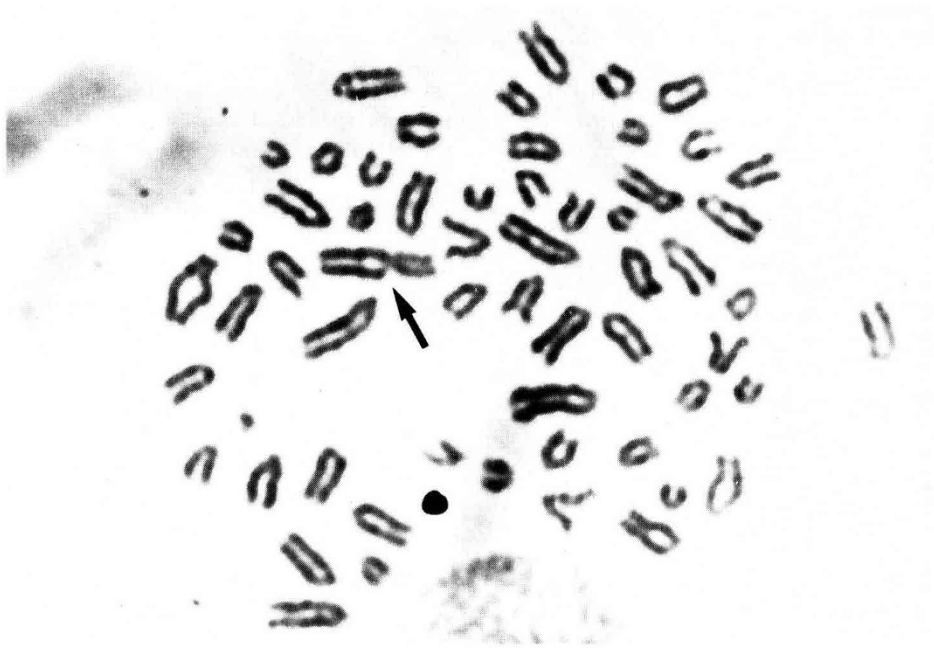

Fig 2. Metaphase plate of a male *Murciana–Granadina* goat carrying a centric fusion (arrow).

Caprine chromosomes have been studied using banding techniques such as the RBA technique (Di Berardino *et al*, 1987) for a definitive identification of the chromosomes involved.

It will be very interesting to further investigate these centric fusions in order to identify them and to see their possible effects on sperm production, prolificacy and other characters of interest.

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