

Use of veterinary antimicrobials for mastitis in small ruminants in Spain

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Introduction

The use of antimicrobial substances in small ruminants' milk can have serious effects on public health and dairy products quality. Selection of test to control antibiotic residues may be focused on the type of antibiotics used. The information about antibiotics usage in dairy small ruminants is scarce.

Objective

The aim of this study was to collect information on antibiotic usage for mastitis in dairy small ruminants in Spain.

Materials & methods

A survey (divided in six groups of questions) was conducted to the Spanish veterinarians in charge of the sanitary control of dairy ewes and goats.

Only data corresponding to the usage of antibiotics for mastitis at lactation stage and at drying off is included in this work.

- 6 GROUPS OF QUESTIONS
- Information regarding flock size and location
 - main pathologies that are treated with antibiotics
 - usage of antibiotics for mastitis therapy
 - antibiotic dry therapy
 - antibiotic active ingredients use
 - reference to the "extra-label" use of antibiotics






Dairy sheep

A total of 50 questionnaires were received corresponding to 35.1% of the dairy sheep Spanish census (n= 1,047,980).

Table 1. Distribution of the collected surveys

Region	Surveys	Census 2007	Sheep	%
CASTILLA & LEÓN	23	1,534,042	596,200	38.9
CASTILLA-LA MANCHA	11	802,294	226,000	28.5
EXTREMADURA	5	265,031	160,000	53.6
PAIS VASCO	2	152,078	18,000	11.8
NAVARRA	1	180,184	9,000	5.0
MADRID	1	55,030	47,000	85.4
ANDALUCIA	4	45,335	17,800	39.3
CANARIAS	-	18,054	0	0
ARAGON	-	15,195	0	0
C. VALENCIANA	1	10,293	10,000	97.2
CATALUÑA	-	5,421	0	0
LA RIOJA	-	3,812	0	0
BALEARES	-	1,964	0	0
P. OF ASTURIAS	-	1,650	0	0
R. OF MURCIA	-	578	0	0
CANTABRIA	-	54	0	0
GALICIA	2	0	380 ^a	0
SPAIN	50	3,067,624	1,047,986	35.1

^a In 2007 there is not dairy sheep's census in this region, but 2 with answered the survey



Dairy goats

A total of 52 questionnaires were received corresponding to 44.6% of the dairy goat Spanish census (n= 596,487).

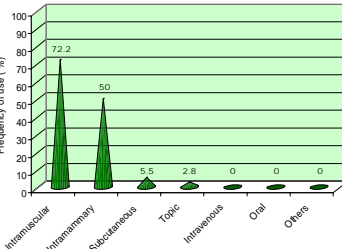
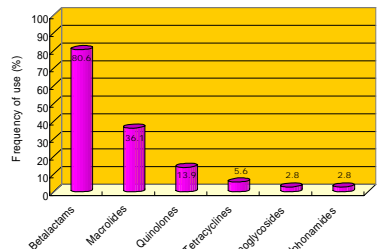
Table 2. Distribution of the collecting surveys

Region	Surveys	Census 2007	Goats	%
ANDALUCIA	14	637,481	406,100	63.7
CANARIAS	12	211,321	84,867	40.2
R. OF MURCIA	1	115,534	17,000	14.7
CASTILLA-LA MANCHA	10	113,562	17,700	15.6
EXTREMADURA	6	110,217	24,500	22.2
CASTILLA & LEÓN	4	78,634	18,000	22.9
C. VALENCIANA	2	31,195	12,500	40.1
CATALUÑA	1	14,375	15,000	104.3 ^a
MADRID	-	11,287	0	0
LA RIOJA	-	3,955	0	0
P. OF ASTURIAS	-	3,300	0	0
BALEARES	-	2,777	0	0
ARAGON	-	2,058	0	0
GALICIA	2	1,082	820	75.8
PAIS VASCO	-	1,047	0	0
NAVARRA	-	90	0	0
CANTABRIA	-	0	0	0
SPAIN	52	1,337,907	596,487	44.6

^a The veterinary declares in 2008 and the census corresponds to 2007

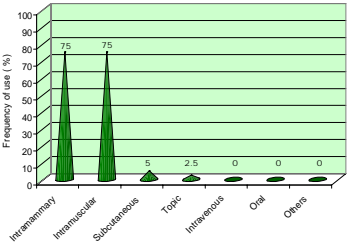
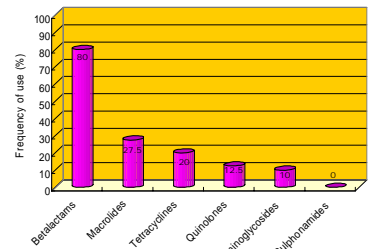
Antibiotics for mastitis therapy at lactation stage

72% of the surveyed vets treat mastitis during lactation, the rest prefer to slaughter infected animals



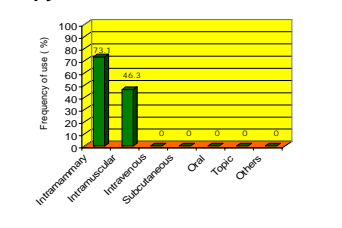
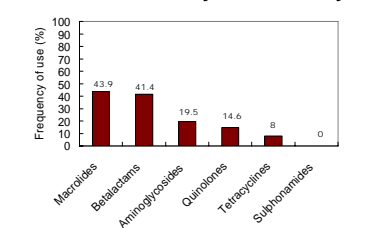
Antibiotics for mastitis therapy at lactation stage

76.9% of the surveyed vets treat mastitis during lactation, the rest prefer to slaughter infected animals



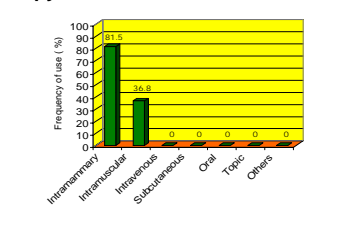
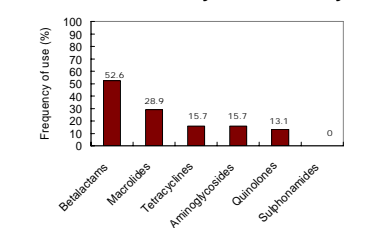
Antibiotics for dry off therapy

82% of the surveyed vets do dry off therapy



Antibiotics for dry off therapy

73% of the surveyed vets do dry off therapy



Abstract

The use of antimicrobial substances in small ruminants' milk can have serious effects on public health and dairy products quality; antibiotic residues in milk may cause antibiotic resistances, allergies in consumers or even defects in several fermented products. Knowledge of antibiotics usage in dairy small ruminants could avoid milk safety problems. A study was developed (March to November 2008) for collecting information on antibiotic usage in small dairy ruminants in Spain. A survey was conducted in different Spanish regions, with the participation of the veterinarians in charge of the sanitary control of dairy ewes and goats. A total of 102 questionnaires were received, corresponding to a 35.1% and 44.6% of the dairy sheep and goat Spanish census, respectively. The data were divided into six groups of questions, a general one with information regarding flock size and location, a second corresponding to the mean pathologies that are treated with antibiotics, concerning to the usage of antibiotics for mastitis therapy, related to antibiotic dry therapy, about antibiotic active ingredients, and the last one with reference to the "extra-label" use of antibiotics. The results presented in this work only correspond to the usage of antibiotics for therapy of intramammary infections at lactation stage and at drying off. The survey revealed that almost the 75% of vets applied an antibiotic for mastitis during lactation. Data revealed that for this pathology the 80.3% of the veterinarians used betalactams and the 31.6% use macrolides, follow by quinolones. Antibiotic dry therapy was more frequently used in sheep (82%) than goats (73%). Antibiotics elected for dry therapy were betalactams (46.8%) and macrolides (36.7%), follow by aminoglycosides (17.7%) and quinolones (13.9%).

Conclusions

- There is a clear tendency to treat mastitis during lactation, being the most widely antibiotics used betalactams and macrolides in both species.
- The principal administration route is the intramuscular for sheep and the intramammary for goats.
- Dry-off therapy was slightly superior for sheep's than for goats.
- Macrolides and betalactams are the main antibiotics used in dry-off: vets use mainly macrolides in sheep and betalactams in goats.
- The intramammary is the principal administration route in both species.