

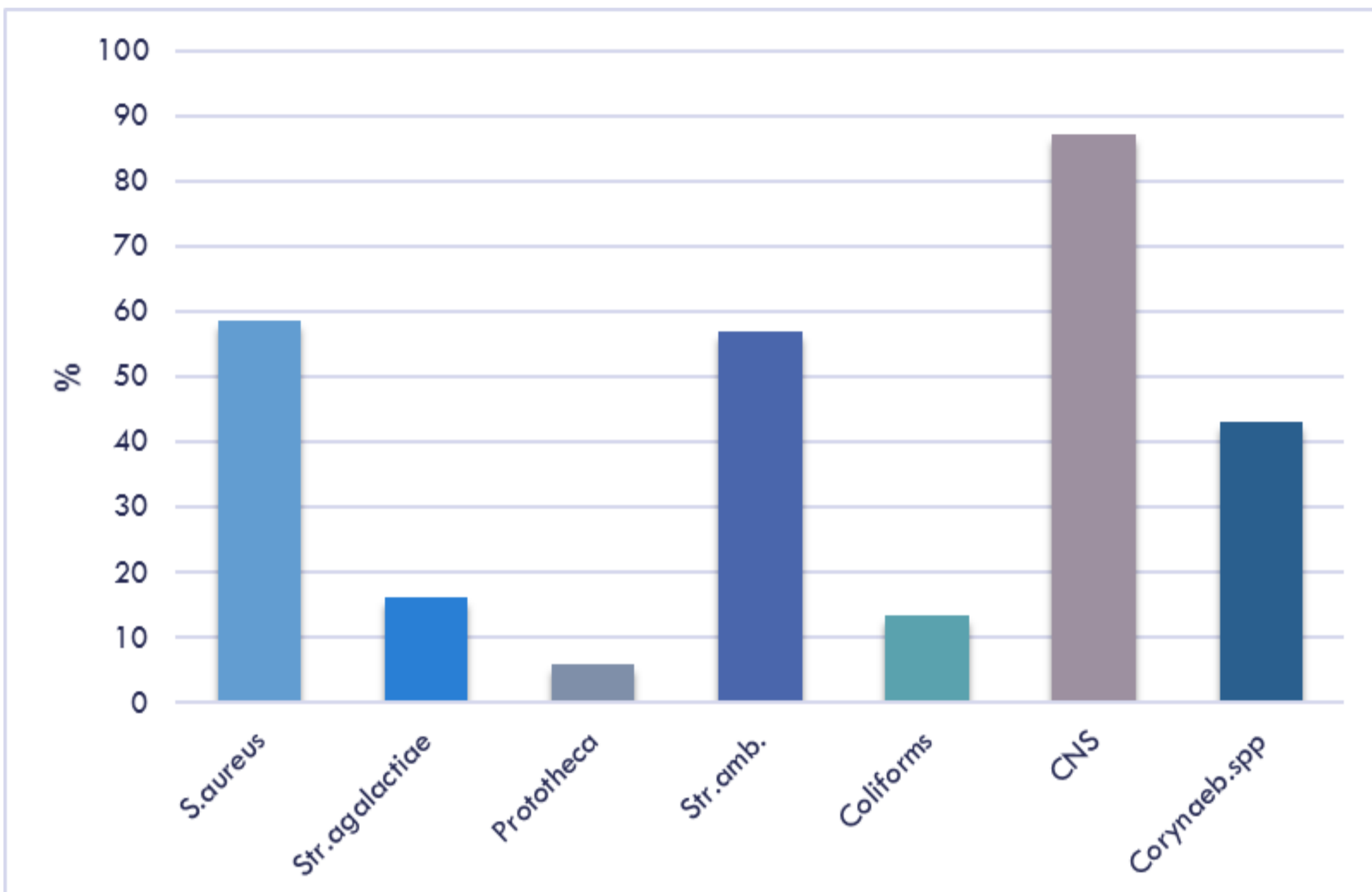


Mastitis epidemiology and costs in 125 Italian dairy herds

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INTRODUCTION

In this paper we report data on mastitis epidemiology and costs collected in a field study involving 125 Italian dairy herds. Herds were enrolled on voluntary bases in nine Italian regions (Calabria, Lombardia, Puglia, Sardegna, Sicilia, Trentino, Basilicata, Emilia e Lazio).



Frequency of herd with a least one positive isolation of pathogens

As expected CNS are the prevalent class of bacteria isolated. However, nearly 60% of herds had at least one positive cows for *S.aureus* or environmental strep. *Str.agalactiae* was isolated in 16% of herds and *Prototheca* spp. on in 6% of them.

MATERIALS & METHODS

Data were collected through a questionnaire specifically developed to collect data on herd management, therapeutical protocols and mastitis occurrence routinely applied in our advisory service to farms (Gesam questionnaire). Quarter milk samples were collected from 15-36 cows based on an epidemiological sampling scheme.

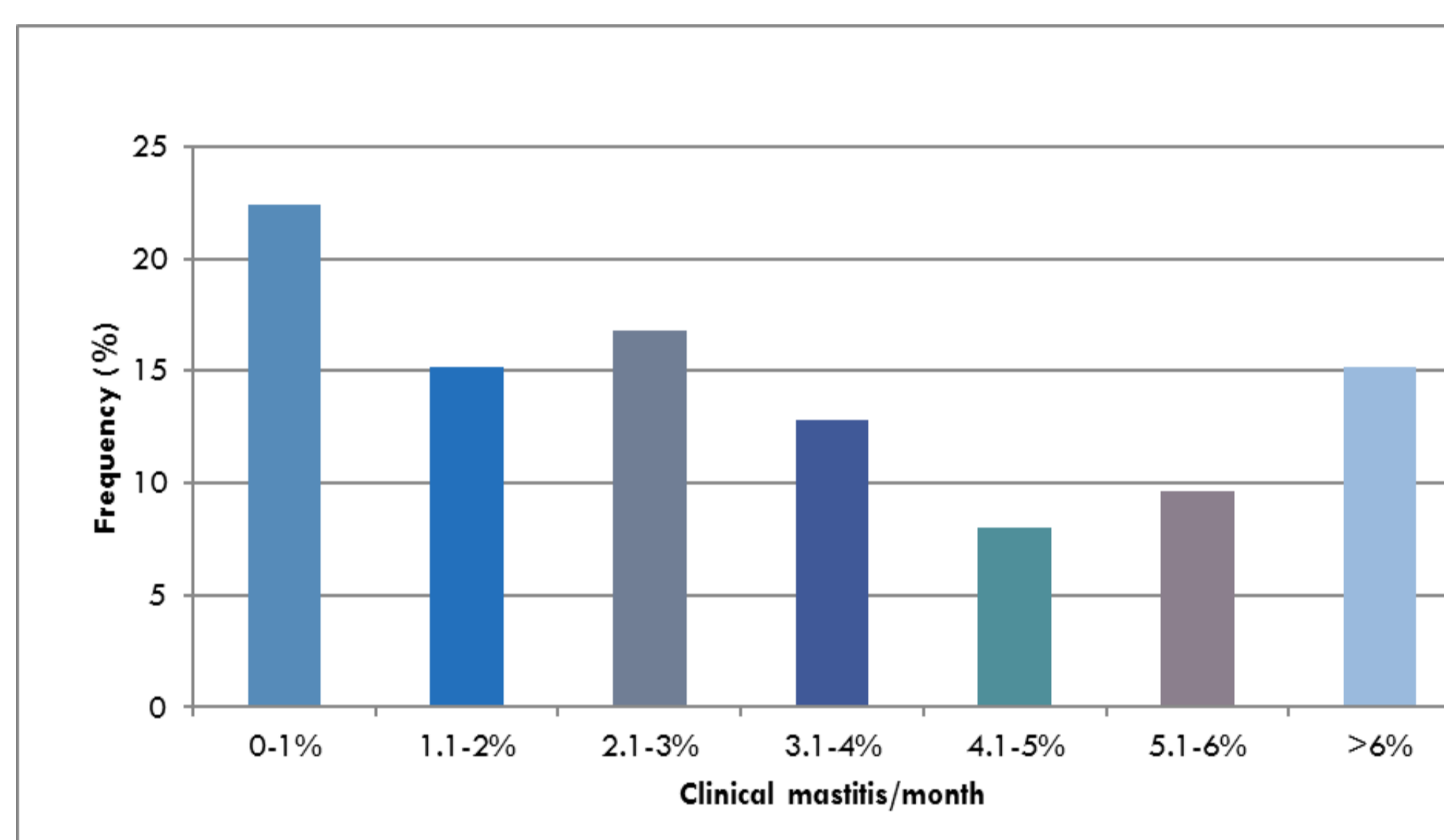
Mastitis costs were estimated by partial budget analysis applying the spreadsheet developed by Fetrow and modified to fit to Italian dairy herd characteristics.

To define herd objectives, the following rules were applied:

- Reduction of BTSCC below EU legal threshold (400.000 cells/ml) if herd average showed valued over the threshold
- Reduction of BTSCC of 30% if the values were below legal threshold but higher than 250.000 cells/ml
- Reduction of BTSCC of 20% in all the other cases
- Reduction of clinical mastitis monthly frequency to 2% if actual incidence was in the range 2-4%
- Reduction of clinical mastitis monthly frequency of 50% if actual incidence was higher than 4%

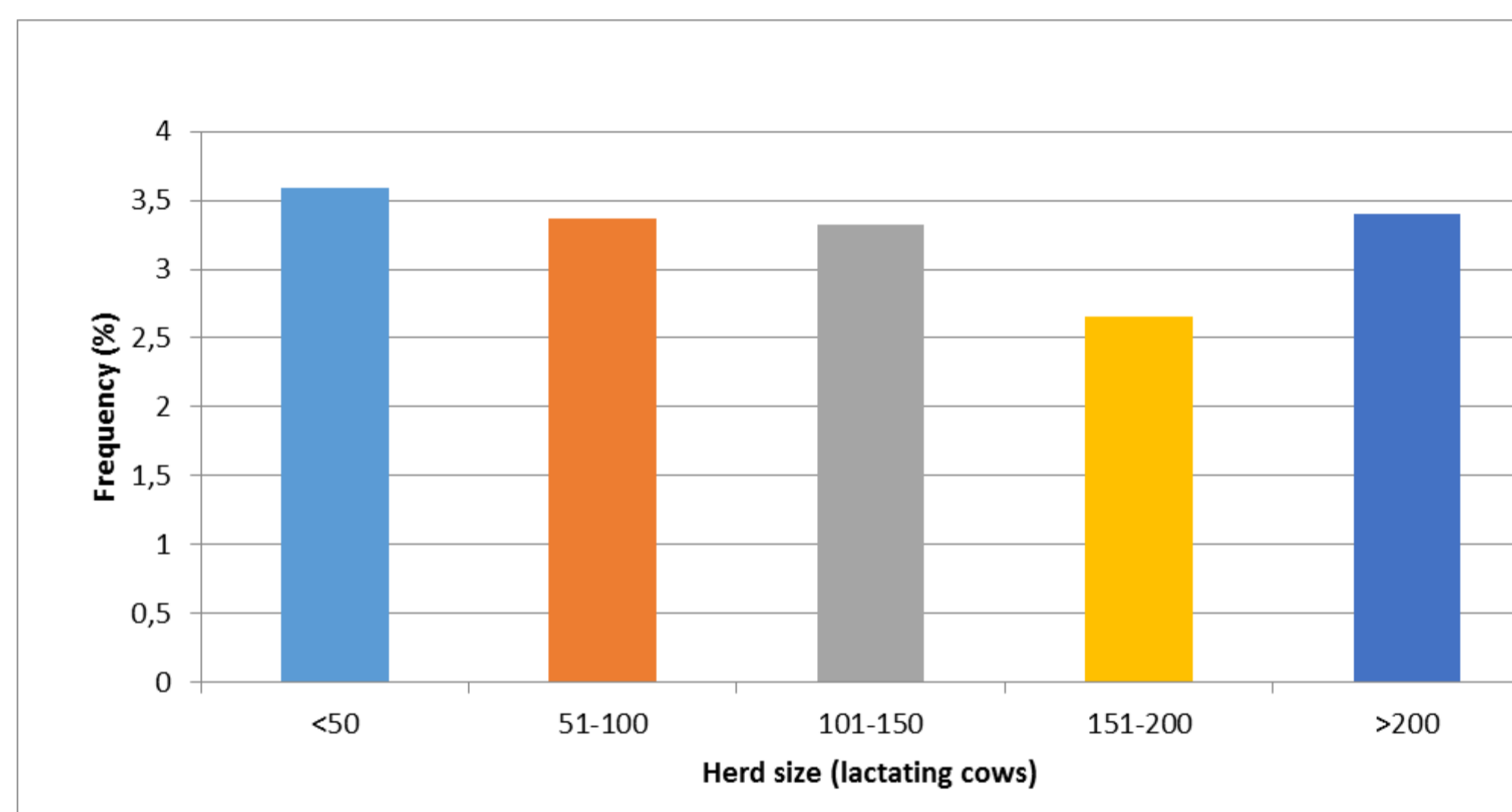


Dots represent Regions involved in the study



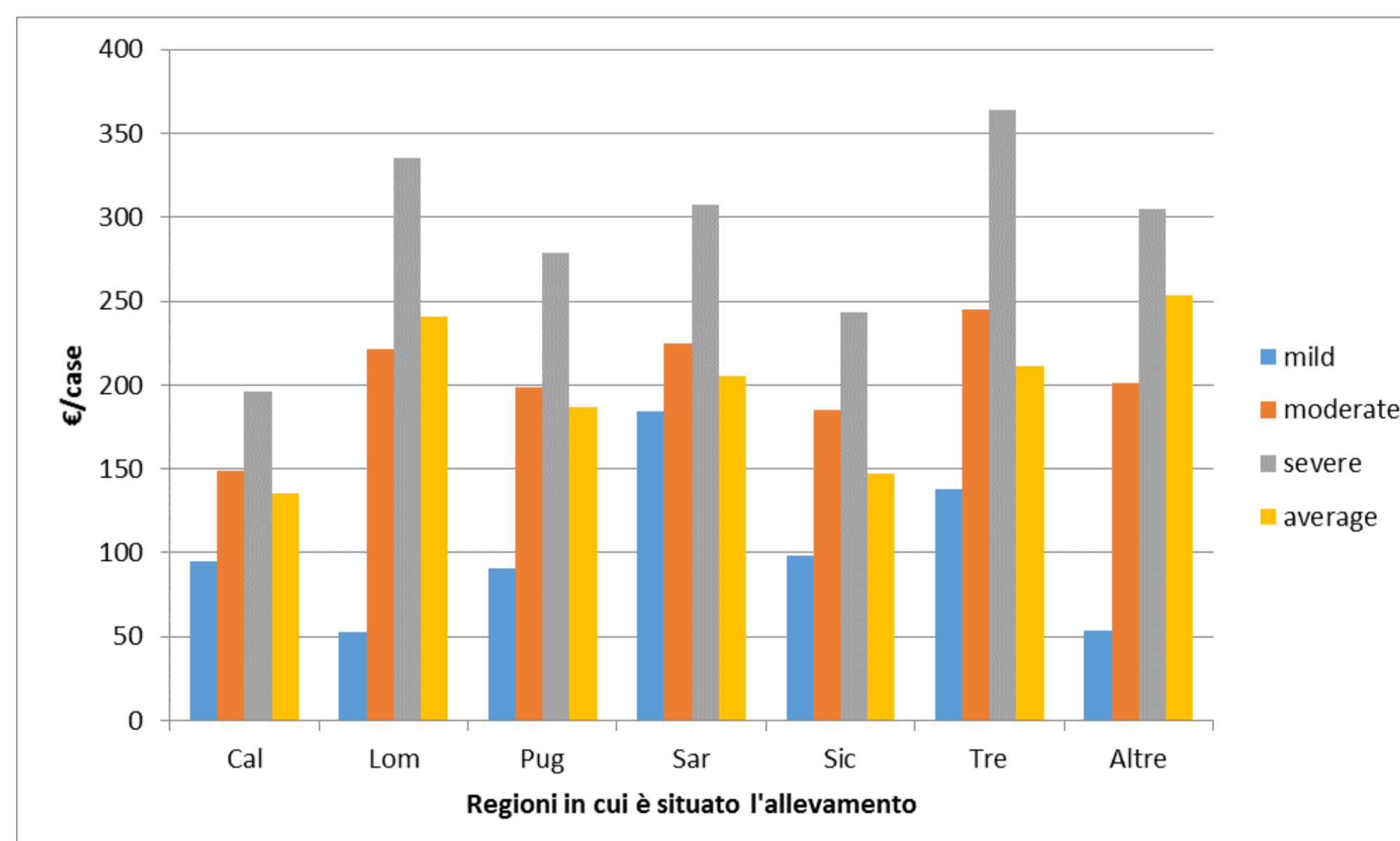
Frequency of clinical mastitis

15% of herd have a frequency of clinical mastitis >6% and 42% of them >2%, being this latter value as the maximum value generally considered as acceptable. Data were based on figures supplied by herdsman, and, very likely, underestimated the real frequency because mild mastitis are often undetected.



Frequency of clinical mastitis by herd size

Clinical mastitis frequency declines as herd size increases up to 200 lactating cows. Herd with 151-200 cows are generally the most efficient among the Italian herds. Large herds (>200 cows) have 30% more mastitis than herd with 151-200 cows. This suggest that larger operations have a less efficient mastitis management compared to herd with 151-200 cows.



Clinical mastitis costs by severity and herd region

Clinical mastitis costs differ by region. Herd characteristics, breeds and milk yield are similar among regions, when herd of the same size are compared. Therefore, the difference in costs, very likely, are due to the application of different therapeutical protocols which are based on local habits and not on rational and prudent use of antibiotics.

RESULTS & CONCLUSIONS

Microbiological data showed as contagious pathogens were recovered in more than 60% of the herds, while environmental strep were recovered from 57% of the herds and coliforms from 13% of them.

Data show that clinical mastitis frequency is still very high in Italian herds with 30% of herds having a monthly frequency of clinical mastitis in the range 2-4% and 33% with a frequency higher than 4%. Risk factors as cow age, season and housing have an influence on clinical mastitis occurrence, but their importance was strongly influenced by herd hygiene management, as suggested by the different frequencies related to herd size.

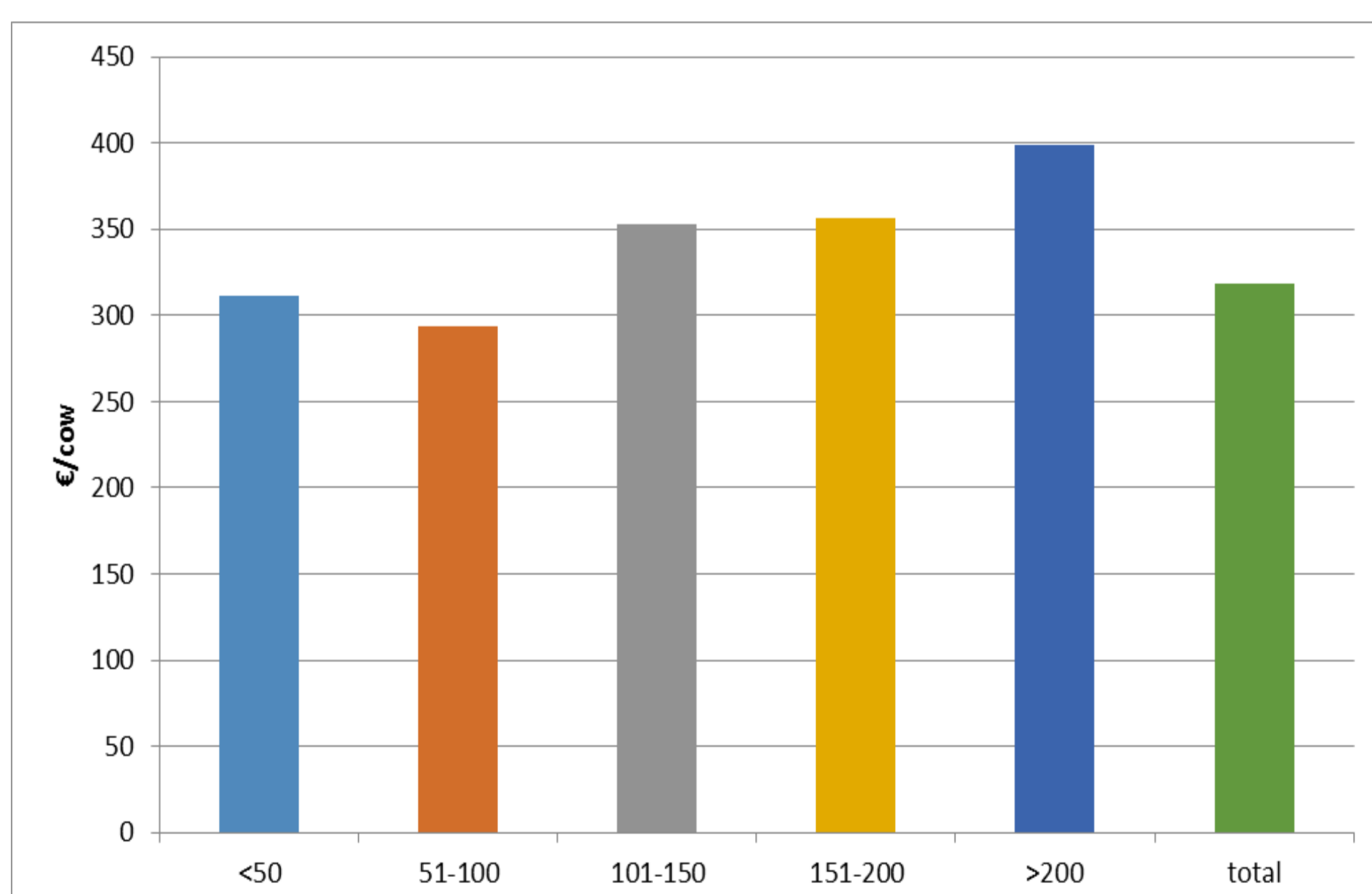
The data showed as the average cost of clinical mastitis was 177€/case with mean costs of 96€/case for mild cases and 263€/case for severe ones, while the overall cost for intramammary infections estimated was 318€/cow.

These data confirm the economic burden represented by mastitis and the potential benefit of the introduction of efficient and rationale control programs. Moreover, these programs will decrease antibiotic usage and increase revenues for dairy farmers.

	Clinical mastitis (€)			
	Mild	Moderate	Severe	Average
Mean	96	190	263	177
Min	26	74	96	65
Max	287	475	586	447

Clinical mastitis costs by severity

Cost were calculated by a spreadsheet including: labor costs, milk losses, premature culling and therapy. Min and Max values refer to the herd respectively with the lowest and the highest cost for single mastitis case. Cost were estimated for each individual herd enrolled in the study.



Total mastitis cost by herd size

Costs were calculated by partial budget analysis based on Fetrow spreadsheet, as reported in Material & Methods and includes both clinical and sub-clinical mastitis. Smaller herds showed lower cows when compared to larger ones. This is probably due to the higher labor costs observed in large herds and to larger milk losses generally observed in these herds. The average cost of 318€/cow shows the potential economic benefits for a farmer when a mastitis control program is successfully implemented.