

A SIMPLE METHOD TO CALCULATE THE COST OF MASTITIS UNDER SPANISH FIELD CONDITIONS

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OBJECTIVES

The calculation of the cost of mastitis is complex and has been associated with multiple factors: the disease (prevalence, severity, effects, aetiology, concurrent disorders, etc.), the animal (lactation status, age, productive level), the setting (treatment protocols, methods of prevention, elimination, management), and prices (value of different expenses, price of milk, penalties and premiums). The complexity and heterogeneity of the many variables involved and their interactions promote duplication of effects and errors, and affect the credibility of results. When trying to calculate the cost of mastitis at field level, simplicity and clarity are.

METHODS

We calculate the economic cost on the basis of 3 factors:

1. Expense associated with treatment: it takes into account the appearance of new cases of clinical mastitis (CM), the price of milk and the productive level of the farm, and the days that milk is discarded (it is assumed for 8 days, and none is used to feed calves).
2. Losses in quality premium incentives Part of the European dairy industry penalises or rewards the milk price on the basis of somatic cell counts (SCC). Therefore, the price of milk is strongly affected by the incidence of mastitis.
3. Production losses due to high SCC. There is a strong correlation between The linear score (LS) is a method of interpreting SCC that is strongly associated to milk production.

RESULTS

In the following tables this methodology is applied to a farm with 100 milking cows (40 % first lactations) and 11,200 L/cow/year. This farm is affected by infectious mastitis (*Staphylococcus aureus*) with a 2% new monthly cases and an increase in the SCC to 320,000 cells/ml (Table 1,2,3).

CONCLUSIONS

Bovine mastitis is one of the major causes of economic losses due to. The exercise presented in this paper is a useful tool for the calculation of costs in field conditions is simple and clear.

		Value
A	Average medicine costs (€)	20 €/case
B	Number of days for discarded milk (days)	8 days
C	Average production (L/cow/day)	35 L
D	Average milk price (€/L)	0,358 €
E	Cost of professional fees (€)	20 €/case
F	Monthly percentage of new cases (%)	2 %
G	Number of cows per farm (No).	100
Calculation		Item
H	BxCxD	Discarded milk , value (€)
I	A+E+H	Total losses per case (€)
J	GxFxH	Cost per farm/month (€)
K	Jx12	Cost per farm per year (€)
L	K/G	Impact per cow (€/cow/year)

Table 1. Variables taken into account in evaluation of the cost per clinical case.

Variables		Value	
A	Total cows (No.)	100	
B	Annual production (t)	1,120	
C	Mean annual SCC (cells/ml)	320	
D	LS	5	
E	Milk price (€/L)	0.358	
F	Average feed cost (€/L)	0.200	
G	Annual estimated losses according to LS (L/cow/ year)	540	
Calculation		Item	Cost
H	G x A	Total milk loss (L)	54,000
I	E-F	Economic cost of milk not produced (€/L)	0.158
J	H x I	Estimated annual loss (€/year)	-8,532 €
K	J/A	Impact per cow (€/cow/year)	85.32 €

Table 2. Variables taken into account in the evaluation of milk losses due to a high SCC.

Variable		Value	
A	Basis for SCC premium (x 100 cells/ml)	< 200	
B	Bonus quality premium(€/MT)	6 €.	
C	Basis for SCC penalty (x 100 cells/ml)	> 300	
D	Penalization (€/Tm)	-6 €	
E	Monthly production supplied to industry (MT.)	94	
F	Number of animals	100	
Calculation		Item	Cost
G	D-B	Class A differential (€/MT.)	-12 €
H	G*E	Monthly loss (€/month)	-1,128 €/month
I	H x 12	Annual loss (€/year)	-13,536 €
J	I/F	Impact per cow €/cow/year)	135 €

Table 3. Variables taken into account for receipt of the quality premium.