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Added value of milk for cheese yield in local and cosmopolitan dairy cattle breeds

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Aims

Aim of this study was to compare milk added value from two local Italian cattle breeds (Alpine Grey and Rendena) and two cosmopolitan dairy breeds (Holstein Friesian and Brown Swiss) in Trentino mountain area.

Introduction

Milk from local dairy breeds is considered more suitable to be processed into cheese. Hence, the development of payment systems considering the added value of milk for cheese production could play an important role in the conservation and valorisation of local animal genetic resources.

Materials and Methods

- Milk yield, composition (AIA, 2006), and coagulation properties (rennet clotting time and curd firmness) (Cassandro, 2006) obtained for each breed (Table 1).
- Value of raw milk (€/kg) calculated for each breed simulating the current milk pricing system in Italy.
- Cheese yield (reference Trentingrana cheese) estimated accounting for milk coagulation properties and chemical contents.
- Value of cheese calculated multiplying cheese yield by market price (€/kg) of Trentingrana cheese.
- Added value of milk calculated as:
  value of cheese - value of milk

Traits	Holstein Friesian	Brown Swiss	Rendena	Alpine Grey
305-d milk yield, kg	8324	6637	4636	4428
Fat, %	3.81	4.06	3.56	3.67
Protein, %	3.32	3.50	3.28	3.29
Casein, %	2.54	2.69	2.51	2.54
Somatic cell count, n/ml	258,000	247,000	274,000	200,000
Rennet clotting time, min	17.8	16.6	13.5	16.1
Curd firmness, mm	18.0	24.2	28.6	21.5
Cheese yield, %	6.75	8.02	7.98	7.14
Milk value, €/kg	0.374	0.394	0.364	0.368
Cheese value, €	0.540	0.641	0.639	0.571
Added value, €/kg	**0.166**	**0.247**	**0.274**	**0.203**
305-d added value, €	1382	1641	1272	900

Table 1. Traits and values used to calculate the added value of milk for each breed.

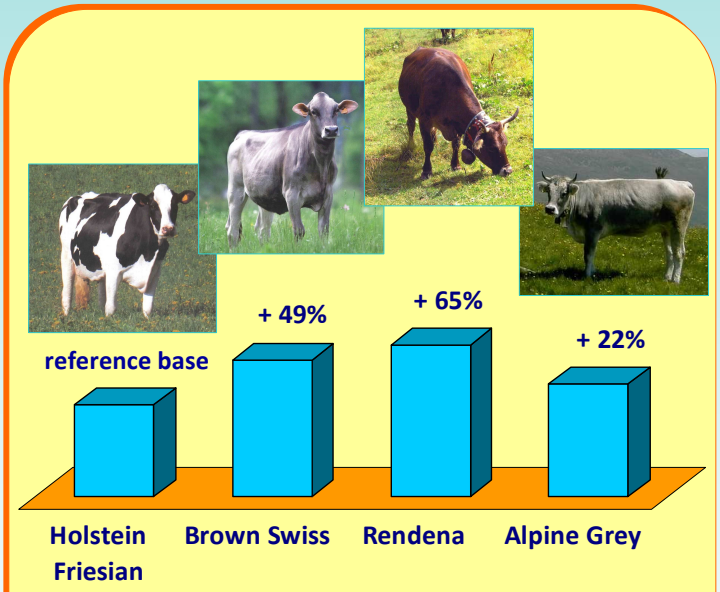

Figure 1. Added value of milk of different breeds expressed as percentage deviation from Holstein Friesian.

Results and Conclusions

- Added values of milk from the two local breeds, Alpine Grey and Rendena, were 22% and 65% larger than Holstein Friesian, respectively, while from Brown Swiss was intermediate and equal to 49% (Figure 1).
- Cheese yield of local breeds might partially compensate for a lower level of milk production.
- Cheese market oriented strategy with payment systems including added value of milk could enhance profitability and interest in rearing and safeguarding local animal genetic resources.