

Comparison of Italian Brown and Italian Friesian milks cheese yield capacity in the production of high moisture mozzarella

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Summary

The aim of the present study was to investigate the factors affecting high moisture mozzarella cheese yield in Italian Brown Italian Friesian milk with special emphasis on the role of milk k-casein content. Working under field conditions, a total of 4 trials were performed in 4 industrial mozzarella cheese factories. In each trial, two vats containing Italian Brown (IB-milk) and Italian Friesian (IF-milk) were processed in parallel. The actual cheese yield of the IB-milk was significantly higher than that of IF-milk (15.51 vs 12.86 kg/100kg of milk; $P \leq 0.001$). This difference can be explained by the different cheesemaking losses during the trials; in fact, losses of protein (23.27 vs 28.05 %; $P \leq 0.05$) and curd fines (338 vs 554 mg/kg; $P \leq 0.05$) resulted to be lower in IB-milk. The different losses could be related to the differences in the chemical composition of the milks. In particular, IB-milk had higher content of fat, crude protein, casein, k-casein B and all these parameters are positively correlated with milk cheese yield capacity. In conclusion, the chemical composition of Italian Brown milk seems to be more suitable for mozzarella production in comparison to that of the Italian Friesian milk. The results obtained may be relevant for the profit of the cheese factory; the Italian Brown milk, in fact, produced 2.65 kg of mozzarella cheese more than the Italian Friesian milk for each 100 kg of milk transformed.