Contribution of wild strains of lactic acid bacteria to the typical aroma of an artisanal cheese

Freni K. Tavaria, A. César Silva Ferreira and F. Xavier Malcata
Escola Superior de Biotecnologia, Universidade Católica Portuguesa, Rua Dr. António Bernardino de Almeida, 4200-072 Porto, Portugal

Rationale

Artisanal cheeses  Raw milk  Indigenous flora
Aroma of Serra da Estrela cheese  Mainly volatile fatty acids (VFAs)

Consumers’ perception  Slightly acidic, sweaty, “sheepy-like”

Materials and Methods

Experimental cheeses
- Control – without starter addition
- With addition of Lactobacillus plantarum
- With addition of Lactococcus lactis
- With addition of Lactobacillus plantarum and Lactococcus lactis

Volatile and free amino acid analysis

Sensory analysis

VFAa with highest CV
- Butyric and iso-valerian acids added to unpasteurised (or) cheese matrix
- Odour
- Assessment by panel

The panel rated the reconstituted matrix (Ca + CS + ethyl mercaptan) and samples with both acids closest to the reference, suggesting that addition of Ca and CS can explain aroma of Serra da Estrela cheese to a great extent.

Conclusions

Experimental cheeses manufactured with the addition of Lactobacillus plantarum yielded high sensory scores (Macedo et al., 2004), and higher amounts of volatiles (for similar ripening time) than those manufactured without starter addition — hence suggesting that addition of this culture favours the overall flavour profile and helps reducing ripening time of Serra da Estrela cheese.

Acknowledgments

The first author gratefully acknowledges financial support by the Portuguese government, through program PRAXIS XXI (BD-007359).

References

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