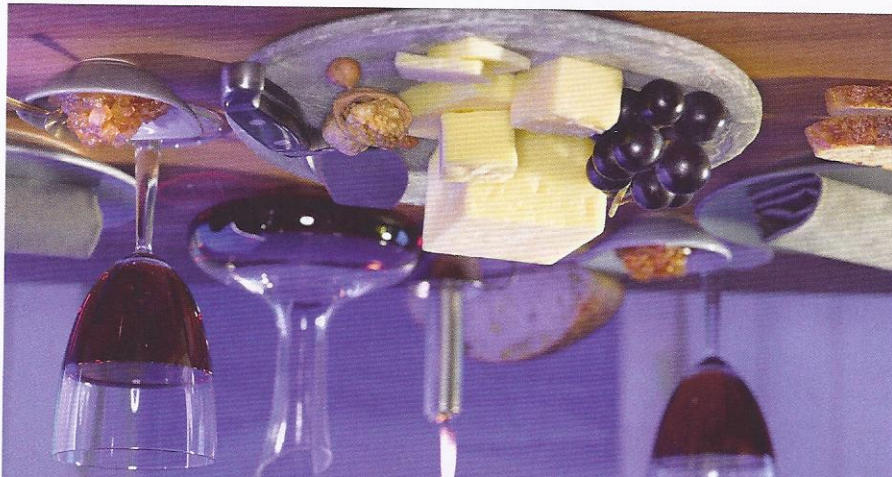


Calcium as an icon



What happens when calcium is removed from milk products is the subject of the latest issue of the *International Journal of Dairy Technology*. Andrew Wilbey reports

The first issue in 2015 of the *International Journal of Dairy Technology* (volume 68) leads with a view of the practical consequences of calcium addition to and removal of milk and milk products. This is of immense importance to the dairy industry; apart from the nutritive value of this source, ionic calcium plays a key role in the manufacture of most dairy products from coagulation of milk in cheese to thermal stability. A second part covers the applications of nanotechnology in cheese technology, from generation of ripening to fortification with micronutrients and the potential to increase the shelf life of cheese products.

Sticks to the micellar structure, and concentrates can be prepared. Skimmed milk by microfiltration, passing at low temperature increased protein losses to create a low-B-casein concentrate, while higher temperatures with a high-B-casein concentrate with foam stability and gel strength.

Sonal variation is an age-old problem in product manufacture. Improved milk in nine per cent reconstituted and milk powder from summer and autumn milks was related to the protein content and inversely to the fat content of raw milks. Whipping properties of raw milks did not exhibit any significant variation other than between the capacity of the raw milk (largely unrelated) and whipping time.

Applications

A recent report on the development of a volume heat stability test for use on combined concentrated milks was based, employing a microfluidiser to create the emulsion then immersion in a bath at 121°C before cooling and measurement of viscosity and particle size.

Para-casein (K-CN) is a vital component in the stabilisation of casein micelles. A study of polymorphism of genes in Nili-ravi buffalo, Achai buffalo carried only the BB gene (Achai cattle carried three genes BB and BB) and Sahiwal carried AB only. BB is absent in most breeds. An examination of the serum is essential for the survival of neonate. An examination of the

Cheese

Four batches of cheddar cheese curd were produced with high and low calcium + phosphorus (Ca+P) and high and low residual lactose. Each batch was salted at two levels, to give eight cheeses in all. These cheeses were subsequently converted into processed cheese. High Ca+P and high salt-in-moisture cheeses

It has been suggested that camel milk consumption can aid control of type 2 diabetes mellitus. A feeding study employing streptozotocin-induced, diabetic rats demonstrated reduced hyperglycaemia, blocked fibrinogen consumption and restored platelet aggregation. Fortification of mixed bovine and buffalo milks with calcium and vitamin D had no effect on sensory scores but sensory scores, viscosity and other values increased with fat content.

Whipped harder than the low variants, with decreased flow rates. Residual lactose levels had no effect on these properties. Smoking cheese runs the risk of accumulating polycyclic aromatic hydrocarbons in the product. A study with smoked mozzarella indicated that the process strongly influenced the level of contamination. The use of liquid smoke carried the least risk, while the pattern of hydrocarbons reflected the different techniques and could be used to detect the use of unauthorised procedures. Comparison of protein and carbohydrate-based fat replacers in production of a low fat Turkish Beyaz cheese favoured the protein-based replacer.

Why proteins

Sweetened apple juice beverages were fortified with whey protein isolate (WPI) or a whey protein hydrolysate (WPH). While viscosity could be more effectively increased by WPI addition, the sensory scores decreased with increasing WPI or WPH. Acidity control was critical in avoiding sedimentation. **DIJ**