**Production of firm skimmed yoghurts with reconstituted micellar casein and microparticulated whey protein: effect of microparticulation and protein’s ratio**

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The use of microparticulated whey proteins (MWP) has been studied to produce low-fat yoghurts due to their particle size similar to fat globules. Their addition to yoghurt improves desired sensory properties, such as creaminess1. Nevertheless, MWP produce weak gel yoghurts with a higher level of serum separation1,2. This research aimed to study the effect of microparticulate degree (MWP1 and MWP2) and the whey protein: micellar casein (WP:MC) ratios (20:80; 50:50) on the physicochemical and rheological characteristics of firm skimmed yoghurts at 8% of total protein using reconstituted proteins in water.

The microparticulate of WP did not modify the pH and the colour of the yoghurts but those with a reconstituted WP:MC ratio of 50:50 showed less acidity than yoghurts with a ratio of 20:80. Yoghurts containing reconstituted MWP showed less gel firmness1,2 and less viscoelastic behaviour than the yoghurts with reconstituted non-microparticulate WP. The WP:MC ratio also influenced the texture properties3. The higher content of reconstituted MWP in yoghurt produced lower gel firmness4. Between the two MWP, yoghurts with MWP1 showed less water-holding capacity than MWP2 and non-microparticulate ones. These differences can be explained by the fact that MWP2 samples were subject to a low microparticulate treatment. In conclusion, the degree of microparticulation modified the rheological characteristics of yoghurt5 and these differences were more intense in the yoghurts with high content of MWP (ratio 50:50).

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