Effects of fish collagen hydrolysate (FCH) as fat replacer in the production of buffalo patties

ABSTRACT

Pork and bovine collagen incorporated into meat products showed promising functional properties as food ingredients but has the halal issue. This study investigated the effect of incorporating fish collagen hydrolysate (FCH) as a fat replacer in buffalo patties in terms of proximate values, texture and colour properties. There were five different formulations including a control (10% fat, 0% FCH), A (7.5% fat, 2.5% FCH), B (5% fat, 5% FCH), C (2.5% fat, 7.5% FCH), and D (0% fat, 10% FCH). There were no significant differences ($p>0.05$) between all formulations in terms of cooking yield, shrinkage, water-holding capacity, and pH value. The sensory test showed no significant difference ($p>0.05$) between all formulations in terms of colour, appearance, juiciness, aroma, and overall acceptability, while sample D with 10% FCH had significantly lower (p0.05) in terms of textural properties, except formulation B and formulation C which exhibited significantly (p0.05) in yellowness and redness of buffalo patties with or without FCH incorporation before and after cooking. In conclusion, FCH has the potential to be used as a fat replacer in the production of lowfat patties.

Keyword: Buffalo patties; Fat replacer; Fish collagen hydrolysate; Halal collagen