

Development of a Low Fat Chicken Meat Ball with a Suitable Fat Replacer

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Development of low fat meat products becomes increasingly popular in the world market. Meat ball is one such popular formed meat product and development of a low fat chicken meat ball is attempted to fulfill the consumer satisfaction. Original chicken meat ball formula was modified by introducing equal amounts (6%) of isolated soya protein (ISP), TVP and gelatin as fat replacers to produce three new formulae. All samples were prepared under same conditions and the organoleptic characters were tested using 30 untrained panelists. After finalizing the best fat replacer, loose meat percentage of original 'thicken meat ball formula was changed and three new formulae were prepared using loose meat and fat replacer combinations of 18% and 6%, 20% and 4%, 22% and 2% respectively. Commercial chicken meat ball was taken as the control. Organoleptic characters of four meat ball samples were tested again. Keeping quality characters were also measured for one month storage period at weekly intervals. Proximate analysis was conducted for all samples. Data were analyzed using MINITAB and SAS statistical packages. Friedman test revealed that at least two treatments were significantly different ($P < 0.05$) for aroma, taste and overall acceptability. 1SP was selected as the best fat replacer as ISP added meat ball showed the highest median values for sensory qualities. The second experiment was conducted to select the best combination of loose meat and fat replacer and no significant difference ($P > 0.05$) observed among the treatments for sensory characters except for overall acceptability. Highest median value for overall acceptability was recorded for treatment A (loose meat 18% and ISP 6%). pH values of all samples decreased during the storage period but no significant difference ($P > 0.05$) observed among treatments. Water holding capacity did not significantly ($P > 0.05$) decrease during the storage period. There was no significant difference among treatments ($P > 0.05$) for protein, dry matter and ash contents except for crude fat contents ($P < 0.05$). Treatment A had the lowest median value for crude fat whereas the control sample had the highest. Therefore Treatment A was selected as the best formula for a low fat chicken meat ball.

Key words: Low fat, Isolated soy protein, Loose meat, Meat ball