

**COMPARISON OF DIFFERENT TYPES AND  
CONCENTRATIONS OF HYDROCOLLOIDS  
ON FAT CONTENT AND SENSORY  
PROPERTIES OF INSTANT  
NOODLE**

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**2010**

## ABSTRACT

Instant noodle undergo deep frying process and markedly contain high oil content that is not essential for product quality and detrimental to consumers' health. This study was aimed to formulate instant noodles incorporated with hydrocolloids to reduce oil uptake during frying, and to determine chemical composition in terms of fat, moisture, ash and protein content and also sensory properties of the newly formulated noodles. Methylcellulose (MC), hydroxypropylmethylcellulose (HPMC), carboxymethylcellulose (CMC) and Soy Protein Isolate (SPI) hydrocolloids were used at 0.5%, 1.0% and 1.5% concentrations. A continuous marked reduction in oil uptake was observed as the level of hydrocolloids increased. At the same concentration level, addition of 1.5% MC (F3) had more significantly contributed to the reduction in oil uptake than HPMC (F6), CMC (F9) and SPI (F12). Fat content was significantly reduced to  $16.47 \pm 1.47\%$ ,  $16.98 \pm 1.06\%$ ,  $17.19 \pm 1.58\%$  and  $19.39 \pm 0.00\%$  respectively over control which was  $23.16 \pm 0.59\%$ . Inversely, F3 had retained the highest moisture which was  $7.83 \pm 0.29\%$  over control,  $4.33 \pm 0.93\%$ . In protein analysis, F12 had significantly increased protein content to  $9.43 \pm 0.32\%$  while in ash content analysis, F3 ( $1.78 \pm 0.05\%$ ), F9 ( $2.02 \pm 0.04\%$ ) and F12 ( $1.79 \pm 0.03\%$ ) exhibited significantly higher ash content than control ( $1.57 \pm 0.08\%$ ). In QDA, F3 and F6 indicated a slight increase in yellowness but F12 showed significant darkening in cooked noodles. Besides, F3, F6, F9 and F12 marginally increased the firmness intensity of the samples. Hydrocolloids incorporation have no significant effect towards greasy mouthfeel, macro roughness, springiness and cohesive of mass. Meanwhile in hedonic test, the overall acceptability of newly developed instant noodles of F3 ( $5.9 \pm 1.4$ ) and F6 ( $5.9 \pm 1.6$ ) recorded higher preference ranking compared to the chosen commercial ( $5.5 \pm 1.8$ ), and overall, F6 was rated as the most preferred sample. Conclusively, incorporation of hydrocolloids in instant noodle reduced fat significantly and improved appearance, texture and overall acceptability to certain extent, contributing to positive consumers' acceptability.