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Tingting Liu, Nazimah Hamid, Kevin Kantono, Loveena Pereira, Mustafa M. Farouk, Scott O. Knowles

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Effects of meat addition on pasta structure, nutrition and *in vitro* digestibility

Tingting Liu[a], Nazimah Hamid[a*], Kevin Kantono[a], Loveena Pereira[a], Mustafa M. Farouk[b], Scott O. Knowles[c],

[a] *School of Applied Sciences, Auckland University of Technology, Private Bag 92006, Auckland 1142, New Zealand*

[b] *AgResearch Ltd. Ruakura, Hamilton, New Zealand*

[c] *AgResearch Ltd. Palmerston North, New Zealand*

*Corresponding author:

Nazimah Hamid

Faculty of Health and Environmental Science

AUT University, Private Bag 92006, Auckland 1142, New Zealand

Tel.: +64 921 9999 x 6453;

Email: nazimah.hamid@aut.ac.nz

Abstract

In our study, semolina flour was substituted with beef emulsion (EM) at three different levels of 15, 30 and 45% (w/w) to develop a pasta with enhanced nutritional profile. The protein, fat, and water content significantly increased with addition of meat. The addition of meat enhanced the pasta gluten network. The redness and yellowness of cooked pasta increased with meat addition. Tensile strength increased from 0.018 N/mm^2 in the control sample to 0.046 N/mm^2 in 45EM sample. All meat-containing samples had significantly higher elasticity than control (0.039 N/mm^2). GI significantly decreased and IVPD value increased in 45EM sample. Five essential amino acids (leucine, lysine, methionine, threonine, tryptophan) in pasta digesta increased significantly with increasing meat addition.