EFFECTS OF THE ADDITION OF TRANSGLUTAMINASE ON COOKING QUALITY OF WHOLE GRAIN WHEAT FLOUR PASTA

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Fiber addition may cause technological problems in the end products. The aim of this study was to develop and to analyze the influence of the transglutaminase on cooking quality of whole grain wheat flour pasta (WGWF). Two formulations were prepared with 75 % WGWF and 25 % refined wheat flour: one with 0.5% transglutaminase (WGT) and another without transglutaminase (WG). A standard formulation with only refined flour (SF) was also prepared. The pastas presented a statistical difference (p <0.05) only for the optimum cooking time. The values for this parameter were 9.02 ± 0.02a, 8.45 ± 0.07b and 8.06 ± 0.10c (min); the values for cooking loss were 3.78 ± 0.15b, 4.36 ± 0.08a and 4.39 ± 0.03a (%); the values for water absorption were 125.25 ± 3.28a, 114.77 ± 1.44b and 115.11 ± 1.20c, corresponding to SF, WGT and WT. The values for firmness were 5.96 ± 0.23a, 7.01 ± 0.53b and 6.54 ± 0.56b; the values for adhesiveness were 2.09 ± 0.24ª, 1.61 ± 0.15b and 0.92 ± 0.22c; and the values for elasticity were 0.25 ± 0.03a, 0.30 ± 0.03a and 0.27 ± 0.02a, respectively for SF, WGT and WG. The pasta with and without enzyme differed significantly (p < 0.05) from each other and also when compared to SF in relation to firmness and adhesion parameters. These results indicate a possible effect of transglutaminase in the formation of cross-links between groups of lysine and glutamate, resulting in an increment in firmness. Acknowledgements to CAPES, FAPESP, BUNGE, SUL MINEIRO and AJINOMOTO.

Keywords: whole grain wheat flour, transglutaminase, pasta.