The understanding of the lipid digestion mechanism has several applications and enormous commercial potential. Vegetable products are sources of substances able to interfere or modulate the activity of digestive enzymes. Flaxseed (*Linum usitatissimum* L.) is used in the development of functional food because of its high content of omega-3 fatty acids and other bioactive compounds. In the present work the pH-Stat methodology was used to evaluate the effect of the concentration and cooking-extrusion of the flaxseed meal on the pancreatic lipase (PL) activity, enzyme responsible for 50-70% of the lipid digestion. The pH-Stat method, used for the characterization of lipid digestion, is technique based on the quantification of free fatty acids released from triglycerides (TG) by lipases. To simulate what happens in the digestive tract, the reaction medium (17 ml) contained bovine bile 25 mg/ml, NaCl 250 mM, CaCl$_2$ 5.6 mM, Arabic gum 0.08% (w/v), tributyrin (model TG) 15 mg/ml in phosphate buffer (pH 7, 50 mM). Porcine pancreatic lipase (3 ml, 0.03 mg/ml) were added to the reaction solution. The extruded flaxseed meal at a concentration of 6.8 mg/ml behaved as an inhibitor of the PL (48% reduction). The observed effect on lipolysis is attributed to both the emulsifying properties (indexes of emulsifying activity and stability, emulsifying capacity) of flaxseed proteins and polysaccharides, and protein denaturation due to the heat treatment that in turn would expose hydrophobic segments increasing the affinity to the emulsion oil/water interface.

**Keywords**: lipase, emulsion stability, protein, heat treatment, lipolysis.

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