

Metabolism protein muscle response of young growing rats to diet containing extruded chickpea (*Cicer arietinum L.*)

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ABSTRACT

Extrusion process was able to increase the nutritional value of legumes. The aim of the present study is to report data on the skeletal muscle protein synthesis rate in Wistar male rats (70–80 g initial BW) fed *ad libitum* over a 15 d an extruded chickpea diet with or without amino acids supplemented. Animals were divided in three dietary groups (n=10) as follows: C (control, casein), ECH (extruded chickpea) and ECHS (extruded chickpea + amino acids). Food intake was the same in 3 groups along the experimental period. Diets were isoenergetic and isoproteic (11%). Body weight changes and food intake were daily recorded. The fractional rate of muscle protein synthesis (Ks) was evaluated by the flooding dose of [³H]-phenylalanine. As compared to C, ECHS fed animals, no significant differences were found in *gastrocnemius* total protein, DNA and RNA contents. No differences were observed either in the ratios RNA/protein, and muscle Ks or RNA/DNA (protein synthesis capacity, PSC), but these parameters were significantly reduced (p<0.01) in ECH fed rats. This fact involves that feeding growing rats an ECHS-diet did not alter PSC. It could be suggested that amino acid addition to extruded diets improves the muscle protein metabolism and synthesis rate and further studies are needed to explore a better farm animal growth.

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