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III CONFERENCIA INTERNACIONAL DEL GRUPO VaSe-Food NETWORK y VI Simposio Chia-Link 2021

Valiosas semillas ancestrales Iberoamericanas
para la alimentación del futuro



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Editoras

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EVALUATION OF FUNCTIONAL AND NUTRITIONAL PROPERTIES OF HYDROLYZED BROAD BEAN AND QUINOA FLOURS

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ABSTRACT

In sports nutrition, protein intake is essential to stimulate protein synthesis and repair muscle damage caused by exercise. The search for non-traditional protein sources has increased in recent years. Due to their properties, quinoa (*Chenopodium quinoa* Wild.) and broad beans (*Vicia faba* L.) grains could be used in the production of protein products. Broad beans are an introduced and widely expanded crop in South America; it is part of the Argentine Northwest Andean population diet. The aim of this work was to evaluate the functional and nutritional properties of hydrolyzed quinoa (HQF) and broad bean (HBF) flours for their use

in the elaboration of protein foods for athletes. Both hydrolyzed flours were obtained using Flavourzyme at 50°C and pH 8 for 3 and 1 hour, respectively. HQF presented a higher degree of hydrolysis (21.79%) while HBF had higher protein content (57.31%), yield (32.14%), and protein recovery (71.31%). In HBF and HQF, Na and K were the most abundant minerals, both necessary for the replacement of electrolytes lost during physical training. HBF and HQF presented 5909.63 and 2708.91 mg/100g of contents branched amino acids respectively, essential in sports nutrition. Regarding technological properties, HQF presented hi-

gher emulsifying activity, stability indexes, and foaming capacity (61.30 m²/g and 158.6 min, 131%) respectively while the range of solubility in function of pH of HBF was wider and showed good foaming stability (68-92%). These results indicate that HQF and HBF could be a new source of dietary protein for food product manufacture, as well as a potential ingredient for athletes protein supplements formulation.

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