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BIOACTIVITIES IN RISING ALTERNATIVE PROTEINS FOR FOOD APPLICATIONS

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Meat is over consumed in western world with several health risks being associated, while plant proteins have shown significant protective effects. In addition, one major source of green house gas emissions is cattle. Hence, there is an urgent need to shift towards a more plant based diet for both environmental and public health reasons. Fava bean (*Vicia faba*), narrow leafed lupin (*Lupinus angustifolius*), rapeseed (*Brassica rapa/napus* subsp. *Oleifera*), flaxseed (*Linum usitatissimum*), oil hemp (*Cannabis sativa*), buckwheat (*Fagopyrum esculentum*) and quinoa (*Chenopodium quinoa*) are among the most promising protein rich plants in the boreal climate of Finland. The main limiting factors for using plant proteins in foods are their taste and non nutritive compounds. The goal of this work was to respond to this need and determine various nutrients and non nutrients in the commercial products of these crops and to find economically and environmentally sustainable novel processing methods to enhance and diversify the use of plant protein in food products. All methods used have been accredited or thoroughly validated. These crops turned out to represent rich sources of energy, fiber,

high quality protein, as well as bioactive compounds such as phenolic compounds. Non nutritive compounds found in plant protein sources were tannins and glucosinolates, for example. We observed that pressurized hot water extraction (PHWE) and enzymatic treatments were able to recover high quality protein concentrates from linseed and hemp seed by-products. To assess the nutritional quality of the proteinaceous extracts, amino acid composition and digestibility of the extracts were evaluated. Funding from Strategic Research Program (SRC) in Finland (Novel protein sources for food security, ScenoProt) is gratefully acknowledged.

Biography

Anne Pihlanto has completed her PhD in Food Chemistry at University of Turku, Finland and Postdoctoral studies from University of Lyon. She works as Scientist at Natural Resources Institute Finland. She has published more than 100 papers in reputed journals and invited chapters in books.

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