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Soya protein can be replaced by rapeseed protein

Nutritionists at Jena University point out an additional dietary protein source for humans

Today, more than 500 million people are suffering from a lack of adequate protein in their diet. Each year, the number of human beings increases by 80 million, a figure which is equivalent to the present population of Germany. Thus, providing enough food, particularly sufficient protein for the increasing populace is a challenging task for societies all over the world. On a prospective basis, a progressively smaller proportion of human protein requirement can be provided by animal proteins such as meat, eggs, and milk. "However, by feeding valuable plant protein to animals, almost two third of it is wasted as it is transformed into animal protein," Professor Dr Gerhard Jahreis, nutritionist at Friedrich Schiller University Jena (Germany), says.

Rapeseed oil with its high nutritional value due to significant amounts of omega-3 fatty acids has gained a strong place in the human diet in recent years. Professor Jahreis comments: "Annually, 60 million tons of rapeseed are harvested worldwide, corresponding to about 15 million tons of rapeseed protein which is fed only to animals. We are taking a keen interest in making this important protein source available for human consumption." The research team at Jena University has now conducted the first human study worldwide on the use of rapeseed protein for human nutrition. Results from the study have recently been published in the internationally renowned journal "Clinical Nutrition" (dx.doi.org/10.1016/j.clnu.2012.11.005).

For the study, cold-pressed rapeseed oil was firstly produced under mild conditions. In cooperation with a Canadian Company, a protein isolate extracted from the residue was used in a study involving 28 volunteers. The study participants consumed either rapeseed protein isolate or soya protein isolate. After ingesting the protein meals, eight blood samples were drawn from each participant and the postprandial amino acid response in blood was analysed. Prof. Jahreis sums up: "Our findings have shown that there is no difference in the bioavailability between these two protein sources. Thus, soya, mostly cultivated in South and North America, and diversely used in the production of foods, can be fully replaced by rapeseed protein harvested in Europe."

Currently, legislation in Europe prevents the use of rapeseed protein for human nutrition. It requires registration as a "novel food" by the European Union. Ireland has already agreed to its use. In Germany, producers capable of isolating rapeseed protein are already waiting in the wings. The findings of the present study from the research group at the University of Jena represent a big step towards authorising approval of rapeseed protein for use in human nutrition.

Original publication:
Manja Fleddermann, Anita Fechner, Andrea Rößler, Melanie Bähr, Anja Pastor, Frank Liebert, Gerhard Jahreis (2013): Nutritional evaluation of rapeseed protein compared to soy protein for quality, plasma amino acids, and nitrogen balance - a randomized cross-over intervention study in humans. Clinical Nutrition, dx.doi.org/10.1016/j.clnu.2012.11.005.

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Professor Dr Gerhard Jahreis, nutritionist at Jena University (Germany).
Photo: Jan-Peter Kasper/FSU

Rapeseed protein harvested in Europe can replace soya as dietary protein source for humans.
Photo: Anne Günther/FSU