

Challenges of Extraction, Processing and application of Rape Seed Proteins

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Proteins of rape seed possess one of the highest functional potential of all oilseeds but also show the most problems in extraction.

Reasons for partially amazing functional properties are the high content of albumin and its distinctly structural differences compared with globulin. On the other hand hydrolytic derivatives of the glucosinolates, penolic components and phytic acid strongly interact with proteins and deteriorate the 'native' functionality.

A lot of information is available in the literature on the effect of extracting procedures on protein functionality and fields of application. However, there is no technology to produce rape seed proteins in large scale and of high standard up to now.

This paper will discuss some main aspects of rape seed functionality, problems of extracting and some first results of projects done by PPM to deduce new research tasks and process approaches for rape seed processing.

Emphasis of our research are a new desolventising process to get rape seed meal with a high PDI and various technologies for protein extraction which are directed towards protein isolate applications. The membrane filtration is the central technique to purify rape seed proteins.

Starting with rapeseed cake a completely different processing is necessary resulting in low-price products.

The challenge in rape seed processing is to combine different production lines to a 'holistic' rape seed processing comprising deoiling, protein extraction and utilization of by products.