

Call text – Food and health 2023

Lantmännen Research Foundation supports research which can contribute to achieving sustainable and lucrative food systems. Recent developments have also highlighted the importance of secure food supplies. The aim of this research area is to generate new knowledge that can be used in the development of future foods and ingredients from grains or other plant-based raw materials. The scope of the research area extends through the entire chain from raw materials to consumption. If you have a project idea, we are open to discuss the possibility of using Lantmännen's raw materials, products and other resources, before you submit your application*.

Health benefits of cereals and legumes



Cereals and legumes are important components in Nordic diets. Health effects of a Nordic diet, as well as developing new knowledge that can support the development of good, healthy and innovative foods based on cereals or legumes, are included here.

Current research areas:

- Intake of products based on cereals and/or legumes as part of a healthy diet.
- The link between the effects of whole grains and individual components (such as dietary fibre) on the metabolic syndrome, blood sugar and insulin regulation, gut health and cognition. Where the effect of malting and fermentation is of particular interest.
- Sustainable nutrition. Focus on whole grains, public health and environmental aspects. For differentiation of the nutritional content of plant-based products as part of a healthy and sustainable diet.
- Precision nutrition, where foods are adapted to individuals or groups of individuals for optimal health effects.

Applications should, when relevant, take into account how the knowledge can be used to obtain future health claims. The Foundation does not finance research where children take part in the study.

Baking quality



Bread and other baked goods make up a large portion of our diets. In order to develop future foods and sustainable food systems, new knowledge about flour, baking chemistry and process is needed. This research area includes knowledge of raw materials, ingredients and processing techniques used to produce bread and other baked goods, with respect to taste, right texture and sustained shelf life.

Current research areas:

- The functionality and properties of the flour and its constituent components on baking properties and final product. Focus on the importance of gluten quality.
- The baking process. How the ingredients interact with each other during different process steps; dough formation, fermentation, baking and storage.
- Water distribution and redistribution in dough and bread during freezing, storage and thawing. How can this be controlled with processes and raw materials to maintain taste, volume and texture in the bread?
- Improved taste and texture in bread with a high content of whole grains and fibre. Focus on breads based on wheat, rye or oats.
- Use of sourdough and yeast cultures for better taste, texture and shelf life.
- New process technology solutions for improved product and storage quality, reduced waste, and improved energy utilisation.
- Packaging solutions for maintaining taste, texture and crispiness.

Ingredients of cereals and legumes in foods



The demand for different plant-based ingredients for new innovative foods is great. In order to cover the need, today's technology for the fractionation and further processing of cereals and legumes needs to be developed and made more efficient. Focus on protein, starch and fibre from oats, wheat, yellow peas and faba beans.

Current research areas:

- Fractionation of raw materials and upgrading of side streams and production waste for use as food ingredients.
- Knowledge about the structure and chemical composition, of both raw materials and generated fractions, and their correlation to functional properties (usability, taste, texture, nutritional content), as well as how these can be controlled using different process steps.
- Deeper understanding of starch, protein and fibre ingredients from grains and legumes in various food applications.
- New process methods for the production of attractive (taste, texture) products based on cereals and legumes.

Applications should, where relevant, include a description of scale-up and techno-economic analysis of the process methods used. The sustainability aspect of new processes should also be considered.

*Contact person: Annelie Moldin, annelie.moldin@lantmannen.com