

Call text – Bioenergy and green materials 2021

The encompassing goal is to support research which, by utilizing all of the potentials in the entire agricultural process chain, contributes to a more bio-based society. In addition to a strong focus on grains the raw material base also includes forages, pulses and oilseeds. The foundation's specific priorities for autumn 2021 are described below. If you have an idea for a project, we are eager to discuss choice of materials and processes before you file your application.



Bioenergy and biorefineries of the future

Energy and fuel components derived from environmentally smart and green sources are necessary to achieve a fossil free agriculture and society 2050. Our goal is to create a project portfolio with the aim of both improving existing and developing new energy products, preferentially using new raw materials and/or production processes.

Current key research areas:

- Renewable components* that can replace fossil based components in use today in e.g. alkylate petrol, more specifically renewable/green iso-octane/alkylate, isomerate, butane and naphtha.
- Renewable fuels for agricultural machinery that preferably can be used in today's diesel engines without modification.
- The novel use in upcoming, more advanced, biofuels from a wider base of agricultural commodities, such as forages.

* Currently it is important that these do not contain oxygen due to applicable technical standards.



Green materials and biochemicals

Lantmännen's biorefineries and mills produce a wide range of products and byproducts based on oats and wheat with a huge potential for developing fossil free materials and chemicals such as binders, oils, fuel components and packaging material.

Current key research areas:

- Next generation ester-based bio-oils for use in agriculture and forestry.
- Starch's potential as a base for green materials (e.g. bioplastics) and biobased chemicals.
- Renewable components for next-generation's chemicals and materials.
- Novel application areas for gluten, diverse fiber rich fractions such as wheat bran and oat husks, spent grains, biogenic carbon dioxide and bioethanol.



Increased value in product streams and side streams

Grains, straw, beans, peas and rapeseed contain components such as starch, protein, fiber, cellulose, hemicellulose, lignin and extractable substances, all of which offer potential to contribute to a bio-based society.

Current key research areas:

- Innovative areas of uses and applications for starch from wheat, oats and peas.
- Increased value and further processing of forages and catch crops.
- Knowledge regarding which specific factors in grains and peas that affect the yield in various industrial processes. One example is the gluten yield in wheat, where grain lots with similar analytical values can have very different results in gluten yield, and thereby the economy.
- Recovery and refinement of valuable components, for example via extraction, dewatering, modification or film formation. One key element here is to investigate purity and yield as well as the possibility of scaling up and how the process affects the characteristics of end products.