



CORE organic Cofund



New methods for producing high-quality local feed

ProRefine



Aim of the project:

Improvement of local food systems in organic farming based on fractionation of plant parts of forage legumes.

Main activities:

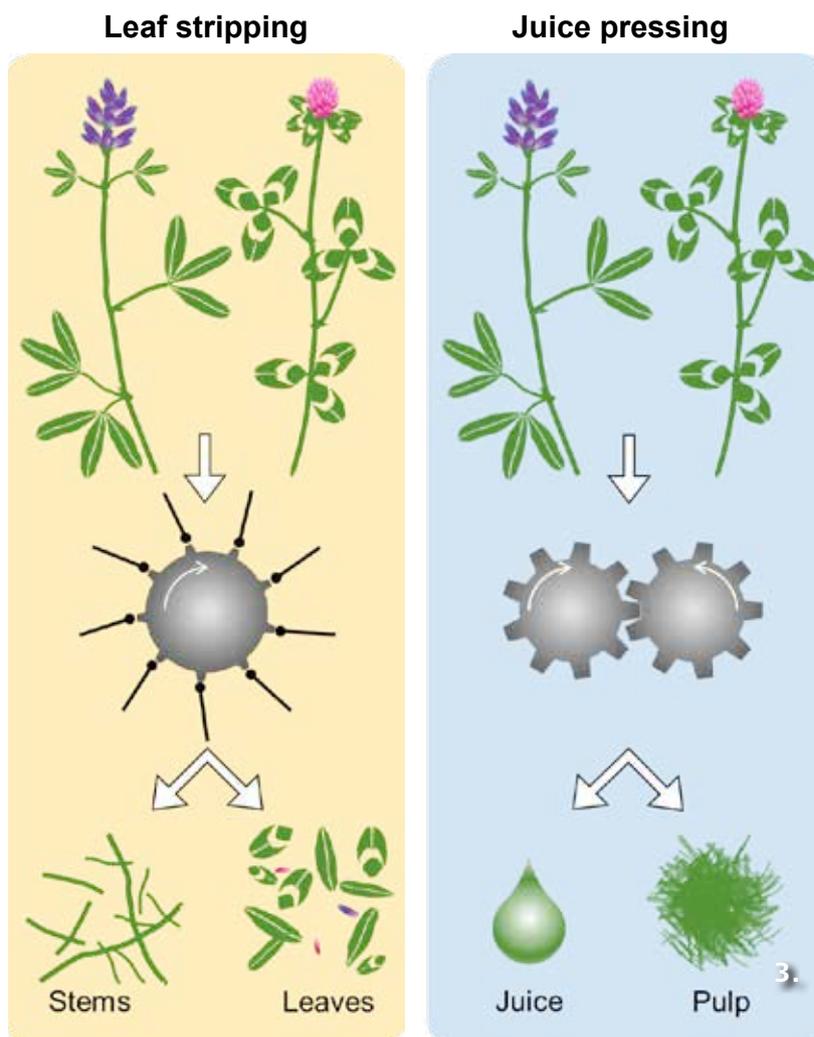
- ▶ Stakeholder group meetings in each country
- ▶ Development of models to predict protein supply from forage legumes
- ▶ Field trials of fractionation of lucerne and red clover in five regions
- ▶ Evaluation of nutritional value of forage legume fractions in growing pigs and ruminants
- ▶ Conceptualisation of local food systems based on forage legume fractionation
- ▶ Study of farmer attitudes towards self-sufficiency with feed
- ▶ Sustainability assessment including economic, social and environmental aspects

Background

Supply of feed protein is critical for animal production, and many farmers in Europe rely on imported protein supplements. Forage legumes efficiently utilise the growing season and produce high iomas and protein yields. Fractionation of the forage crops is necessary to make the protein available for monogastric animals, such as pigs and poultry, but there are various challenges that need to be addressed

Introduction

Lucerne and clovers are valuable feeds for dairy cows. New processing methods may allow to produce high quality feed from locally grown forages for both for ruminants, such as cattle and sheep, and monogastric animals, such as pigs and poultry.



The aim is to improve local food systems in organic farming based on fractionation of plant parts of forage legumes.

Developing methods to extract protein from forages could result in local feeds suitable for both ruminants and monogastric animals.

We will carry out research activities in six regions, Pays-de-la-Loire in France, the Po valley in Italy, the Aegean region in Turkey, central Denmark, Västerbotten in Sweden and mid-Norway.

Expected outputs

- ▶ Knowledge on how to maximise forage legume yields, with regard to crude protein content, leafiness and fibre digestibility under different climatic conditions
- ▶ Dry matter content, protein yields and fibre characteristics in fractions of forage legumes that have been separated by leaf stripping or juice pressing
- ▶ Possibilities to apply leaf stripper harvesters in mixed stands of lucerne or red clover with grass
- ▶ How to preserve forage legume fractions
- ▶ Knowledge on nutritional values and digestibility of forage legume fractions
- ▶ Economic, environmental and social sustainability of local food systems in the context of regional conditions
- ▶ Barriers identified for developing local value chains for organic animal products as identified by farmers and other stakeholders within industry and advisory services
- ▶ Knowledge on farmer attitudes towards self-sufficiency, their motivation to cooperate in new ways and ability to deal with risk management



Societal and long term benefits

The new knowledge gained will contribute to strengthen the agricultural sector in Europe as a whole, by improved utilisation of biological resources. Implementation of fractionating forage legumes may lead to new food products demanded by consumers supporting local food systems. New knowledge about local food systems can be transferred between countries and across sectors. This will increase the awareness of utilising local resources in food production.

How to reach target groups

Important target groups are farmers, advisory services, industry, government officials and the scientific community. A participatory approach will be applied by involving regional stakeholder groups.

Coordinator

Steffen Adler,
Norwegian Institute of Bioeconomy Research,
Norway
E-mail: steffen.adler@nibio.no

Partners

- Paolo Bani, Università Cattolica del Sacro Cuore, Italy
- Ülfet Erdal, International Agricultural Research and Training Center, Turkey
- Eric Juncker, TRUST'ING – ALF'ING, France
- Brit Logstein, Rurális - Institute for Rural and Regional Research, Norway
- David Parsons, Swedish University of Agricultural Sciences, Sweden
- David Renaudeau, Institut National de la Recherche Agronomique, France
- Søren Krogh Jensen, Aarhus University, Denmark



Further information

This transnational project is funded via the ERA-net CORE Organic Cofund based on funds from participating countries and funding from the European Union and Conseil Régional des Pays de la Loire.

CORE Organic Cofund is a collaboration between 26 partners in 19 countries/regions on initiating transnational research projects in the area of organic food and farming. CORE Organic Cofund has initiated 12 research projects. Read more at the CORE Organic Cofund website: <http://projects.au.dk/coreorganiccofund/>

Photo legend

1. Leaf stripper prototype. Photo: Eric Juncker, TRUST'ING – ALF'ING
2. Red clover (*Trifolium pratense* L.). Photo: Steffen Adler, NIBIO
3. Schematic illustration of fractionating leaves and stems or juice and pulp of lucerne or red clover. Figure: Steffen Adler, NIBIO
4. Forage pulp. Photo: Steffen Adler, NIBIO
5. Forage juice. Photo: Steffen Adler, NIBIO
6. Fractionation of juice and pulp using a table top press screw. Photo: Steffen Adler, NIBIO
7. Lucerne (*Medicago sativa* L.). Photo: Steffen Adler, NIBIO
8. The project team. Photo: Eric Juncker, TRUST'ING – ALF'ING