



Biorefining forage legumes for cows, pigs and poultry in organic farming

Aim and added value

The aim of the research project is to gain new knowledge about local production of protein feed for monogastric animals in organic farming, deriving from forage legumes.

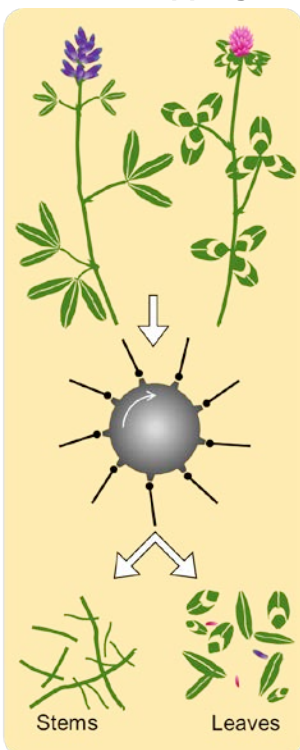
New knowledge will contribute to strengthen the agricultural sector in Europe as a whole, by improved utilisation of biological resources and competency on local food systems.

Mechanical fractionation

Two different machines will be used to separate protein-rich from fibre-rich material. A leaf stripper has a rotating tool that picks off the leaves before the stems are mowed. A double twin-gear

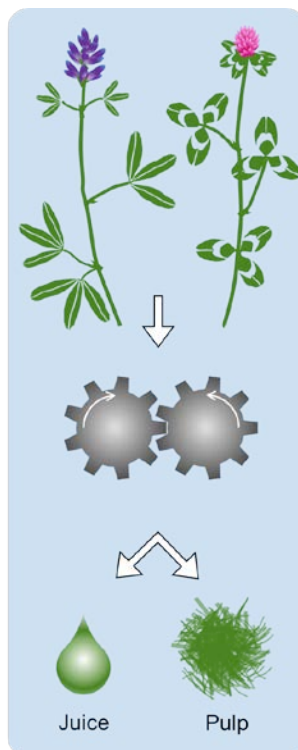
screw press squeezes plant juice out of the fresh crop and separates it from the pulp. Adequate preservation methods are necessary to conserve its nutritional value.

Leaf stripping



Leaves and pressed juice from lucerne (*Medicago sativa* L.) and red clover (*Trifolium pratense* L.) can be a protein

Juice pressing



source for monogastric animals such as pigs and poultry. Fibre-rich pulp and stems can be utilised by ruminants.

Leaf stripper harvesting lucerne



Photo: TRUST'ING – ALF'ING

Transnational project

The research project has a transnational and multidisciplinary approach, focusing on adaptation to regional characteristics across different nations. Testing of new technology is an integrated part of the work.

Field experiments with forage legumes will be established in different countries. Mathematical models will be developed to predict protein supply from forage legumes. We will evaluate the nutritional value of selected feed products in animal feeding experiments. Concepts of production systems based on local feed in organic farming will be developed.

The sustainability of such systems will be evaluated by considering social, economic and environmental aspects. In the assessment of social aspects we will interview regional stakeholder groups and organic farmers about their attitudes towards self-sufficiency and sustainability.

- WP1** Project management (NIBIO)
- WP2** Dissemination and industry engagement (SLU)
- WP3** Prediction of protein supply from forage legumes (SLU)
- WP4** Upgrading forage legume crops (AU)
- WP5** Feed evaluation and animal feeding
- WP6** Sustainability assessment of local food systems and farmer attitudes towards self-sufficiency (NIBIO)

Read more about ProRefine:



Refined forage legumes as local sources of protein feed for monogastrics and high quality fibre feed for ruminants in organic production

Duration: 2018-2021
 Total budget: 1.78 mill. €
 Six countries, seven institutes and one industry partner
 Coordination: NIBIO, Norway
 Funded by CORE Organic Cofund (ERA-NET)

Further information can be obtained from the project coordinator Steffen Adler (NIBIO)
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AU
 Aarhus University, Denmark

Ruralis
 Institute for Rural and Regional Research, Norway

NIBIO
 Norwegian Institute of Bioeconomy Research

SLU
 Swedish University of Agricultural Sciences

IARTC
 International Agricultural Research and Training Center, Turkey

