Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

EPOK – Centre for
organic food and farming

# Swedish research on organic food and farming 2008–2014

EPOK

EPOK – Centre for Organic Food and Farming at The Swedish University of Agricultural Sciences (SLU) works with communication and knowledge transfer as well as with collaboration of research and education on organic agriculture in a Swedish, Nordic and international perspective. EPOK coordinates and initiates research covering a wide range of research topics with relevance for organic farming.

**A Swedish Research Agenda for Organic Agriculture 2013**

A Swedish research agenda for organic agriculture was developed by EPOK in an open process together with stakeholders in the food chain, as well as in dialogue with researchers and research funding bodies. The main aim of the research agenda is to provide a firmly established document to facilitate research priorities. Another important aim is to guide and inspire researchers to address relevant problems and draw attention to areas where knowledge is lacking. The research agenda is operating from 2013 and can be downloaded from www.slu.se/epok


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# Introduction

Swedish research on organic farming is to a large extent funded by directed calls for research on organic food systems. The funders are the research council Formas, the Swedish Board of Agriculture and SLU EkoForsk at the Swedish University of Agricultural Sciences. Furthermore, the Swedish Farmers' Foundation for Agricultural Research (SLF) is funding research on organic farming within their ordinary research programs. In 2013 a special program for research on organic farming was launched, which was a joint call of SLF and Formas for the period 2014-2016. The Ekhaga foundation (www.ekhagastiftelsen.se) also support research mainly focused on organic food quality, but is not reported here.

Swedish research on organic farming is also funded by international funding bodies, e.g. the EU framework programs. Furthermore, several ERA-Net programs, mainly funded by national partners, are relevant for organic agricultural research. In this report only projects within the ERA-Net CORE Organic are included.

In this publication the funded research projects since 2008 are listed. From SLU EkoForsk and Formas (SLF/Formas) the three latest calls are listed. The Swedish Board of Agriculture does not have calls for longer periods. Projects that were granted funds 2014 are listed here.

Present and recent research activities cover a wide range of topics within organic crop and animal production as well as about food quality and marketing of organic products. Animal health and welfare issues in organic pig, poultry, dairy and meat production systems are high research priorities. Another important task is to optimise production and improve cultivation stability of protein feed crops, and also to find new feed protein sources. The potential for effective production based on high quality forage and grazing is one central research topic in dairy production.

Research on crop and animal breeding has become of increased interest to meet the need of specific traits and breeding goals in organic farming systems, as an important part of building robust farming systems.

Effective weed control, both direct weed regulation and preventive measures, not the least of perennial weed species is another research focus in both agricultural and horticultural cropping systems. Pest and disease control with biological and preventive methods is a strong research area. The potential for conservation biological control to decrease pests and diseases is of high interest together with related research on effects of organic farming on biological diversity and ecosystem services on landscape level. A number of research projects are conducted on how to achieve high nutrient use efficiency of organic fertilisers, manure as well as a wide range of rest-products from society. Timing of fertiliser nutrient release in relation to crop nutrient needs to avoid environmental harmful emissions is one challenge.

Most of the research is conducted to meet knowledge needs in agricultural primary production, but some projects deal with other parts of the food system e.g. analysing organic markets and how to secure organic values throughout the food chain.

# Funders

## SLU EkoForsk

The Swedish University of Agricultural Sciences (SLU) coordinates a programme for research projects within organic agriculture and horticulture called SLU EkoForsk.

The aim is to improve the knowledge base for the development of crop cultivation, animal husbandry and the production of fruit, berries and vegetables. Projects should contribute to the development of a sustainable production in terms of environmental concerns, animal welfare, resource management, income level and productivity.

EkoForsk funded 45 projects from 2008–2016

## Formas

The Formas programme for organic agriculture research may cover different parts of the food chain from primary production in agriculture and horticulture to the processing and marketing of organic food. Research of an interdisciplinary nature is encouraged. The research Formas finances should be of high relevance for current organic production and food systems. A new four-year organic research program will start in 2015.

Formas funded 26 projects from 2008–2013 and 6 new projects 2014-2016 in the joint SLF/Formas program, see below.

## Swedish Farmers' Foundation for Agricultural Research (SLF)

The Swedish Farmers' Foundation for Agricultural Research (SLF) is normally funding research on organic farming within their ordinary research programs. However, in 2013 a special program for research on organic farming was launched, which was a joint call of SLF and Formas for the period 2014-2016.

Fifteen projects from 2014-2016 are funded, 6 projects within the directed SLF/Formas program and 9 projects within the ordinary SLF research programs

## The Swedish Board of Agriculture

The Swedish Board of Agriculture funds research and development projects aiming at strengthen applied knowledge in animal health, animal husbandry, horticulture and crop management within organic agriculture.

The Swedish Board of Agriculture funded 8 ongoing and 6 new projects in the year of 2014

## CORE Organic

CORE Organic is a European transnational research cooperation project, which is part of the ERA-Net Scheme supported by the European Commission (www.coreorganic2.org). CORE Organic has been run for three-year periods and is coordinated by The International Centre for Research in Organic Food Systems (ICROFS). The first two programs, 2008-2010 and 2011-2013 are included in this report. Formas is the Swedish partner in CORE Organic. A new program will start in 2015, CORE Organic Plus. The aim of CORE Organic is to enhance the quality, relevance and utilisation of resources in European research in organic food and farming through coordination and collaboration.

A number of 8 and 14 projects have been funded by the CORE Organic program I and II respectively, with Swedish partners in three (CO I) and six projects (CO II)

## Current funding of research on organic agriculture in Sweden [million SEK]**

| Year | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|
| Formas (incl CORE Organic) | 23 | 23 | 23 | - |
| SLF/Formas | * | * | * | 10 |
| SLU Ekoforsk | 7 | 7 | 7 | 7 |
| Jordbruksverket | * | * | * | 6 |
| **Sum** | **≈35** | **≈31** | **≈31** | **≈23** |

* Not investigated

** In 2015 a new national Formas organic program will start as well as a new CORE Organic program of wich Sweden is partner.

# Projects

## SLU EkoForsk 2014–2016

*All project leaders are based at the Swedish University of Agricultural Science.*

*Ecology and plant protection of organic cropping systems, turnover and recycling of plant nutrients*

**Northern highbush blueberries – crop management in high tunnel and in the open field with emphasis on substrate and nutrients**
Grant (SEK): 1 200 000
Håkan Asp, Department of Biosystems and Technology, Hakan.Asp@slu.se

**Tomato – combined biological control with microorganisms and biofumigation**
Grant (SEK): 2 498 000
Hanna Friberg, Department of Forest Mycology and Pathology/Centre for Biological Control, Hanna.Friberg@slu.se

**Apples – application of ARs for protection against storage diseases**
Grant (SEK):1 624 000
Hilde Nybom, Plant Breeding and Biotechnology, Hilde.Nybom@slu.se

**Cut fallow to replace black fallow – effect on couch grass**
Grant (SEK): 1 092 000
Göran Bergkvist, Department of Crop production Ecology, Goran.Bergkvist@slu.se

**Potatoes – development of new hybridization material for improved resistance to late blight**
Grant (SEK): 1 069 000
Ulrika Carlson-Nilsson, Plant Breeding, Ulrika.Carlson@slu.se

**Pelleted fertilizer – optimal placement with regard to nitrogen use effeciency, weeds and grain yields**
Grant (SEK): 1 680 000
Sofia Delin, Soil and Environment, Sofia.Delin@slu.se

**Functional botanical diversity – a path to robust cropping systems with aphids in focus**
Grant( SEK): 600 000
Velemir Ninkovic, Ecology, Velemir.Ninkovic@slu.se

**Fusarium in oats and spring wheat – variety and species mixtures for healthy crops with high quality**
Grant (SEK): 1 664 600
Paula Persson, Crop Production Ecology, Paula.Persson@slu.se

*Optimization of animal production systems*

**Dairy cows – Automatic foot spray disinfecting with environmental-friendly hypochlorous acid as alternative to traditional foot bath with polluting copper sulphate or antibiotics**
Grant (SEK): 899 100
Christer Bergsten, Biosystems and Technology, Christer.Bergsten@slu.se

**Livestock on pasture – automatic weighing as an animal health monitoring tool**
Grant (SEK): 1 666 200
Katarina Arvidsson, Animal Environment and Health, Katarina.Arvidsson@slu.se

**Total mixed ration for dairy cows – an economic feeding strategy for organic farmers with automatic milking?**
Grant (SEK): 2 231 000
Eva Spörndly, Animal Nutrition and Management, Eva.Sporndly@slu.se

**Lamb production – animal welfare through breeding**
Grant (SEK): 578 000
Anna Näsholm, Animal Breeding and Genetics, Anna.Nasholm@slu.se

**Deep litter for sheep – plant nutrient value and comparison of straw and reed canary grass as bedding materials**
Grant (SEK): 2 129 700
Cecilia Palmborg, Agricultural Research for Northern Sweden, Cecilia.Palmborg@slu.se

**Piglet production – development of an organic production system where batch-wise group weaning is made possible by exploring the natural physiology of the sow**
Grant (SEK): 656 000
Ylva Sjunnesson, Clinical Sciences, Ylva.Sjunnesson@slu.se

## SLU EkoForsk 2011–2013

*All project leaders are based at the Swedish University of Agricultural Science.*

*Ecology and plant protection of organic cropping systems, turnover and recycling of plant nutrients*

**Apple production – protection against storage diseases**
Grant (SEK): 1 370 100
Hilde Nybom, Plant Breeding and Biotechnology, Hilde.Nybom@slu.se

**Cereal cultivars – locally adapted for quality in production and product**
Grant (SEK): 1 690 000
Eva Johansson, Agriculture – Farming systems, Technology and Product quality, Eva.Johansson@slu.se

**Clover seed production – development of odor-based strategies to control seed-eating weevils**
Grant (SEK): 1 490 000
Åsa Lankinen, Plant Protection Biology, Asa.Lankinen@slu.se

**Couch grass – optimal timing of stubble cultivation and cutting of a grass/clover catch crop**
Grant (SEK): 822 000
Lars Andersson, Crop Production Ecology, Lars.Andersson@slu.se

**Faba bean – yield stability in varietal mixtures**
Grant (SEK): 1 000 000
Georg Carlsson, Agriculture – Farming systems, Technology and Product quality, Georg.Carlsson@slu.se

**Northern Highbush Blueberries – Organic Production Systems**
Grant (SEK): 1 474 000
Håkan Asp, Horticulture, Hakan.Asp@slu.se

**Tomato Production – Balanced Fertilisation**
Grant (SEK): 1 200 000
Birgitta Båth, Department of Crop Production Ecology, Birgitta.Bath@slu.se

**Vegetables – improved weed control effect through prolonged germination period combined with false seedbed and delayed sowing**
Grant (SEK): 2 070 000
David Hansson, Agriculture – Farming Systems, Technology and Product Quality, David.Hansson@slu.se

**The weed mower - mowing of Cirsium arvense and Tripleurospermum inodorum in winter wheat and leys for seed production**
Grant (SEK): 1 498 400
Anneli Lundkvist, Crop Production Ecology, Anneli.Lundkvist@slu.se

*Optimization of animal production systems*
**Erysipelas – why are organic laying hen flocks affected**
Grant (SEK): 140 000
Claes Fellström, Clinical Sciences, Claes.Fellstrom@slu.se

**Milk from cereals and high quality herbage only**
Grant (SEK): 754 000
Eva Spörndly, Animal Nutrition and Management, Eva.Sporndly@slu.se

**Milk production – optimization of protein feeding in relation to economy and environment**
Grant (SEK): 2 625 000
Pekka Huhtanen, Agricultural Research for Northen Sweden, Pekka.Huhtanen@slu.se

**Mussel meal fed to slow- and fast growing broilers**
Grant (SEK): 752 400
Lotta Jönsson, Animal Nutrition and Management, Lotta.Jonsson@slu.se

**Pig production – does leg health in growing finishing pigs improve by change of sire breed?**
Grant (SEK): 1 137 000
Anna Wallenbeck, Animal Breeding and Genetics, Anna.Wallenbeck@slu.se

**Roundworm infection – pathways on organic laying hen farms**
Grant (SEK): 1 094 000
Johan Höglund, Biomedical Sciences and Veterinary Public Health, Johan.Hoglund@slu.se

## SLU EkoForsk 2008–2010

*All project leaders are based at the Swedish University of Agricultural Science.*

*Ecology and plant protection of organic cropping systems, turnover and recycling of plant nutrients*

**Biological control – utilization selective biodiversity and targeted crop rotation**
Grant (SEK): 330 000
Birgitta Rämert, Plant Protection Biology, Birgitta.Ramert@slu.se

**Oilseed rape – nitrogen management strategies**
Grant (SEK): 1 758 463
Maria Stenberg, Soil Sciences, Maria.Stenberg@slu.se

**Oilseed radish and mustard – disease saniters with great potential**
Grant (SEK): 1 921 200
Paula Persson, Crop Production Ecology, Paula.Persson@slu.se

**Orchards – new weed control methods**
Grant (SEK): 1 649 000
David Hansson, Agriculture – Farming systems, Technology and Product quality, David.Hansson@slu.se

**Organic apples – improving quality and storability**
Grant (SEK): 762 100
Ibrahim Tahir, Plant breeding and Biotechnology, Ibrahim.Tahir@slu.se

**Peas – effects of *Brassica* intercrops**
Grant (SEK): 2 511 000
Kerstin Berglund, Soil Sciences, Kerstin.Berglund@slu.se

**Potato production – faster emergence and earlier tuber development**
Grant (SEK): 1 622 000
Jannie Hagman, Crop Production Ecology, Jannie.Hagman@slu.se

**Thistle mower – an evaluation of a vegetation cutter**
Grant (SEK): 1 094 500
Anneli Lundkvist, Crop Production Ecology, Anneli.Lundkvist@slu.se

**Tomatoes – nitrogen and phosphorous availability**
Grant (SEK): 1 390 000
Birgitta Båth, Crop Production Ecology, Birgitta.Bath@slu.se

**Tussilago farfara – weed management**
Grant (SEK): 1 133 000
Lars Andersson, Crop Production Ecology, Lars.Andersson@slu.se

*Optimization of animal production systems*
**Finishing pigs – lower nitrogen losses and improved hygiene of the outside concrete area**
Grant (SEK): 1 245 700
Jos Botermans, Rural Buildings and Animal Husbandry, Jozef.Botermans@slu.se

**Dairy and beef – improved nutritional value in forage**
Grant (SEK): 1 800 000
Rolf Spörndly, Department of Animal Nutrition and Management, Rolf.Sporndly@slu.se

**Ley seed production – development by participatory learning**
Grant (SEK): 799 000
Johanna Björklund, Urban and Rural Development, Johanna.Bjorklund@slu.se

**Maize – weed management**
Grant (SEK): 1 985 420
Ewa Magnuski, Crop Production Ecology, Ewa.Magnuski@slu.se

**Milk production based on herbage and cereal feeding – effects on milk and methane production**
Grant (SEK): 1 240 000
Eva Spörndly, Animal Nutrition and Management, Eva.Sporndly@slu.se

**White and red clover seed – increased biodiversity improves pollination**
Grant (SEK): 1 662 000
Lars Andersson, Crop Production Ecology, Lars.Andersson@slu.se

## Formas: Organic Production 2011–2013

**Effects of land use change on multifunctionality in agroecosystems: Biodiversity and ecosystem services after transition to organic production**
Grant (SEK): 9 486 000
Jan Bengtsson, Swedish University of Agricultural Sciences, Ecology, Jan.Bengtsson@slu.se

**Actor Based Life Cycle Assessment – towards green food chains for eco-products**
Grant (SEK): 2 532 000
Birgit Brunklaus, Chalmers University of Technology, Energy and Environment, birgitb@chalmers.se

**Effects of fertilisation through nutrient recycling on soil biological functions and plant nutrient uptake and growth in organic crop production**
Grant (SEK): 3 602 000
Sigrun Dahlin, Swedish University of Agricultural Sciences, Soil and Environment, Sigrun.Dahlin@slu.se

**Risk factors responsible for development of leg weakness in pigs housed in outdoor organic systems. Studies aimed at clarifying the pathogenesis behind the joint lesions, and find preventive tools**
Grant (SEK): 2 852 000
Stina Ekman, Swedish University of Agricultural Sciences, Biomedical Sciences and Veterinary Public Health, Stina.Ekman@slu.se

**Viral infections in organic dairy herds – risks, biosecurity and resiliency**
Grant SEK): 3 150 000
Nils Fall, Swedish University of Agricultural Sciences, Clinical Sciences, Nils.Fall@slu.se

**FISHWELFARE – Identification of key aspects for ecologically sustainable fish aquaculture under Swedish conditions**
Grant (SEK): 905 000
Björn Frostell, KTH Royal Institute of Technology, Industrial Ecology, Frostell@kth.se

**The importance of natural enemy diversity and food-web structure for biological control at organic and conventional farms**
Grant (SEK): 4 264 000
Mattias Jonsson, Swedish University of Agricultural Sciences, Ecology, Mattias.Jonsson@slu.se

**Reproduction: the bottleneck in organic pig production – is there a biological management solution?**
Grant (SEK): 3 336 000
Ulf Magnusson, Swedish University of Agricultural Sciences, Chlinical Sciences, Ulf.Magnusson@slu.se

**Cereal leaf microflora in different agricutural producton systems – implication for biological control of *Fusarium***
Grant (SEK): 3 765 000
Paula Persson, Swedish University of Agricultural Sciences, Crop Production Ecology, Paula.Persson@slu.se

**Development of pest management strategies in organic apple production in collaboration with farmers utilizing complementary biological control strategies**
Grant (SEK): 6 190 000
Birgitta Rämert, Swedish University of Agricultural Sciences, Crop Production Ecology, Birgitta.Ramert@slu.se

**The role of *Paenibacillus polymyxa* biofilm formation in protection of nursery plantlets against *Pythium* root rot**
Grant (SEK): 1 853 000
Salme Timmusk, Swedish University of Agricultural Sciences, Forest Mycology and Plant Pathology, Salme.Timmusk@slu.se

**Breeding strategies for organic animal husbandry**
Grant (SEK): 2 605 000
Anna Wallenbeck, Swedish University of Agricultural Sciences, Animals Breeding and Genetics, Anna.Wallenbeck@slu.se

**Sustainable livestock management with respect to animal transports and production systems: animal welfare and spread of disease**
Grant (SEK): 3 313 000
Uno Wennergren, Linköping University, Physics, Chemistry and Biology, unwen@ifm.liu.se

## Formas: Organic Production 2008–2010

**Dormancy in reproductive vegetative buds in creeping perennials dominating the agricultural weed flora in Scandinavica**
Grant (SEK): 3 301 000
Lars Adersson, Swedish University of Agricultural Sciences, Crop Production Ecology, Lars.Andersson@slu.se

**Biodiversity and ecosystem services after transitions to organic production**
Grant (SEK): 4 575 000
Jan Bengtsson, Swedish University of Agricultural Sciences, Ecology, Jan.Bengtsson@slu.se

**Pollination and pest control in organic clover seed production – effect of field and landscape diversification**
Grant (SEK): 2 925 000
Riccardo Bommarco, Swedish University of Agricultural Sciences, Ecology, Riccardo.Bommarco@slu.se

**Predation rate and prey choice by generalist predators on organic farms**
Grant (SEK): 2 321 000
Barbara Ekbom, Swedish University of Agricultural Sciences, Ecology, Barbara.Ekbom@slu.se

**Exploiting soil microbial activity to enhance nutrient acquisition and sustainable pathogen control**
Grant (SEK): 2 574 000
Roger Finlay, Swedish University of Agricultural Sciences, Forest Mycology and Plant Pathology, Roger.Finlay@slu.se

**The green farm – an organic farm self-supplying with energy from renewable sources**
Grant (SEK): 3 030 000
Per-Anders Hansson, Swedish University of Agricultural Sciences, Energy and Technology, Per-Anders.Hansson@slu.se

**Phosphorus feeding in organic dairy production**
Grant (SEK): 708 000
Kjell Holtenius, Swedish University of Agricultural Sciences, Animal Nutrition and Management, Kjell.Holtenius@slu.se

**Cropping systems in Organic Vegetable Production: The Behavioural and Chemical Basis of Ecological Processes in *Brassica* Crops**
Grant (SEK): 4 045 000
Richard Hopkins, Swedish University of Agricultural Sciences, Ecology, Richard.Hopkins@slu.se

**Endophytic fungi in forage grasses**
Grant (SEK): 2 310 000
Kerstin Huss-Danell, Swedish University of Agricultural Sciences, Agricultural Research for Northern Sweden, Kerstin.Huss-Danell@slu.se

**Parasite Management in Organic Cattle**
Grant (SEK): 3 474 000
Johan Höglund, Swedish University of Agricultural Sciences, Biomedical Sciences and Veterinary Public Health, Johan.Hoglund@slu.se

**Supplying organic farming with plant nutrients – resource and environmental aspects in a life cycle perspective**
Grant (SEK): 3 405 000
Håkan Jönsson, Swedish University of Agricultural Sciences, Energy and Technology, Hakan.Jonsson@slu.se

**Biological Pest Management in Oilseed Rape for Organic Oil Production**
Grant (SEK): 6 245 000
Johan Meijer, Swedish University of Agricultural Sciences, Plant Biology & Forest Genetics, Johan.Meijer@slu.se

**Utilization of synergies between enhanced biological control through selective biodiversity and targeted crop rotation**
Grant (SEK): 3 890 000
Birgitta Rämert, Swedish University of Agricultural Sciences, Crop Production Ecology, Birgitta.Ramert@slu.se

**The role of *Paenibacillus polymyxa* biofilm formation in protection of nursery plantlets against *Pythium* root rot**
Grant (SEK): 1 853 000
Salme Timmusk, Swedish University of Agricultural Sciences, Forest Mycology and Plant Pathology, Salme.Timmusk@slu.se

**Hempseed (*Cannabis sativa*) as a nutritional resource in organic poultry production**
Grant (SEK): 1 750 000
Helena Wall, Swedish University of Agricultural Sciences, Animal Nutrition and Management, Helena.Wall@slu.se

**Micronutrient management strategies in organic systems: How to utilize local and site specific resources for sustainable crop and animal production of high quality products?**
Grant (SEK): 7 995 000
Ingrid Öborn, Swedish University of Agricultural Sciences, Soil Science, Ingrid.Oborn@slu.se

## The Swedish Farmers' Foundation for Agricultural Research 2014–2016

*(project titles are translated by editor, not confirmed by project leader)*

*Broiler chicken*

**Sustainable production systems for organic chicken meat – Effect of breeding material and production environment on productivity, animal welfare and environmental impact**
Grant (SEK): 1 650 000
Anna Wallenbeck, Swedish University of Agricultural Science, Animal Breeding and Genetics, Anna.Wallenbeck@slu.se

**Mapping the intestinal health of organic chicken and efficacy of vaccination against coccidiosis**
Grant (SEK): 847 000
Désirée Jansson, National Veterinary Institute, Desiree.Jansson@sva.se

*Dairy*

**Producing milk with forage and grain only – an organic model that could be economically viable, but does all cows fit?**
Grant (SEK): 2 595 000
Rolf Spörndly, Swedish University of Agricultural Science, Department of Animal Nutrition and Management, Rolf.Sporndly@slu.se

*Meat*

**Field beans to pork in conventional and organic production – properties and usability of different varieties**
Grant (SEK): 1 935 000
Maria Neil, Swedish University of Agricultural Science, Maria.Neil@slu.se

**New method for determining virulence of footrot bacteria in sheep**
Grant (SEK): 995 000
Erik Eriksson, National Veterinary Institute, Erik.Eriksson@sva.se

*Potatoes*

**Development of late blight resistant potatoe varieties for the whole of Sweden**
Grant (SEK): 2 000 000
Ulrika Carlson-Nilsson, Swedish University of Agricultural Sciences, Plant Breeding, Ulrika.Carlson@slu.se

*Horticulture*

**Development of control strategy against storage diseases in organic apples and pears, a collaborative project**
Grant (SEK): 1 920 000
Marie Olsson, Swedish University of Agricultural Science, Plant Breeding, Marie.Olsson@slu.se

**Control strategies with mini fallow and interval crops against black and green nightshade in an organic crop rotation with potato, carrot and onion**
Grant (SEK): 1 980 000
David Hansson, Swedish University of Agricultural Science, Biosystems and Technology, David.Hansson@slu.se

**Application technique with a focus on biological plant protection**
Grant (SEK): 1 984 000
Klara Löfkvist, JTI – Swedish Institute of Agricultural and Environmental Engineering, Klara.Lofkvist@jti.se

*Crop production*
**Variety mixing – a robust cropping system**
Grant (SEK): 2 400 000
Velemir Ninkovic, Swedish University of Agricultural Science, Ecology, Velemir.Ninkovic@slu.se

**Breeding of pea for increased resistance to root rot**
Grant (SEK): 1 250 000
Magnus Karlsson, Swedish University of Agricultural Science, Forest Mycology and Plant Pathology, Magnus.Karlsson@slu.se

**Effective utilization of slurry and digestate – Online analysis of manure quality that enables balanced fertilization**
Grant (SEK): 1 071 000
Bo Stenberg, Swedish University of Agricultural Science, Soil and Environment, Bo.Stenberg@slu.se

**Control of insect pests in clover seed crops with biological methods**
Grant (SEK): 1 766 000
Olle Anderbrandt, Lunds universitet, Biology, Olle.Anderbrant@biol.lu.se

**Increased harvest and crop safety with optimized distribution of seeds in the row at sowing on 25 cm row spacing**
Grant (SEK): 1 297 000
Per Ståhl, Hushållningssällskapet Östergötland, Per.Stahl@hushallningssallskapet.se

*Business*
**”You don’t get anything for nothing”- how can ecosystem services be included in the farm’s sustainability work?**
Grant (SEK): 1 999 000
Christel Cederberg, SIK – the Swedish Institute for Food and Biotechnology, Christel.Cederberg@sik.se

## The Swedish Board of Agriculture: Increased organic production – including improved animal health. Ongoing and new projects 2014

*(project titles are translated by editor, not confirmed by project leader)*

**Nitrogen effect of organic fertilizers for spring and winter cereals**
Grant (SEK): 1 857 000 (2012–2014)
Sofia Delin, Swedish University of Agricultural Science, Soil and Environment, Sofia.Delin@slu.se

**Strategy for safe organic tomato production – combined disease control by fertilizer, biofumigering and biological control**
Grant (SEK): 690 000 (2014–)
Anna Mårtensson, Swedish University of Agricultural Science, Soil and Environment, Anna.Martensson@slu.se

**Mini fallow and interval crops – a new strategy against black and green nightshade and free-living nematodes in an organic crop rotation with potato, carrot and onion**
Grant (SEK): 153 000 (2014–)
David Hansson, Swedish University of Agricultural Science, Biosystems and Technology, David.Hansson@slu.se

*Animal husbandry*
**Improved protein quality of local feed materials by heat treatment**
Grant (SEK): 1 467 000 (2012–2014)
Mårten Hetta, Swedish University of Agricultural Science, Agricultural Research for Northern Sweden, Marten.Hetta@slu.se

*Horticulture*
**Plant protection in organic raspberry cultivation during extended season**
Grant (SEK): 592 000 (2012–2014)
Birgitta Svensson, Swedish University of Agricultural Science, Biosystems and Technology, Birgitta.Svensson@slu.se

**Weed control in the early establishment of row-vegetables in organic farming**
Grant (SEK): 1 759 600 (2012–2014)
David Hansson, Swedish University of Agricultural Science, Biosystems and Technology, David.Hansson@slu.se

*Crop production*
**Autumn fertilization in organic timothy seed ley**
Grant (SEK): 1 077 216 (2012–2014)
Eva Stoltz, Swedish Rural Economy and Agricultural Societies, Eva.Stoltz@hushallningssallskapet.se

**Optimal utilization of nitrogen in the use of organic special fertilizer to winter wheat**
Grant (SEK): 395 050 (2012–2014)
Henrik Nätterlund, Swedish Rural Economy and Agricultural Societies,
henrik.natterlund@hushallningssallskapet.se

*Nontoxic environment*

**Propagation methods for biological control organisms in field crops**
Grant (SEK): 290 000 (2014–)
Klara Löfkvist, JTI – Swedish Institute of Agricultural and Environmental Engineering,
klara.lofkvist@jti.se

**Biological measures for the control of root diseases of strawberry**
Grant (SEK): 470 000 (2014–)
Sammar Khalil, Swedish University of Agricultural Science, Biosystems and Technology,
Sammar.Khalil@slu.se

**Biological control of *Acrothecium*-rot in carrots**
Grant (SEK): 1 435 000 (2012–2014)
Margareta Hökeberg, Swedish University of Agricultural Science, Forest Mycology and Plant Pathology, Margareta.Hokeberg@slu.se

**Control of black grass (*Alopecurus myosuroides Huds.*) through various integrated cultivation measures**
Grant (SEK): 1 001 200 (2012–2014)
Anders TS Nilsson, Swedish University of Agricultural Science, Biosystems and Technology,
Anders.TS.Nilsson@slu.se

**Which barley cultivar mixtures should be grown?**
Grant (SEK): 200 000 (2014–)
Velemir Ninkovic, Swedish University of Agricultural Science, Ecology,
Velemir.Ninkovic@slu.se

**EKOKALK: Structure liming for improved soil structure and reduced phosphorus losses in organic farming**
Grant (SEK): 485 000 (2014–)
Kerstin Berglund, Swedish University of Agricultural Science, Soil Sciences,
Kerstin.Berglund@slu.se

## Core Organic II, 2010–2013 – Projects with Swedish Researchers

**COBRA: Coordinating Organic plant Breeding Activities for Diversity**
Coordinator: Principal Researcher Dr Thomas Döring, The Organic Research Centre, United Kingdom.

**Healthy Growth: From niche to volume with integrity and trust**
Coordinator: Associate Professor Egon Noe, Agroecology, Aarhus University, Denmark.

**Softpest multitrap: Management of strawberry blossom weevil and European tarnished plant bug in organic strawberry and raspberry using semiochemical traps**
Coordinator: Research Director PhD Atle Wibe, Bioforsk – Organic Food and Farming Division, Norway.

**HealthyHens: Promoting good health and welfare in European organic laying hens**
Coordinator: Head of department Prof. Dr. Ute Knierim, Department of Farm Animal Behaviour and Husbandry, Faculty of Organic Agricultural Sciences, University of Kassel, Germany.

**ICOPP: Improved contribution of local feed to support 100 % organic feed supply to pigs and poultry**
Coordinator: Head of research unit John E. Hermansen, Dep. of Agroecology and Environment, Faculty of Agricultural Sciences, University of Aarhus, Denmark.

**SafeOrganic: Restrictive use of antibiotics in organic animal farming – a potential for safer, high quality products with less antibiotic resistant bacteria**
Coordinator: PhD, Research Leader Søren Aabo, Technical University of Denmark, National Food Institute, Denmark.

## Core Organic I, 2008–2010 – Projects with Swedish Researchers

**COREPIG: A tool to prevent diseases and parasites in organic pig herds**
Coordinator: Tine Rousing Nielsen, University of Aarhus, Faculty of Agricultural Sciences, Dept. of Animal Health, Welfare and Nutrition.

**PHYTOMILK: What makes organic milk healthy?**
Coordinator: Anne-Maj Gustavsson, Swedish University of Agricultural Sciences, Agricultural Research for Northen Sweden.

**PathOrganic: Assessing and reducing risks of pathogen contamination in vegetables**
Coordinator: Doz. Dr. Angela Sessitsch, AIT Austrian Institute of Technology GmbH, Bioresources Unit.