INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI 2005–2010

RC-Specific Evaluation of SSA – Science of Sustainable Agriculture

Seppo Saari & Antti Moilanen (Eds.)
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**Title:** International Evaluation of Research and Doctoral Training at the University of Helsinki 2005–2010 : RC-Specific Evaluation of SSA – Science of Sustainable Agriculture

**Summary:** Researcher Community (RC) was a new concept of the participating unit in the evaluation. Participation in the evaluation was voluntary and the RCs had to choose one of the five characteristic categories to participate.

Evaluation of the Researcher Community was based on the answers to the evaluation questions. In addition a list of publications and other activities were provided by the TUHAT system. The CWTS/Leiden University conducted analyses for 80 RCs and the Helsinki University Library for 66 RCs. Panellists, 49 and two special experts in five panels evaluated all the evaluation material as a whole and discussed the feedback for RC-specific reports in the panel meetings in Helsinki. The main part of this report is consisted of the feedback which is published as such in the report.

Chapters in the report:
1. Background for the evaluation
2. Evaluation feedback for the Researcher Community
3. List of publications
4. List of activities
5. Bibliometric analyses

The level of the RCs’ success can be concluded from the written feedback together with the numeric evaluation of four evaluation questions and the category fitness. More conclusions of the success can be drawn based on the University-level report.

**RC-specific information:**

<table>
<thead>
<tr>
<th>Main scientific field of research:</th>
<th>RC-specific keywords:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological, Agricultural and Veterinary Sciences</td>
<td>acid sulphate soils, agricultural entomology, agricultural technology, agri-environment schemes, agroecology, agroecosystems, agronomy, animal breeding, animal nutrition, animal physiology, animal product quality, animal welfare, berry crops, biodiversity, bioenergy, biofortification, biophysical modelling, bioremediation, carbon sequestration, cereals, climate change, crop breeding, crop nutrition, crop physiology, crop protection, crop quality, crop science, dairy cattle, ecosystem function, erosion, farmland wildlife, feed chain, feed preservation, field crops, flowering, food chain, forage crops, forage grasses, functional diversity, greenhouse gases, horticulture, leaching, legumes, life cycle analysis, monogastrics, nitrogen cycle, nutrient cycling, nutrient management, oilseeds, organic agriculture, organic fertilizers, phosphorus, robotics, ruminants</td>
</tr>
</tbody>
</table>

| Participation category: | | |
|------------------------|--------------------------|
| 2. Research of the participating community is of high quality, but the community in its present composition has yet to achieve strong international recognition or a clear breakthrough | |

| RC’s responsible person: | |
|-------------------------| |
| Stoddard, Frederick | |

**Keywords:** Research Evaluation, Meta-evaluation, Doctoral Training, Bibliometric Analyses, Researcher Community
Foreword

The evaluation of research and doctoral training is being carried out in the years 2010–2012 and will end in 2012. The steering group appointed by the Rector in January 2010 set the conditions for participating in the evaluation and prepared the Terms of Reference to present the evaluation procedure and criteria. The publications and other scientific activities included in the evaluation covered the years 2005–2010.

The participating unit in the evaluation was defined as a Researcher Community (RC). To obtain a critical mass with university-level impact, the number of members was set to range from 20 to 120. The RCs were required to contain researchers in all stages of their research career, from doctoral students to principal investigators (PIs). All in all, 136 Researcher Communities participated in this voluntary evaluation, 5857 persons in total, of whom 1131 were principal investigators. PIs were allowed to participate in two communities in certain cases, and 72 of them used this opportunity and participated in two RCs.

This evaluation enabled researchers to define RCs from the “bottom up” and across disciplines. The aim of the evaluation was not to assess individual performance but a community with shared aims and researcher-training activities. The RCs were able to choose among five different categories that characterised the status and main aims of their research. The steering group considered the process of applying to participate in the evaluation to be important, which lead to the establishment of these categories. In addition, providing a service for the RCs to enable them to benchmark their research at the global level was a main goal of the evaluation.

The data for the evaluation consisted of the RCs’ answers to evaluation questions on supplied e-forms and a compilation extracted from the TUHAT – Research Information System (RIS) on 12 April 2011. The compilation covered scientific and other publications as well as certain areas of scientific activities. During the process, the RCs were asked to check the list of publications and other scientific activities and make corrections if needed. These TUHAT compilations are public and available on the evaluation project sites of each RC in the TUHAT-RIS.

In addition to the e-form and TUHAT compilation, University of Leiden (CWTS) carried out bibliometric analyses from the articles included in the Web of Science (WoS). This was done on University and RC levels. In cases where the publication forums of the RC were clearly not represented by the WoS data, the Library of the University of Helsinki conducted a separate analysis of the publications. This was done for 66 RCs representing the humanities and social sciences.

The evaluation office also carried out an enquiry targeted to the supervisors and PhD candidates about the organisation of doctoral studies at the University of Helsinki. This and other documents describing the University and the Finnish higher education system were provided to the panellists.

The panel feedback for each RC is unique and presented as an entity. The first collective evaluation reports available for the whole panel were prepared in July–August 2011. The reports were accessible to all panel members via the electronic evaluation platform in August. Scoring from 1 to 5 was used to complement written feedback in association with evaluation questions 1–4 (scientific focus and quality, doctoral training, societal impact, cooperation) and in addition to the category evaluating the fitness for participation in the evaluation. Panellists used the international level as a point of comparison in the evaluation. Scoring was not expected to go along with a preset deviation.

Each of the draft reports were discussed and dealt with by the panel in meetings in Helsinki (from 11 September to 13 September or from 18 September to 20 September 2011). In these meetings the panels also examined the deviations among the scores and finalised the draft reports together.

The current RC-specific report deals shortly with the background of the evaluation and the terms of participation. The main evaluation feedback is provided in the evaluation report, organised according to the evaluation questions. The original material provided by the RCs for the panellists has been attached to these documents.
On behalf of the evaluation steering group and office, I sincerely wish to thank you warmly for your participation in this evaluation. The effort you made in submitting the data to TUHAT-RIS is gratefully acknowledged by the University. We wish that you find this panel feedback useful in many ways. The bibliometric profiles may open a new view on your publication forums and provide a perspective for discussion on your choice of forums. We especially hope that this evaluation report will help you in setting the future goals of your research.

Johanna Björkroth
Vice-Rector
Chair of the Steering Group of the Evaluation

Steering Group of the evaluation
Steering group, nominated by the Rector of the University, was responsible for the planning of the evaluation and its implementation having altogether 22 meetings between February 2010 and March 2012.

Chair
Vice-Rector, professor Johanna Björkroth

Vice-Chair
Professor Marja Airaksinen

Chief Information Specialist, Dr Maria Forsman
Professor Arto Mustajoki
University Lecturer, Dr Kirsi Pyhältö
Director of Strategic Planning and Development, Dr Ossi Tuomi
Doctoral candidate, MSoCSc Jussi Vauhkonen
Panel members

CHAIR
Professor Ary A. Hoffman
Ecological genetics, evolutionary biology, biodiversity conservation, zoology
University of Melbourne, Australia

VICE-CHAIR
Professor Barbara Koch
Forest Sciences, remote sensing
University of Freiburg, Germany

Professor Per-Anders Hansson
Agricultural engineering, modeling, life cycle analysis, bioenergy
Swedish University of Agricultural Sciences

Professor Danny Huylebroeck
Developmental biology
Katholieke Universiteit Leuven, Belgium

Professor Jonathan King
Virus assembly, protein folding
Massachusetts Institute of Technology MIT, USA

Professor Hannu J.T. Korhonen
Functional foods, dairy technology, milk hygiene
MTT Agrifood Research Finland

Professor Kristina Kruus
Microbiological biotechnology, microbiological enzymes, applied microbiology
VTT Technical Research Centre of Finland

Professor Joakim Lundeberg
Biochemistry, biotechnology, sequencing, genomics
KTH Royal Institute of Technology, Sweden

Professor Dominiek Maes
Veterinary medicine
Ghent University, Belgium

Professor Olli Saastamoinen
Forest economics and policy
University of Eastern Finland

Professor Kai Simons
Biochemistry, molecular biology, cell biology
Max-Planck-Institute of Molecular Cell Biology and Genetics, Germany

The panel, independently, evaluated all the submitted material and was responsible for the feedback of the RC-specific reports. The panel members were asked to confirm whether they had any conflict of interests with the RCs. If this was the case, the panel members disqualified themselves in discussion and report writing.

Added expertise to the evaluation was contributed by the members from the other panels and by one evaluator outside the panels.
External Expert
Professor Anders Linde
Oral biochemistry
Faculty of Odontology
Göteborg University
Sweden

Experts from the Other Panels
Professor Caitlin Buck, from the Panel of Natural Sciences
Professor Ritske Huismans, from the Panel of Natural Sciences
Professor Johanna Ivaska, from the Panel of Medicine, biomedicine and health sciences
Professor Lea Kauppi, from the Panel of Natural Sciences
Professor Holger Stark, from the Panel of Natural Sciences
Professor Peter York, from the Panel of Medicine, biomedicine and health sciences

EVALUATION OFFICE
Dr Seppo Saari, Doc., Senior Adviser in Evaluation, was responsible for the entire evaluation, its planning and implementation and acted as an Editor-in-chief of the reports.

Dr Eeva Sievi, Doc., Adviser, was responsible for the registration and evaluation material compilations for the panellists. She worked in the evaluation office from August 2010 to July 2011.

MSocSc Paula Ranne, Planning Officer, was responsible for organising the panel meetings and all the other practical issues like agreements and fees and editing a part the RC-specific reports. She worked in the evaluation office from March 2011 to January 2012.

Mr Antti Moilanen, Project Secretary, was responsible for editing the reports. He worked in the evaluation office from January 2012 to April 2012.

TUHAT OFFICE
Provision of the publication and other scientific activity data
Mrs Aija Kaitera, Project Manager of TUHAT-RIS served the project ex officio providing the evaluation project with the updated information from TUHAT-RIS. The TUHAT office assisted in mapping the publications with CWTS/University of Leiden.

MA Liisa Ekebom, Assisting Officer, served in TUHAT-RIS updating the publications for the evaluation. She also assisted the UH/Library analyses.

BA Liisa Jäppinen, Assisting Officer, served in TUHAT-RIS updating the publications for the evaluation.

HELSINKI UNIVERSITY LIBRARY
Provision of the publication analyses
Dr Maria Forsman, Chief Information Specialist in the Helsinki University Library, managed with her 10 colleagues the bibliometric analyses in humanities, social sciences and in other fields of sciences where CWTS analyses were not applicable.
Acronyms and abbreviations applied in the report

External competitive funding
AF – Academy of Finland
TEKES - Finnish Funding Agency for Technology and Innovation
EU - European Union
ERC - European Research Council
International and national foundations
FP7/6 etc. /Framework Programmes/Funding of European Commission

Evaluation marks
Outstanding (5)
Excellent (4)
Very Good (3)
Good (2)
Sufficient (1)

Abbreviations of Bibliometric Indicators
P - Number of publications
TCS – Total number of citations
MCS - Number of citations per publication, excluding self-citations
PNC - Percentage of uncited publications
MNCS - Field-normalized number of citations per publication
MNJS - Field-normalized average journal impact
THCP10 - Field-normalized proportion highly cited publications (top 10%)
INT_COV - Internal coverage, the average amount of references covered by the WoS
WoS – Thomson Reuters Web of Science Databases

Participation category
Category 1. The research of the participating community represents the international cutting edge in its field.
Category 2. The research of the participating community is of high quality, but the community in its present composition has yet to achieve strong international recognition or a clear break-through.
Category 3. The research of the participating community is distinct from mainstream research, and the special features of the research tradition in the field must be considered in the evaluation.
Category 4. The research of the participating community represents an innovative opening.
Category 5. The research of the participating community has a highly significant societal impact.

Research focus areas of the University of Helsinki
Focus area 1: The basic structure, materials and natural resources of the physical world
Focus area 2: The basic structure of life
Focus area 3: The changing environment – clean water
Focus area 4: The thinking and learning human being
Focus area 5: Welfare and safety
Focus area 6: Clinical research
Focus area 7: Precise reasoning
Focus area 8: Language and culture
Focus area 9: Social justice
Focus area 10: Globalisation and social change
1 Introduction to the Evaluation

1.1 RC-specific evaluation reports

The participants in the evaluation of research and doctoral training were Researcher Communities (hereafter referred to as the RC). The RC refers to the group of researchers who registered together in the evaluation of their research and doctoral training. Preconditions in forming RCs were stated in the Guidelines for the Participating Researcher Communities. The RCs defined themselves whether their compositions should be considered well-established or new.

It is essential to emphasise that the evaluation combines both meta-evaluation and traditional research assessment exercise and its focus is both on the research outcomes and procedures associated with research and doctoral training. The approach to the evaluation is enhancement-led where self-evaluation constituted the main information. The answers to the evaluation questions formed together with the information of publications and other scientific activities an entity that was to be reviewed as a whole.

The present evaluation recognizes and justifies the diversity of research practices and publication traditions. Traditional Research Assessment Exercises do not necessarily value high quality research with low volumes or research distinct from mainstream research. It is challenging to expose the diversity of research to fair comparison. To understand the essence of different research practices and to do justice to their diversity was one of the main challenges of the present evaluation method. Understanding the divergent starting points of the RCs demanded sensitivity from the evaluators.

1.2 Aims and objectives in the evaluation

The aims of the evaluation are as follows:

- to improve the level of research and doctoral training at the University of Helsinki and to raise their international profile in accordance with the University’s strategic policies. The improvement of doctoral training should be compared to the University’s policy.
- to enhance the research conducted at the University by taking into account the diversity, originality, multidisciplinary nature, success and field-specificity,
- to recognize the conditions and prerequisites under which excellent, original and high-impact research is carried out,
- to offer the academic community the opportunity to receive topical and versatile international peer feedback,
- to better recognize the University’s research potential.
- to exploit the University’s TUHAT research information system to enable transparency of publishing activities and in the production of reliable, comparable data.

1.3 Evaluation method

The evaluation can be considered as an enhancement-led evaluation. Instead of ranking, the main aim is to provide useful information for the enhancement of research and doctoral training of the participating RCs. The comparison should take into account each field of science and acknowledge their special character.

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1 The panellists did not read research reports or abstracts but instead, they evaluated answers to the evaluation questions, tables and compilations of publications, other scientific activities, bibliometrics or comparable analyses.

2 Policies on doctoral degrees and other postgraduate degrees at the University of Helsinki.
The comparison produced information about the present status and factors that have lead to success. Also challenges in the operations and outcomes were recognized.

The evaluation approach has been designed to recognize better the significance and specific nature of researcher communities and research areas in the multidisciplinary top-level university. Furthermore, one of the aims of the evaluation is to bring to light those evaluation aspects that differ from the prevalent ones. Thus the views of various fields of research can be described and research arising from various starting points understood better. The doctoral training is integrated into the evaluation as a natural component related to research. Operational processes of doctoral training are being examined in the evaluation.

**Five stages of the evaluation method were:**
1. Registration – Stage 1
2. Self-evaluation – Stage 2
3. TUHAT\(^3\) compilations on publications and other scientific activities\(^4\)
4. External evaluation
5. Public reporting

### 1.4 Implementation of the external evaluation

**Five Evaluation Panels**

Five evaluation panels consisted of independent, renowned and highly respected experts. The main domains of the panels are:

1. biological, agricultural and veterinary sciences
2. medicine, biomedicine and health sciences
3. natural sciences
4. humanities
5. social sciences

The University invited 10 renowned scientists to act as chairs or vice-chairs of the five panels based on the suggestions of faculties and independent institutes. Besides leading the work of the panel, an additional role of the chairs was to discuss with other panel chairs in order to adopt a broadly similar approach. The panel chairs and vice-chairs had a pre-meeting on 27 May 2011 in Amsterdam.

The panel compositions were nominated by the Rector of the University 27 April 2011. The participating RCs suggested the panel members. The total number of panel members was 50. The reason for a smaller number of panellists as compared to the previous evaluations was the character of the evaluation as a meta-evaluation. The panellists did not read research reports or abstracts but instead, they evaluated answers to the evaluation questions, tables and compilations of publications, other scientific activities, bibliometrics and comparable analyses.

The panel meetings were held in Helsinki:

- On 11–13 September 2011: (1) biological, agricultural and veterinary sciences, (2) medicine, biomedicine and health sciences and (3) natural sciences.
- On 18–20 September 2011: (4) humanities and (5) social sciences.

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\(^3\) TUHAT (acronym) of Research Information System (RIS) of the University of Helsinki

\(^4\) Supervision of thesis, prizes and awards, editorial work and peer reviews, participation in committees, boards and networks and public appearances.
1.5 Evaluation material

The main material in the evaluation was the RCs’ self-evaluations that were qualitative in character and allowed the RCs to choose what was important to mention or emphasise and what was left unmentioned.

The present evaluation is exceptional at least in the Finnish context because it is based on both the evaluation documentation (self-evaluation questions, publications and other scientific activities) and the bibliometric reports. All documents were delivered to the panellists for examination.

Traditional bibliometrics can be reasonably done mainly in medicine, biosciences and natural sciences when using the Web of Science database, for example. Bibliometrics, provided by CWTS/The Centre for Science and Technology Studies, University of Leiden, cover only the publications that include WoS identification in the TUHAT-RIS.

Traditional bibliometrics are seldom relevant in humanities and social sciences because the international comparable databases do not store every type of high quality research publications, such as books and monographs and scientific journals in other languages than English. The Helsinki University Library has done analysis to the RCs, if their publications were not well represented in the Web of Science databases (RCs should have at least 50 publications and internal coverage of publications more than 40%) – it meant 58 RCs. The bibliometric material for the evaluation panels was available in June 2011. The RC-specific bibliometric reports are attached at the end of each report.

The panels were provided with the evaluation material and all other necessary background information, such as the basic information about the University of Helsinki and the Finnish higher education system.

Evaluation material
1. Registration documents of the RCs for the background information
2. Self evaluation material – answers to the evaluation questions
3. Publications and other scientific activities based on the TUHAT RIS:
   3.1. statistics of publications
   3.2. list of publications
   3.3. statistics of other scientific activities
   3.4. list of other scientific activities
4. Bibliometrics and comparable analyses:
   4.1. Analyses of publications based on the verification of TUHAT-RIS publications with the Web of Science publications (CWTS/University of Leiden)
   4.2. Publication statistics analysed by the Helsinki University Library - mainly for humanities and social sciences
5. University level survey on doctoral training (August 2011)
6. University level analysis on publications 2005–2010 (August 2011) provided by CWTS/University of Leiden

Background material

University of Helsinki
- Basic information about the University of the Helsinki
- The structure of doctoral training at the University of Helsinki
- Previous evaluations of research at the University of Helsinki – links to the reports: 1998 and 2005

The Finnish Universities/Research Institutes
- Finnish University system
- Evaluation of the Finnish National Innovation System
- The State and Quality of Scientific Research in Finland. Publication of the Academy of Finland 9/09.

The evaluation panels were provided also with other relevant material on request before the meetings in Helsinki.
1.6 Evaluation questions and material

The participating RCs answered the following evaluation questions which are presented according to the evaluation form. In addition, TUHAT RIS was used to provide the additional material as explained. For giving the feedback to the RCs, the panellists received the evaluation feedback form constructed in line with the evaluation questions:

1. **Focus and quality of the RC’s research**
   - Description of
     - the RC’s research focus.
     - the quality of the RC’s research (incl. key research questions and results)
     - the scientific significance of the RC’s research in the research field(s)
   - Identification of the ways to strengthen the focus and improve the quality of the RC’s research

   The additional material: TUHAT compilation of the RC’s publications, analysis of the RC’s publications data (provided by University of Leiden and the Helsinki University Library)
   A written feedback from the aspects of: scientific quality, scientific significance, societal impact, innovativeness
   - Strengths
   - Areas of development
   - Other remarks
   - Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)

2. **Practises and quality of doctoral training**
   - Organising of the doctoral training in the RC. Description of the RC’s principles for:
     - recruitment and selection of doctoral candidates
     - supervision of doctoral candidates
     - collaboration with faculties, departments/institutes, and potential graduate schools/doctoral programmes
     - good practises and quality assurance in doctoral training
     - assuring of good career perspectives for the doctoral candidates/fresh doctorates
   - Identification of the RC’s strengths and challenges related to the practises and quality of doctoral training, and the actions planned for their development.

   The additional material: TUHAT compilation of the RC’s other scientific activities/supervision of doctoral dissertations
   A written feedback from the aspects of: processes and good practices related to leadership and management
   - Strengths
   - Areas of development
   - Other remarks
   - Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)

3. **The societal impact of research and doctoral training**
   - Description on how the RC interacts with and contributes to the society (collaboration with public, private and/or 3rd sector).
   - Identification of the ways to strengthen the societal impact of the RC’s research and doctoral training.

   The additional material: TUHAT compilation of the RC’s other scientific activities.
   A written feedback from the aspects of: societal impact, national and international collaboration, innovativeness
   - Strengths
   - Areas of development
   - Other remarks
   - Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)
4. International and national (incl. intersectoral) research collaboration and researcher mobility

- Description of:
  - the RC’s research collaborations and joint doctoral training activities
  - how the RC has promoted researcher mobility

- Identification of the RC’s strengths and challenges related to research collaboration and researcher mobility, and the actions planned for their development.

A written feedback from the aspects of: scientific quality, national and international collaboration

- Strengths
- Areas of development
- Other remarks
- Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)

5. Operational conditions

- Description of the operational conditions in the RC’s research environment (e.g. research infrastructure, balance between research and teaching duties).

- Identification of the RC’s strengths and challenges related to operational conditions, and the actions planned for their development.

A written feedback from the aspects of: processes and good practices related to leadership and management

- Strengths
- Areas of development
- Other remarks
- Recommendations

6. Leadership and management in the researcher community

- Description of:
  - the execution and processes of leadership in the RC
  - how the management-related responsibilities and roles are distributed in the RC
  - how the leadership- and management-related processes support
    - high quality research
    - collaboration between principal investigators and other researchers in the RC
    - the RC’s research focus
    - strengthening of the RC’s know-how

- Identification of the RC’s strengths and challenges related to leadership and management, and the actions planned for developing the processes

7. External competitive funding of the RC

- The RCs were asked to provide information of such external competitive funding, where:
  - the funding decisions have been made during 1.1.2005-31.12.2010, and
  - the administrator of the funding is/has been the University of Helsinki

- On the e-form the RCs were asked to provide:
  1) The relevant funding source(s) from a given list (Academy of Finland/Research Council, TEKES/The Finnish Funding Agency for Technology and Innovation, EU, ERC, foundations, other national funding organisations, other international funding organisations), and
  2) The total sum of funding which the organisation in question had decided to allocate to the RCs members during 1.1.2005-31.12.2010.

Competitive funding reported in the text is also to be considered when evaluating this point.

A written feedback from the aspects of: scientific quality, scientific significance, societal impact, innovativeness, future significance

- Strengths
- Areas of development
- Other remarks
- Recommendations

8. The RC’s strategic action plan for 2011-2013

- RC’s description of their future perspectives in relation to research and doctoral training.

A written feedback from the aspects of: scientific quality, scientific significance, societal impact, processes and good practices related to leadership and management, national and international collaboration, innovativeness, future significance

- Strengths
- Areas of development
9. Evaluation of the category of the RC in the context of entity of the evaluation material (1-8)

The RC's fitness to the chosen participation category
A written feedback evaluating the RC's fitness to the chosen participation category
- Strengths
- Areas of development
- Other remarks
- Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)

10. Short description of how the RC members contributed the compilation of the stage 2 material
Comments on the compilation of evaluation material

11. How the UH's focus areas are presented in the RC's research?
Comments if applicable

12. RC-specific main recommendations based on the previous questions 1-11

13. RC-specific conclusions

1.7 Evaluation criteria

The panellists were expected to give evaluative and analytical feedback to each evaluation question according to their aspects in order to describe and justify the quality of the submitted material. In addition, the evaluation feedback was asked to be pointed out the level of the performance according to the following classifications:
- outstanding (5)
- excellent (4)
- very good (3)
- good (2)
- sufficient (1)

Evaluation according to the criteria was to be made with thorough consideration of the entire evaluation material of the RC in question. Finally, in questions 1-4 and 9, the panellists were expected to classify their written feedback into one of the provided levels (the levels included respective descriptions, 'criteria'). Some panels used decimals in marks. The descriptive level was interpreted according to the integers and not rounding up the decimals by the editors.

Description of criteria levels

Question 1 – FOCUS AND QUALITY OF THE RC’S RESEARCH

Classification: Criteria (level of procedures and results)

Outstanding quality of procedures and results (5)
Outstandingly strong research, also from international perspective. Attracts great international interest with a wide impact, including publications in leading journals and/or monographs published by leading international publishing houses. The research has world leading qualities. The research focus, key research questions scientific significance, societal impact and innovativeness are of outstanding quality.

In cases where the research is of a national character and, in the judgement of the evaluators, should remain so, the concepts of "international attention" or "international impact" etc. in the grading criteria above may be replaced by "international comparability".
Operations and procedures are of outstanding quality, transparent and shared in the community. The improvement of research and other efforts are documented and operations and practices are in alignment with the documentation. The ambition to develop the community together is of outstanding quality.

**Excellent quality of procedures and results (4)**

Research of excellent quality. Typically published with great impact, also internationally. Without doubt, the research has a leading position in its field in Finland.

Operations and procedures are of excellent quality, transparent and shared in the community. The improvement of research and other efforts are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of excellent quality.

**Very good quality of procedures and results (3)**

The research is of such very good quality that it attracts wide national and international attention.

Operations and procedures are of very good quality, transparent and shared in the community. The improvement of research and other efforts are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of very good quality.

**Good quality of procedures and results (2)**

Good research attracting mainly national attention but possessing international potential, extraordinarily high relevance may motivate good research.

Operations and procedures are of good quality, shared occasionally in the community. The improvement of research and other efforts are occasionally documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of good quality.

**Sufficient quality of procedures and results (1)**

In some cases the research is insufficient and reports do not gain wide circulation or do not have national or international attention. Research activities should be revised.

Operations and procedures are of sufficient quality, shared occasionally in the community. The improvement of research and other efforts are occasionally documented and operations and practices are to some extent in alignment with the documentation. The ambition to develop the community together is of sufficient quality.

**Question 2 – DOCTORAL TRAINING**

**Question 3 – SOCIETAL IMPACT**

**Question 4 – COLLABORATION**

**Classification: Criteria (level of procedures and results)**

**Outstanding quality of procedures and results (5)**

Procedures are of outstanding quality, transparent and shared in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and management are documented and operations and practices are in alignment with the documentation. The ambition to develop the community together is of outstanding quality. The procedures and results are regularly evaluated and the feedback has an effect on the planning.

**Excellent quality of procedures and results (4)**

Procedures are of excellent quality, transparent and shared in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and management are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of excellent quality. The procedures and outcomes are evaluated and the feedback has an effect on the planning.

**Very good quality of procedures and results (3)**

Procedures are of very good quality, transparent and shared in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and
management are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of very good quality.

**Good quality of procedures and results (2)**

Procedures are of good quality, shared occasionally in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and management are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of good quality.

**Sufficient quality of procedures and results (1)**

Procedures are of sufficient quality, transparent and shared in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and management are occasionally documented and operations and practices are to some extent in alignment with the documentation. The ambition to develop the community together is of sufficient quality.

**Question 9 – CATEGORY**

Participation category – fitness for the category chosen

The choice and justification for the chosen category below should be reflected in the RC’s responses to the evaluation questions 1–8.

1. *The research of the participating community represents the international cutting edge in its field.*

2. *The research of the participating community is of high quality, but the community in its present composition has yet to achieve strong international recognition or a clear break-through.*

3. *The research of the participating community is distinct from mainstream research, and the special features of the research tradition in the field must be considered in the evaluation. The research is of high quality and has great significance and impact in its field. However, the generally used research evaluation methods do not necessarily shed sufficient light on the merits of the research.*

4. *The research of the participating community represents an innovative opening.* A new opening can be an innovative combination of research fields, or it can be proven to have a special social, national or international demand or other significance. Even if the researcher community in its present composition has yet to obtain proof of international success, its members can produce convincing evidence of the high level of their previous research.

5. *The research of the participating community has a highly significant societal impact.* The participating researcher community is able to justify the high social significance of its research. The research may relate to national legislation, media visibility or participation in social debate, or other activities promoting social development and human welfare. In addition to having societal impact, the research must be of a high standard.

**An example of outstanding fitness for category choice (5)**

The RC’s representation and argumentation for the chosen category were convincing. The RC recognized its real capacity and apparent outcomes in a wider context to the research communities. The specific character of the RC was well-recognized and well stated in the responses. The RC fitted optimally for the category.

- Outstanding (5)
- Excellent (4)
- Very good (3)
- Good (2)
- Sufficient (1)

The above-mentioned definition of outstanding was only an example in order to assist the panellists in the positioning of the classification. There was no exact definition for the category fitness.

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5 The panels discussed the category fitness and made the final conclusions of the interpretation of it.
1.8 Timetable of the evaluation

The main timetable of the evaluation:

1. Registration November 2010
3. External peer review May–September 2011
4. Published reports March–April 2012
   - University level public report
   - RC specific reports

The entire evaluation was implemented during the university’s strategy period 2010–2012. The preliminary results were available for the planning of the following strategy period in late autumn 2011. The evaluation reports will be published in March/April 2012. More detailed time schedule is published in the University report.

1.9 Evaluation feedback – consensus of the entire panel

The panellists evaluated all the RC-specific material before the meetings in Helsinki and mailed the draft reports to the evaluation office. The latest interim versions were on-line available to all the panellists on the Wiki-sites. In September 2011, in Helsinki the panels discussed the material, revised the first draft reports and decided the final numeric evaluation. After the meetings in Helsinki, the panels continued working and finalised the reports before the end of November 2011. The final RC-specific reports are the consensus of the entire panel.

The evaluation reports were written by the panels independently. During the editing process, the evaluation office requested some clarifications from the panels when necessary. The tone and style in the reports were not harmonized in the editing process. All the reports follow the original texts written by the panels as far as it was possible.

The original evaluation material of the RCs, provided for the panellists is attached at the end of the report. It is essential to notice that the exported lists of publications and other scientific activities depend how the data was stored in the TUHAT-RIS by the RCs.
2 Evaluation feedback

2.1 Focus and quality of the RC’s research

- Description of
  - the RC’s research focus
  - the quality of the RC’s research (incl. key research questions and results)
  - the scientific significance of the RC’s research in the research field(s)
- Identification of the ways to strengthen the focus and improve the quality of the RC’s research

ASPECTS: Scientific quality, scientific significance, societal impact, innovativeness

The RC is active in an area with research very important for future humanity welfare. The research is in major parts of applied nature but there has been a development to include more and more basic sciences. The potential for vital societal impact is high due to, for example, increased possibilities for multidisciplinarity. The RC is among the largest in the Panel for Biological, agricultural and veterinary sciences to be evaluated, and it still is at its formative stage.

The RC includes research groups from four old departments now joined into one department (Agricultural Sciences) and one part of another. Focus in the RC’s own description is very much marked by the cooperation between the SSA groups. It may be important to mention that the strength in multidisciplinary projects have to be based on good knowledge and methodological development within each speciality, so also each group’s internal development is important.

The RC has developed a common goal and research strategy based on system and whole chain thinking. The areas mentioned being especially interesting for the RC are well motivated and a result of a well done analysis. New networking research areas (e.g. bioenergy, biochar) are identified and this is expected to increase the scientific significance of the RC’s research.

The research includes several totally different disciplines - methodologically, which can be a strength, but it will not be an easy task to melt these together in all aspects.

It is recommended to work even more on research specialization to be able to go deeper in some strategically chosen subjects. The special conditions for agriculture in Finland (special climate, soils etc) certainly raise several tasks with high interest also for an international public.

It is also recommended to work more as well as strategically with the methodological base for the research within each discipline but perhaps even more importantly on the methodology identified as useful for cooperative projects.

Numeric evaluation: 3 (Very good)

2.2 Practises and quality of doctoral training

- Organising of the doctoral training in the RC. Description of the RC’s principles for:
  - recruitment and selection of doctoral candidates
  - supervision of doctoral candidates
  - collaboration with faculties, departments/institutes, and potential graduate schools/doctoral programmes
  - good practises and quality assurance in doctoral training
  - assuring of good career perspectives for the doctoral candidates/fresh doctorates
- Identification of the RC’s strengths and challenges related to the practises and quality of doctoral training, and the actions planned for their development.
- Additional material: TUHAT compilation of the RC’s other scientific activities/supervision of doctoral dissertations

ASPECTS: Processes and good practices related to leadership and management
Different strategies are used for recruitment of new PhD students. A system with open announcement of student places, and with a good planning of the work in advance, should be encouraged. A system where all students have similar working conditions gives strength and simplifies the student management.

Doctoral training is largely following University of Helsinki (UH)/faculty standards and procedures. Monograph theses are not encouraged but rather article-based ones including a minimum number (usually four) of scientific papers as a standard. This is favourable since it provides several advantages such as continuous scientific review of the work, possibility to see student problems at an early stage, better international spreading of the work etc.

Routines for examinations are in principle appropriate to guarantee the quality. However, the practice that usually one from the two pre-examiners comes from the UH and the other, although external, is usually a domestic expert, looks to be a bit inward oriented and deviates from the practices adopted in many related disciplines in Finland. The public opponent is usually international. Lack of a Doctoral Programme may affect the position of doctoral students adversely.

Supervision is often performed in cooperation between more than one discipline, which is good and follows the faculty rules. The supervision team including, besides the main supervisor, other supervisors and a steering group can consist of up to six senior scientists, which is really a large input and should in principle form a solid support for a doctoral trainee. Worth to mention is also the collaboration with MTT Agrifood Research Finland in several theses work, potential for a good mix between in depth research and work with high societal value.

Obligatory course work and good opportunities to follow international courses, especially NOVA (the Nordic Forestry, Veterinary and Agricultural University Network) courses are very positive to increase competence and also for networking for future research collaboration.

During the six year evaluation period ca. 30 PhDs have been completed. The number is not very large taking into account the supervising resources available. On the other hand, the career prospects for those graduated are excellent – unlike in some other fields in Finland during the last years. This is one reason why a research school/doctoral programme in sustainable agriculture should be a good strategy to increase the cooperation in the newly formed RC, and build networks directly at PhD student level, networks very valid for the future. The area of sustainable agriculture is however very wide and a lot of effort is probably needed to find a program and course structure relevant for most students, but with clear focus areas for research.

Numeric evaluation: 3.5 (Very good)

2.3 The societal impact of research and doctoral training

- Description on how the RC interacts with and contributes to the society (collaboration with public, private and/or 3rd sector).
- Identification of the ways to strengthen the societal impact of the RC’s research and doctoral training.
- Additional material: TUHAT compilation of the RC’s other scientific activities.

ASPECTS: Societal impact, national and international collaboration, innovativeness

The RC is active in many areas very important for the society. It also appears that the RC has many strong contacts, close collaboration and effective media communication with agricultural professionals, farmers and their associations, as well as with private companies and public research and other institutions within and related to the wide agricultural sector. This is also materialized in the form of substantial funding provided by public and private stakeholders.

Collaboration with MTT Agrifood Research Finland is important in many areas, including the doctoral training.

The societal interactions seem to be focused on national tasks, which certainly are the primary ones due to the strategic role of agriculture in any society and the fact that the RC’s agricultural fields are not present in any other university. Participation in planning and support activities related to agricultural, food and environmental policies is also important, often together with MTT.
International impact is less profiled and tangible, though some individual experts are highly positioned in international organizations etc. It is recommended to pay more attention to networking and collaboration with European and international organizations, giving important input especially to research tasks with global perspective, for example sustainable food and bioenergy production.

**Numeric evaluation: 4 (Excellent)**

### 2.4 International and national (incl. intersectoral) research collaboration and researcher mobility

- **Description of**
  - the RC’s research collaborations and joint doctoral training activities
  - how the RC has promoted researcher mobility
- **Identification of the RC’s strengths and challenges related to research collaboration and researcher mobility, and the actions planned for their development.**

**ASPECTS: Scientific quality, national and international collaboration**

Since the RC in most cases is the only Finnish university with research in the areas described, cooperation and personal exchange with other national universities of natural reasons are limited. The cooperation with other UH units and with research institutes are better developed and one strength of the RC.

International collaboration seems to a considerable extent be focused on Nordic research cooperation, in almost all fields of RC, due to the strong traditions and the importance of NOVA/BOVA collaboration (cooperation network between Nordic and Baltic Veterinary, Forestry and Agricultural universities), in particular in organization of courses for doctoral training where the RC senior members are actively involved. Not much is mentioned about other collaboration globally, e.g. agreements with other universities abroad.

Funds are readily available for conference travel and similar tasks and researcher mobility seems not to be a major problem, even if big educational load limits the mobility for several of the PIs. The number of conference publications (ref and non-ref) adds up to 244 during years 2005-2010.

In relation to the number of researchers in the RC, especially the number of EU-projects is not so high. More focus on such collaboration can be valuable and it can most certainly increase the number of projects. Some of the groups do not seem to be involved in any project at EU-level at all, which may be worth to be improved.

**Numeric evaluation: 3 (Very good)**

### 2.5 Operational conditions

- **Description of the operational conditions in the RC’s research environment (e.g. research infrastructure, balance between research and teaching duties).**
- **Identification of the RC’s strengths and challenges related to operational conditions, and the actions planned for their development.**

**ASPECTS: Processes and good practices related to leadership and management**

The department structure and the RC are rather new and need some time to mature, related both to research and management routines. However, the RC has in general very good operational conditions and excellent facilities, for example the developing VAPL is already giving excellent openings for new interesting research.

The balance between research and education seems problematic and it is recommended that those PI’s who are supervising doctoral students should be allowed less lecturing hours and more time for research, if so wished. Important is also that good management routines are used/developed so that the professors/lecturers can focus on the content of the courses and not on how to handle the student
administration. However, to keep the quality of the education, it is also important to internally recognize the course work as very valuable for the RC.

It is recommended that special funds are opened for writing of large applications, also for those finally not approved. It may be one way to increase the number of, for example, EU-projects.

2.6 Leadership and management in the researcher community

- Description of
  - the execution and processes of leadership in the RC
  - how the management-related responsibilities and roles are distributed in the RC
  - how the leadership- and management-related processes support
    - high quality research
    - collaboration between principal investigators and other researchers in the RC
    - the RC’s research focus
    - strengthening of the RC’s know-how
- Identification of the RC’s strengths and challenges related to leadership and management, and the actions planned for developing the processes

ASPECTS: Processes and good practices related to leadership and management

The leadership structure of the RC is not so well described in the evaluation material.

The establishment of the new structure in 2010 is expected to improve leadership and management within the department. It appears that this new system is not functioning well as yet or there are some basic problems in the current set-up. This could be a major hindrance to research collaboration internally and should therefore be critically looked into.

Handling of PhD student progress and formal requirements seem not to be centralised, a special director for PhD studies – perhaps in connection to the sought after new programme - may be something for the future.

It seems that the criticism concerning the student-centred planning of most PhD projects and the voluminous (up to six persons) but apparently in many cases formal and non-motivating PhD supervision tasks is justified: Drifting of students has been a symptom of that. If PhD projects can be channelled to serve the ongoing research activities, it would result into more interaction and better motivation for the thesis and its supervision. Although the PhD students should be responsible to not “drifting”, it is also true that meaningful and motivated supervision is also necessary. More solid and centralized yet flexible practices need to be sought.

2.7 External competitive funding of the RC

- The RCs were asked to provide information of such external competitive funding, where:
  - the funding decisions have been made during 1.1.2005–31.12.2010, and
  - the administrator of the funding is/has been the University of Helsinki
- On the e-form the RCs were asked to provide:
  1) The relevant funding source(s) from a given list (Academy of Finland/Research Council, TEKES/The Finnish Funding Agency for Technology and Innovation, EU, ERC, foundations, other national funding organisations, other international funding organizations), and
  2) The total sum of funding which the organisation in question had decided to allocate to the RCs members during 1.1.2005–31.12.2010.

Competitive funding reported in the text is also to be considered when evaluating this point.

ASPECTS: Scientific quality, scientific significance, societal impact, innovativeness and future significance

External funding is obtained from a wide range of different organizations and numerous foundations, the main ones being the Academy of Finland and the Finnish Funding Agency for Technology and Innovation.
(Tekes). The Academy of Finland financing has become extremely competitive and many very good to excellent applications remain not funded. Often – as mentioned in the RC material – applied empirical sciences may have some disadvantage to compete in publication record with “shorter cycle” basic research or laboratory sciences. However, the growing coalitions between basic sciences and applied ones (and the melting borderlines between them) already recognized in the work of the RC, together with increased understanding of the societal relevance of applied studies, may slowly change the existing biases.

Nevertheless, the advancement of the quality of research continues to be the decisive criteria and usually the larger entities, such as reformed in the agricultural sciences, have better preconditions to improve the quality than the smaller ones.

EU funding is relatively small and it might reflect on the limitations of the RC in the European research networking or in the RC’s expertise, which is not compatible with the recent EU calls.

2.8 The RC’s strategic action plan for 2011–2013

• RC’s description of their future perspectives in relation to research and doctoral training.

ASPECTS: Scientific quality, scientific significance, societal Impact, processes and good practices related to leadership and management, national and international collaboration, innovativeness, future significance

The RC describes a number of well motivated strategies to increase the possibilities to produce good research and a good climate for innovations and PhD studies.

The RC is newly developed, and it is obvious that some work remains with the definition of research focus areas and how to plan research within each area. The RC has identified six relevant focus areas to be most perspective at this stage but some of these are very general. It is recommended to go on with the strategic planning with further specification and prioritizing of these areas, taking into account also the potential and recognized problems with multi-/interdisciplinary research project calls.

The assessment of the needs to strengthen the expertise and resources of SSA are well-founded and pragmatic and thus mostly implementable in near future.

2.9 Evaluation of the category of the RC in the context of entity of the evaluation material (1–8)

The RC’s fitness to the chosen participation category.

Category 2. The research of the participating community is of high quality, but the community in its present composition has yet to achieve strong international recognition or a clear break-through.

Chosen category 2 ‘The research of the participating community is of high quality, but the community in its present composition has yet to achieve strong international recognition or a clear break-through’.

As mentioned earlier, the choice of the participating category is realistic and provides both motivation and perspectives to advance along the envisaged paths, hopefully a bit more illuminated compared to the present review material.

Numeric evaluation: 4 (Excellent)

2.10 Short description of how the RC members contributed the compilation of the stage 2 material

This was done in a traditional and acceptable way. The listing of the names of participating senior researchers adds credibility and commitment.
2.11 How the UH’s focus areas are presented in the RC’s research

The RC’s research has strong relevance in particular to the following of the UH’s focus areas: ‘Basic materials of the physical world’, ‘Basic structure of life’, ‘Changing environment’ and ‘Welfare and safety’. In particular basic and applied agricultural and related sciences play a fundamental role in maintaining the basics for welfare and food safety in the world.

2.12 RC-specific main recommendations

The RC is newly developed, and it is obvious that some work remains with the definition of research focus areas and how to plan research within each area. The RC has identified six relevant focus areas to be most perspective at this stage but some of these are very general, and it is recommended to go on with the strategic planning with further specification and prioritizing.

More solid and centralized yet flexible practices for PhD education need to be sought.

A research school/doctoral programme in sustainable agriculture should be a good strategy to increase the cooperation in the newly formed RC, and building of networks directly at PhD student level.

It is recommended to pay more attention to networking and collaboration with European and international organizations, giving important input especially to research tasks with global perspective.

The establishment of the new structure in 2010 is expected to improve leadership and management within the departments. It appears that this new system is not functioning well at the moment. This could be a major hindrance to research collaboration and should therefore be critically looked into.

2.13 RC-specific conclusions

The RC is newly developed and needs some time to mature.

The RC works with tasks very important for the future and has described several important future focus areas in which its potential can be fully utilized.

The national scientific significance and societal impact are substantial but there is also a need to expand the research to global issues related to food production and factors affecting it.

The RC is quite diverse, which can be considered as a threat (more difficult to manage, more difficult to set out specific research lines, etc.), but also as an opportunity if the synergies between disciplines can be used for innovative research on common problems.

2.14 Preliminary findings in the Panel-specific feedback

This RC is at an early stage of development and it is still not entirely clear what the benefits arising from the RC are likely to be, although some interesting directions for further development have been identified. Doctoral graduates appear to have good career prospects but there is further potential for the development of the doctoral program. The RC is well positioned for having a broader societal impact. There is potential to engage further with EU networks and further development of a broader funding base including EU programs. The balance between research and teaching seems problematic and perhaps staff should be further acknowledged for time spent on doctoral supervision. The strategic plan requires further development particularly in terms of adding more detail to plans.
3 Appendices

A. Original evaluation material
   a. Registration material – Stage 1
   b. Answers to evaluation questions – Stage 2
   c. List of publications
   d. List of other scientific activities

B. Bibliometric analyses
   a. Analysis provided by CWTS/University of Leiden
   b. Analysis provided by Helsinki University Library (66 RCs)
International evaluation of research and doctoral training
at the University of Helsinki 2005-2010

RC-SPECIFIC MATERIAL FOR THE PEER REVIEW

NAME OF THE RESEARCHER COMMUNITY:
Science of Sustainable Agriculture (SSA)

LEADER OF THE RESEARCHER COMMUNITY:
University Lecturer Frederick Stoddard, Department of Agricultural Sciences, Faculty of Agriculture and Forestry

RC-SPECIFIC MATERIAL FOR THE PEER REVIEW:

- Material submitted by the RC at stages 1 and 2 of the evaluation
  - STAGE 1 material: RC’s registration form (incl. list of RC participants in an excel table)
  - STAGE 2 material: RC’s answers to evaluation questions
- TUHAT compilations of the RC members’ other scientific activities 1.1.2005-31.12.2010
  (analysis carried out by CWTS, Leiden University)

NB! Since Web of Science(WoS)-based bibliometrics does not provide representative results for most RCs representing humanities, social sciences and computer sciences, the publications of these RCs will be analyzed by the UH Library
(results available by the end of June, 2011)
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC STAGE 1 MATERIAL (registration form)

1 RESPONSIBLE PERSON

Name: Stoddard, Frederick
E-mail:
Phone: +358504150379
Affiliation: Department of Agricultural Sciences
Street address: Latokartanonkaari 5

2 DESCRIPTION OF THE PARTICIPATING RESEARCHER COMMUNITY (RC)

Name of the participating RC (max. 30 characters): Science of Sustainable Agriculture
Acronym for the participating RC (max. 10 characters): SSA

Description of the operational basis in 2005-2010 (eg. research collaboration, joint doctoral training activities) on which the RC was formed (MAX. 2200 characters with spaces): For over 100 years, agricultural research has been vital for improving the world’s ability to feed, clothe and house its inhabitants. Responding to climate change, an increasing population with aspirations for more or better food, and concerns about the environmental impact of various agricultural practices, requires an integrated paradigm that will help to develop future sustainable agricultural systems through ecological intensification.

The reorganization of the Faculty of Agriculture and Forestry at the start of 2010 provided its members with new opportunities for collaboration. The Department of Agricultural Sciences now integrates crop sciences, animal sciences, and agricultural technologies. Recent successes in obtaining research funding for multidisciplinary research, such as sustainable energy cropping, have inspired us to make further cross-boundary efforts. Soil and water scientists, including soil microbiology, from the Department of Food and Environmental Sciences are our partners in these research activities and are part of this Research Community.

The motivation of the RC has several bases. The RC aims to handle the whole agricultural production chain, from the soil through the plant, through the animal, and back to the soil, water or atmosphere, in ways that are both integrated and innovative. We handle the chain from the level of the gene and genome, through the organism, to the crop or barn community, and finally the agroecological system, with monitoring and modelling at the micro and macro scale, thus investigating questions at every step from the highly theoretical to the highly practical. We aim to increase and secure the sustainability of the production chain by making innovative connections in our research on natural and technological areas, to ensure feed security, replace continental surpluses and deficits with balanced production, increase self-sufficiency in areas as diverse as protein feed and energy supply, decrease erosion and nutrient leaching to watercourses, reduce greenhouse gas (GHG) emissions to the atmosphere, improve animal welfare, and mitigate and adapt to climate change.
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC STAGE 1 MATERIAL (registration form)

3 SCIENTIFIC FIELDS OF THE RC

Main scientific field of the RC’s research: biological, agricultural and veterinary sciences

RC’s scientific subfield 1: Agriculture, Multidisciplinary
RC’s scientific subfield 2: --Select--
RC’s scientific subfield 3: --Select--
RC’s scientific subfield 4: --Select--

Other, if not in the list:

4 RC’S PARTICIPATION CATEGORY

Participation category: 2. Research of the participating community is of high quality, but the community in its present composition has yet to achieve strong international recognition or a clear break-through

Justification for the selected participation category (MAX. 2200 characters with spaces): The Department of Agricultural Sciences is newly formed. While many of us have international reputations as individuals, our RC is in its formative stages. Many of us have participated in EU Framework Programme projects, Nordic regional projects, and Academy of Finland projects, showing our status as individuals. Nevertheless, our successful interdisciplinary grant applications have not yet led to many publications as the projects are still very much at the production stage, so as a consortium we have relatively few successes that we can point to. We anticipate that our RC will be as successful as its individuals and that it will reach class 1 in the near future. Thus we feel that we meet the description of category 2, producing high quality research but “the community in its present composition has yet to achieve strong international recognition or a clear break-through”.

5 DESCRIPTION OF THE RC’S RESEARCH AND DOCTORAL TRAINING

Public description of the RC’s research and doctoral training (MAX. 2200 characters with spaces): We conduct multidisciplinary research and training in an integrated manner in our search for sustainable systems of agricultural production, in order to produce new scientific knowledge and understanding for the benefit of society and to maintain the health and welfare of consumers and our domestic animals.

Plant and animal geneticists and breeders use genomics, genetic mapping and DNA markers to enhance the identification and use of yield- and quality-related genes. Plant scientists investigate the genetics and physiology of flowering and stress tolerance to improve the adaptation of berry and field crops to boreal agriculture. Physics and chemistry are applied to the study of soil processes and to the modelling of crop growth, allowing the prediction of responses to changes of land use and of climate. The boundary between agricultural lands and the natural environment is studied with biophysics, water and soil chemistry, and agroecology.

We aim to modify soil-plant-water-atmosphere relationships, including greenhouse gas (GHG) releases, nutrient leaching into watercourses and deposition in sediments, and carbon sequestration, through the use of biochar, sewage sludge, biomethane digestion residues, animal manure, and green manure. The
effects of soil on the release of nutrients, biofortification supplements, and pollutants, their uptake by the crops, crop growth, crop-microbe (both symbiont and pathogen) interactions, and the quality of the crop for food, animal feed, and bioenergy conversion, are followed. Some of this work focuses on acid-sulphate soils that need to be managed with a high water table, with appropriate crops, and with regard to the flow of water into streams.

The production chains of food, feed and energy crops are investigated, and biophysical modelling is applied to achieve both predictive models and a comprehensive “life cycle analysis” of impacts. The nitrogen cycle affects global change and 80% takes place in agriculture, so we follow the capture of nitrogen by bacteria, its passage through soil, plant and animal and back to the soil, seeking a better understanding of the cycle and ways to maximize efficiency.

Significance of the RC’s research and doctoral training for the University of Helsinki (MAX. 2200 characters with spaces):

Agricultural sciences are not represented at any other Finnish university. Thus this research community includes the only possible Finnish contacts for many national and international projects such as those funded by the EU and the Academy of Finland. Our research gains a high national profile, with reports on our work in Maaseudun Tulevaisuus, rural magazines and food magazines, and our own articles for the general public in Maaseudun Tiede. Since our research topics relate directly to everyday life, they can be interesting to the public and generate positive publicity for the university.

Most of the highly trained people in industries and services related to agriculture in Finland have received their research training from us and our predecessors. Furthermore, most of the graduates in these same places, and the teachers at the national agricultural colleges and schools, have been trained here and have benefited, directly or indirectly, from our healthy and active research atmosphere. Our national impact is therefore substantial.

We also have an international impact. Students come from around the world to study here and our researchers have found subsequent employment in world-leading institutions such as the University of Oxford and the FAO.

Nordic cooperation has also played an important role in post graduate training via NOVA (The Nordic Forestry, Veterinary and Agricultural University Network) and NOVA-BOVA (Nordic and Baltic) courses that have brought world top level scientists in a variety of important topics as course lecturers. Almost all of our academics are involved in organizing and teaching these courses and our postgraduates participate in them. For example, about half of the postgraduates in animal science attend a NOVA course each year. Bilateral mobility of doctoral students is also strongly encouraged, including a recent research visit of an Animal Sciences student to INRA, France.

Keywords: acid sulphate soils, agricultural entomology, agricultural technology, agri-environment schemes, agroecology, agroecosystems, agronomy, animal breeding, animal nutrition, animal physiology, animal product quality, animal welfare, berry crops, biodiversity, bioenergy, biofortification, biophysical modelling, bioremediation, carbon sequestration, cereals, climate change, crop breeding, crop nutrition, crop physiology, crop protection, crop quality, crop science, dairy cattle, ecosystem function, erosion, farmland wildlife, feed chain, feed preservation, field crops, flowering, food chain, forage crops, forage grasses, functional diversity, greenhouse gases, horticulture, leaching, legumes, life cycle analysis, monogastrics, nitrogen cycle, nutrient cycling, nutrient management, oilseeds, organic agriculture, organic fertilizers,
phosphorus, robotics, ruminants, sediments, soil chemistry, soil physics, soil science, stress physiology of crops, sustainable agriculture, water science

6 QUALITY OF RC’S RESEARCH AND DOCTORAL TRAINING

Justified estimate of the quality of the RC's research and doctoral training at national and international level during 2005-2010 (MAX. 2200 characters with spaces): Relative to its resources, the community has an outstanding output of internationally recognized research results. We publish in the best possible journals in our fields and our articles have above-average citation rates. Some of our members succeed in publishing in higher-impact journals such as Genetics or the Journal of Nutrition (impact factors around 4). We attract research partners and research students from around the world, which would not happen if our research were poor. The agricultural and forest sciences have the highest proportion of international students (13%) of any sector in Finnish research (Ahonen et al., 2009, Academy of Finland publ. 7/09).

PhD work comprises typically four scientific papers published in internationally recognized, peer reviewed journals, together with a thesis demonstrating a comprehensive overview of the research. The thesis is pre-examined by senior academics, examined publicly by an internationally recognized external examiner, and finally published electronically and publicly available. Our PhD holders find appropriate positions and underemployment of agricultural-science PhDs in Finland, as in many other countries, is lower than that of biological-science PhDs (Haapakorpi & Paasto 2008, Univ. Hki publ. 48).

Our research is sufficiently "basic" to have won grants from the Academy of Finland and the European Union’s Framework Programmes and sufficiently "applied" to have earned grants from industry-driven TEKES and the Ministry of Agriculture and Forestry, so the term "strategic research" may best describe our work. Most postgraduates receive grants from one of the various foundations that operate within Finland. The animal breeding network, in which our animal breeding group participates, received a NOVA prize in 2009 for its active supply of high-quality courses for PhD students over many years. The SoilSoc (Soils and Society) Network, initiated by members of this RC, received the NOVA Prize in 2010. The Agricultural Technology PhD students have taken part, together with their counterparts from the Aalto University, in the field robot competition and in 2008 the team won the field robot world championship.

Comments on how the RC's scientific productivity and doctoral training should be evaluated (MAX. 2200 characters with spaces): In the assessment, the recent rapid, determined evolution of the formerly separate disciplines to form an integrated, multidisciplinary network should be acknowledged. In a remarkably short time the community has achieved cohesion and consistency to identify and address the research challenges, not with a partial approach, but with shared understanding of complexity and the need for multidisciplinarity.

Different disciplines have different impact factors. For crop scientists, agroecologists and soil scientists, the best primary research journals have impact factors around 3 (Theoretical and Applied Genetics 3.4, Agriculture, Ecosystems and Environment 3.2, Soil Biology and Biochemistry 3.0, Plant and Soil 2.6). For animal scientists and agricultural technologists, the figure is a little lower (Journal of Animal Science and Ambio, 2.5) and horticulturists, unless they are doing genetics, lower again. Most journals in the agricultural sciences have impact factors between 1 and 2. It is therefore inappropriate to measure our impact by the
standards of cell biologists (Cell 31, Plant Cell 9.3) or natural ecologists (Ecology Letters, 10.3). All of us aim to publish in the most appropriate, highest impact journals possible.

As many of our research topics are practical in nature, in addition to the evaluation of scientific articles, it is important to also evaluate the societal impact, the media visibility and the impact of the research for the local industry and practitioners. Following the recommendations of the previous evaluation, the number of articles as well as number of doctoral degrees has increased in several areas.

Leaders of the international agricultural universities and faculties would be likely to be fair and realistic in their evaluation of this RC. As this is the only Finnish faculty of agricultural science, we have no real national comparators, and our counterparts in MTT are also our collaborators on many projects, so would be in a position of conflict of interest if asked to evaluate this unit. We therefore suggest that Nordic, rather than Finnish, evaluators be used.
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<tr>
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INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC STAGE 2 MATERIAL

Name of the RC’s responsible person: Stoddard, Fred

E-mail of the RC’s responsible person:

Name and acronym of the participating RC: Science of Sustainable Agriculture, SSA

The RC’s research represents the following key focus area of UH: -- Select --

Comments for selecting/not selecting the key focus area: The SSA consortium comprises animal breeders and nutritionists, crop scientists, horticulturists, agroecologists, crop protection scientists, soil scientists, and agrotechnologists, all working toward sustainable production systems for food (including meat and dairy), feed, fibre and fuel. Our work thus includes "basic materials of the physical world", "basic structure of life", "changing environment" and "welfare and safety", but each of these also excludes some of us. In the context of the indispensability of agriculture for feeding the human population, the increasing numbers and demands of that population, the need to minimize negative environmental impacts of that agricultural production and maximize the positive ones, the importance of the rural economy in all countries except city-states, and the positive feedback loop where the high quality of national research leads to and strengthens from excellent international training and research collaborations, we believe that our discipline is distinctive, important, and deserving of its own key focus area.

1 FOCUS AND QUALITY OF RC’S RESEARCH (MAX. 8800 CHARACTERS WITH SPACES)

- Description of the RC’s research focus, the quality of the RC’s research (incl. key research questions and results) and the scientific significance of the RC’s research for the research field(s).

Arable agriculture uses 2 million ha in Finland and over 1500 million ha around the world. Extensive pastures add 3000 million ha worldwide. Increasing production is essential in order to feed the human population that is expected to exceed 9 billion in 2050, and to meet the predicted demands of that population for better quality food and for more meat along with natural fibres and bioenergy. Nevertheless, increasing production should not be allowed to lead to environmental damage that reduces the ability of future generations to feed themselves. Meeting these challenges by ecologically intensifying agriculture requires multidisciplinary activity. Finland's environment is exceptional: the growing season is short, days are long and daylength changes rapidly; soils are pedogenically young, non-calcareous, and cryic, often high in clay and organic matter, water-saturated for long periods, and freeze and thaw repeatedly.

Our research questions can be condensed into 3:

1. What is the impact of the environment on the organism or production system? We evaluate the effect of the environment on our plants and animals with physiological, biochemical, and molecular genetic methods, and with modelling tools. The environmental effects include stresses, such as crop water deficit or disease; nutrients, such as novel protein feeds for an animal; high latitude conditions, such as photoperiod impacts on flowering; and effects of climate change, soil modification, and revisions to animal housing on production systems.

2. What is the impact of the organism or production system on the environment? The organism or production system effect may be a change of cultivar, the introduction of a new species or cultivation practice, a new rotation cycle, a change in the usage of farm animals, or a new production technology. The evaluation methods are chemical, such as monitoring of greenhouse gas (GHG) releases, silicon
flows in the watershed, or nitrate leaching; and biological, by measuring microbial, animal or plant biodiversity.

3. How can the impact be modified or improved by altering the species or inputs to the production system, or modifying the genetic composition of the organism? This third question distinguishes us, as scientists working in sustainable agriculture, from basic scientists for whom the first two questions suffice. We test the modifications experimentally and with simulation models, leading to the development of new practices.

Crop and soil scientists work together on mobility and bioavailability of elements in different soils in different environments, and reclamation of contaminated soils. The elements in question include N, P, S, Fe, As, Pb, Cr, Cu, Se, and Si, all of which are important nutrients or pollutants. Crop species have been identified that will clean up heavy metal contamination of soil or respond favourably to sewage sludge as fertilizer and can then be used in the bioenergy chain. Another joint project investigates oxidation-reduction processes in acid sulphate soils in response to ground water level, and has shown that managing these soils with a high water table is suitable for production of reed canarygrass, an established energy crop. The soil scientists are interested in the sorption and desorption reactions between the solid soil matrix and substances added to soil or produced by soil processes, such as the use of biotite, a waste product from apatite mining, as an adsorbing agent for phosphate and heavy metals. Our access to agricultural soils in an extreme environment has provided exceptional data on the early stages of pedogenesis and related soil phenomena.

Sustainable energy cropping has been investigated since 2007 by a multidisciplinary team in SSA, along with economists. Input-output relationships for various cropping systems have been assessed, while novel crop choices (fibre hemp, forage maize, galega), mixtures, and management systems are being tested for productivity and environmental impact, and data are shared with the economists for policy development.

Crop adaptation to Finland’s long days and short growing season is important. Molecular aspects of the control of flowering of strawberry and of timothy, an important forage grass, to photoperiod and vernalization have been investigated by different teams and we have sought funding to do similar work on grain legumes.

A further focus is crop biodiversity and within that, the introduction of legume crops that can be produced without synthetic N fertilizer, thereby reducing greenhouse gas (GHG) emissions and nitrate leaching, adding diversity to crop rotations, enhancing soil structure, chemistry and microbiological diversity, and reducing reliance on intercontinentally imported soybean meal. We are testing some of these impacts in local conditions. Forages form a major part of the energy and protein source of dairy cows, so a change from grass-based silage to legume-supported silage enhances the sustainability and economic viability of milk production. The effects of red clover diets on protein utilization and fibre kinetics of dairy cows were presented in a recent PhD thesis, the effects on lipid metabolism and hence milk fatty acid composition are the focus of a current PhD project, and the next step is to test the use of home-grown grain legumes to replace soybean meal as a protein supplement.

The agroecologists examine the interaction between agricultural systems and the surrounding environment, including field margins, landscape patchworks, and farmland bird biodiversity. A new research area, leading to interactions with other parts of SSA, is the use of “biochar”, charcoal left from bioenergy processes, as a soil amendment. Integrated pest and disease management involves several disciplines.

Whole-genome data is used by horticulturists, seeking fundamental data that can be used for the improvement of rosaceous crops such as strawberry and raspberry, animal breeders, linking extensive phenotypic evaluation with chip-based gene expression data in the evaluation of dairy cattle, and plant
pathologists. Methods of association genetics are applied and breeding values predicted, allowing selection of A1 bulls at a younger age and leading to significant increases in milk and meat yields, while improving functional and health traits. These techniques will be extended to novel traits such as feed efficiency that are of interest to others in SSA, and gene expression studies on different diets link animal genetics to nutrition.

The agrotechnologists combine modelling and systems analysis with automated sensing and cutting-edge measurement techniques in order to answer questions on the use of natural resources, the conversions of energy, and the physical and chemical processes involved in agricultural production chains and environment. Precision livestock farming tools have been developed to allow automatic detection of animal health problems and automated behavioural measurements, and precision arable farming tools are in development to allow automated monitoring of crop environmental responses, along with farm-level decision making and management.

We publish in the leading journals of our field: ipso facto, our research has scientific impact. We hold senior positions on international organizations including Interbull, European Association of Animal Production, European Society for Agronomy, NJF (Nordic Association of Agricultural Scientists), ISTRO (International Soil Tillage Research Organization), and AEP (European Association for Grain Legume Research), are editors-in-chief of journals such as Arthropod-Plant Interactions, and members of journal advisory boards.

**Ways to strengthen the focus and improve the quality of the RC’s research.**

Since 1.1.2010, SSA has identified areas of collaboration that will allow us to concentrate on fewer issues, leading to better use of human, financial and technical resources, and with higher-impact outcomes. The bioenergy and biochar networks are good examples of an existing focus that has brought together experts from several disciplines, and a legume network is developing.

The quality will be improved as more basic scientists are persuaded to work on economically important crop, animal and technology questions. The progress on understanding of flowering is a good example of this, and basic physics has been used to devise novel models of crop growth. The outcomes of basic studies of environmental responses of grain legumes, for example, will lead to greater usage and hence more sustainable cropping systems.

Greater use of dynamic modelling will assist in many interdisciplinary ventures, such as preparing crops and production systems for climate change, and improve the environmental and economical efficiency of agriculture.

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### 2. Practises and quality of doctoral training (max. 8800 characters with spaces)

- **How is doctoral training organised in the RC?** Description of the RC’s principles for recruitment and selection of doctoral candidates, supervision of doctoral candidates, collaboration with faculties, departments/institutes, and potential graduate schools/doctoral programmes, good practises and quality assurance in doctoral training, and assuring good career perspectives for the doctoral candidates/fresh doctorates.

Recruitment and selection of doctoral candidates follows the faculty’s rules. Before qualification as PhD student, the student should have demonstrated a sufficiently high level of academic performance in his or her major subject (at least 3 on the 5-point scale) and Master’s thesis (minimum of non sine laude approbatur). Most candidates are internal, having earned their MSc within the same department of the University of Helsinki, and many international candidates use one of our English-language MSc programmes as a stepping-stone to PhD candidature. This ensures that the student and supervisor have
some familiarity with and confidence in each other before the onset of the major PhD activity. Well qualified international candidates arrive and provide very valuable fresh ideas.

There are two distinct patterns for recruitment of PhD candidates. In the minority of cases, the international pattern pertains, where funding for a project is achieved first, the position is advertised, candidates are interviewed and a suitable selection is made, so the student is “recruited”. In many cases, however, the student is selected and may even start the project before funding is obtained, and use of the word “recruitment” in this context seems not quite correct. This means that the student may work unfunded for some time at the start, or be without funding for some time in the middle of the project if the initial grant is for less than the full term. In the process, the students become much more skilled in writing grant proposals than their international counterparts might be, but the supervisors have also spent considerable time writing grant applications and letters of recommendation on behalf of their students. Furthermore, this system means that students at a comparable stage of work have vastly different working conditions and incomes, which is both fundamentally unfair and goes against the University's policy of equal treatment. While the Finns reading this document will know about this system, the international readers will not. Greater implementation of the international style would considerably enhance the possibilities for recruiting good students, and would be possible if a Doctoral Programme were funded.

Supervision of doctoral candidates also follows the faculty’s rules. Each student has a primary supervisor, up to three other supervisors, and a steering group of two other senior scientists who are expected to meet once a year with the student. The six senior scientists do not all have to come from the same department or even the same institution, and some are from external or international bodies. When the student is working at an external institution such as MTT (Agrifood Research Finland), at least one of the supervisors is based there.

Where other faculties or bodies have common interests, relevant expertise, or essential equipment, we seek joint work. Students interested in plant-bacterial interactions are supervised in crop sciences here and soil microbiology in Food and Environmental Sciences, and others interested in crop biochemistry are jointly supervised between the same two departments. Others are jointly supervised between the agrotechnology and animal sciences sections and the Faculty of Veterinary Medicine, and between the agroecology section and the Faculty of Biological and Environmental Sciences. We are currently co-supervising 6 students with MTT and 2 with SYKE (the Finnish Environment Institute), and 9 co-supervisions with MTT have been successfully completed. Half of the students who completed PhDs in animal science during 2005-2010 were jointly supervised with MTT.

No Doctoral Programme is based within the department, but some of our students are associated with doctoral programmes (formerly called graduate schools) based elsewhere. Two of the students in agroecology are associated with LUOVA (Finnish School in Wildlife Biology, Conservation and Management), one in horticulture is in FGSPB (Finnish Graduate School in Plant Biology), students with Professors Hartikainen and Alakukku participate in VALUE (Integrated Catchment and Water Resources Management), and 6 of us are registered supervisors in ANIWEL (Graduate School in Animal Welfare). The applied or strategic nature of many projects excludes most of our students from most ecological and biological doctoral programmes, and a Doctoral Programme in Sustainable Agriculture is desperately needed.

The doctoral thesis usually comprises 4 papers in internationally refereed journals together with an overarching literature review and general discussion. The monograph style of thesis is not encouraged as the international refereeing of the student’s science is a very valuable quality assurance step. Where one of the papers is in an exceptionally high-impact journal, a set of 3 is sometimes accepted. The thesis is pre-examined by two senior academics, one usually within the university and the other outside the
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Doctoral students have to complete a minimum of 60 credits of course work, of which 15 are general and 45 are field-specific. The University is a member of NOVA (The Nordic Forestry, Veterinary and Agricultural University Network), and thereby associated with BOVA, its Baltic partner. Almost all of us participate in the design and provision of courses presented by NOVA and/or BOVA, and the course proposals have to be approved by panels within the networks, so their quality is excellent. Many of the credits earned by our PhD students are for NOVA and NOVA-BOVA courses. Furthermore, we as academics participate in the teaching of these courses, refreshing our acquaintance with our counterparts in the other universities, exchanging research ideas and developing new collaborations. Almost all of the academics in SSA teach on a NOVA (-BOVA) course at least every other year.

Research seminars are organized on the basis of the old departments (Applied Biology, Animal Science and Agrotechnology in the Department of Agricultural Sciences, and soil sciences in the Department of Food and Environmental Sciences). This is an area in need of development. There are also journal clubs within most of the sections of the departments. As an example of good practice, for the last couple of years, the animal nutrition section has had a monthly “Article workshop” for postgraduates working at Viikki and MTT. Adobe Pro connections are used so that participation is possible through the internet and there is no need to travel. Participants from Viikki, Maaninka and Jokioinen have contributed to this workshop, from which the postgraduates can earn study credits.

Career prospects for newly completed PhDs in the agricultural sciences are excellent. Unemployment rates among PhDs in agricultural sciences are very low, and among the ~30 PhDs who have finished in the timeframe of this review, only 1 is known to be unemployed.

In addition to the funding described in section 7, SSA members have earned 2.10 million euros in stipends and 0.92 million euros in University of Helsinki funds.

**RC’s strengths and challenges related to the practises and quality of doctoral training, and the actions planned for their development.**

Our strengths include our multidisciplinary nature and breadth of coverage, making it possible to get questions answered within the consortium. Furthermore, our standing as the only tertiary provider of agricultural science in the country brings in first-class international collaborators. When students come from other faculties, their PhD has the more attractive title FT (=PhD) rather than MMT (Doctoral of Agriculture and Forestry).

Our major challenges are the uncertain funding of projects, too broad a remit, and the lack of a generally suitable Doctoral Programme that would provide targeted courses and some assured stipends. The high demand for our students paradoxically means that some are hired before they finish their thesis, delaying the completion of that important document.

Improving the focus, as described above, and a further attempt to establish a Doctoral Programme in the next round of Academy funding, are among our objectives for the near future.

**3 Societal impact of research and doctoral training (MAX. 4400 CHARACTERS WITH SPACES)**

- Description of how the RC interacts with and contributes to the society (collaboration with public, private and/or 3rd sector).

We participate in interviews for television, radio, newspapers, professional journals, and other magazines, as shown in the list of activities. We give frequent talks, and write chapters for farmer publications produced by ProAgria (the national farm advisory body) and articles for Maaseudun Tiede
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(Rural Science), a quarterly supplement in the newspaper Maaseudun Tulevaisuus. We get many telephone calls and emails in response. Growers, advisers, journalists and ministry representatives are invited to open days such as the Stakeholder’s Day in August 2010, where a wide range of experiments and exhibits was demonstrated, leading to many reports in the rural media.

We are on committees of the Ministry of Agriculture and Forestry (MMM) and the Ministry of the Environment, and are expert advisors for Parliament. We contributed to the development of the National Food Strategy during 2010, and make inputs to the national agri-environmental policy. We are on the steering groups of research projects including TEHO, a national project to minimize nutrient leaching from agriculture.

The Hyvä Sato (good harvest) project funded by the Kolli foundation involves most of SSA, along with six industrial partners, in 7 crop rotations. The decisions on crops, fertilizers and other inputs are organized and managed by the MSc students. Economic, technological and ecological inputs and outputs are measured, a prize is given each year for the best economic outcome, and the monthly report is among the most read items in the farm magazine Maatilan Pellervo.

Our activities contributed to the rapid increase of areas sown to grain legumes (up from 1600 ha in 2007 to 20 000 ha in 2010) and led to the introduction of a new crop, narrow-leafed lupin, in 2010.

We are part of the TEKES-funded, ProAgria-driven, CowCompass project, with MTT, Valio and TTS (Työtehoseura). The CowCompass is a decision-making programme for dairy farms that combines ration formulation, based on biological responses, with feed production and economics.

The Marjaohjelma (Berry programme), funded by MMM, involves us, the University of Eastern Finland, MTT, ProAgria, and growers. Results of basic research are used in applied research, and growers test the most promising practises. The flow of information includes articles in professional journals, reports on the internet, seminars, and field displays.

Results of the KARVA project on barn ventilation and animal welfare have been published on the internet, together with calculators that can be downloaded so farmers can improve conditions for their cattle, pigs or chickens.

In a project run by us together with the Finnish 4H Federation in 2008, young people sampled dung beetles on 134 Finnish cattle farms. Comparison of the samples with those obtained 12 years earlier demonstrated changes in the dung beetle fauna of Finland, and the Academy of Finland has funded a project to explore how these changes are reflected in ecosystem functioning.

Our members have comprised most of the executive committee of The Scientific Agricultural Society of Finland, including editing of its journal Agriculture and Food Science, and we are members of Finnish Agrotechnology Network, consisting of the agricultural machinery industry and related research institutes.

• Ways to strengthen the societal impact of the RC’s research and doctoral training.

One of our strengths is close collaboration with the industry. Many research projects are partly financed or even initiated by the stakeholders, which also ensures the rapid transfer of results to practise. Stakeholders are present on project steering committees, and many SSA members are experts on industry advisory committees and boards. Training of SSA members, or use of trained intermediaries, could make this collaboration with private industry even better.

Public outreach is one of our central activities, yet it does not earn us official credit as other activities, such as refereed journal articles, do. The departments have deputy heads for external relations. We would like to see a more prominent and systematized value given to these activities.
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Our activity in public discussion about current topical issues, such as the environmental impacts of agriculture, domestic animal welfare, and food safety or security, could be even greater. We could use the University’s media office to push our voice out instead of waiting for the questions to come to us.

Description of the RC’s research collaborations and joint doctoral training activities and how the RC has promoted researcher mobility.

As ours is the only Faculty of Agriculture in Finland, we are well placed to attract national and international collaborators. Our national collaborations involve MTT, VTT, ProAgria, Finnish Game and Fisheries Research Institute, and other Universities and polytechnics. Our international partners include many universities and research institutes.

We lead one current EU FP7 project (ForestSpecs, 2009-2012) and are partners in 2 others (Legume Futures: Legume-supported crop rotations for Europe, 2010-2013, and Catermass: Climate change adaptation tools for environmental risk mitigation of acid sulphate soils, 2010-2012), as well as in an InterReg project with Baltic partners (2007-2013), and an NKJ (The Nordic Joint Committee for Agricultural Research) project (Poseidon, “Persistent Effects of Subsoil Compaction on Soil Ecological Services and Functions”, 2009-2013). We were part of the Nordic Forage Network, funded by NKJ (2007-2010), and now belong to the Researcher Network in Comparative Lactation Biology (CoLact), funded by Nordforsk (2010-2013). Many of us are members of international consortia applying for further FP7, Marie Curie, NKJ and other international funds. We have participated in COST Actions and sought funding for others.

We led a pair of TEKES projects on the potential of wood bark extracts for plant protection (2003-2006 and 2006-2008). We have been partners in national collaborative projects funded by MMM, such as Selenium bioactivity (2006-2009) and MoniPalko on legumes (2009-2011).

Researcher mobility is given due consideration, and most professors recommend that an international stay forms part of the PhD project. Every PhD student gives either a poster or, preferably, a talk at an international conference sometime during their work. The opponent of the PhD dissertation is almost always international and gives a research seminar while in Helsinki.

Our participation in international courses run by NOVA(-BOVA) provides opportunities for researcher mobility, and we run or participate in NOVA networks such as Agroasis for Agroecology, SoilSoc for soils, NorPath for plant pathology, BeeNOVA for apiculture, and NORBE for biosystems engineering. Animal breeding, animal nutrition, crop sciences, and horticulture have similar but informal NOVA networks. Europe-wide networks include USAEE (University Studies of Agricultural Engineering in Europe) and its successor Erabee (Education & Research in Biosystems Engineering in Europe, 2008-2010).

The departments provide funds for conference and international research travel, as does the University, and the University provides money to bring international speakers to seminars or conferences. Erasmus exchanges, the EMPOL MSc programme (Erasmus Mundus Food of Life, http://www.emfoodoflife.eu/), and CIMO fellowships allow visits to and from abroad for research as well as teaching.

Our participation in the LUOVA, VALUE, FGSPB and ANI韦EL doctoral programmes provides opportunities for national collaborations and mobility, and the programmes support international as well as Finnish students.

Increasing numbers of our PhD students have come from other countries and thus exemplify international researcher mobility.
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- RC’s strengths and challenges related to research collaboration and researcher mobility, and the actions planned for their development.

As the only University involved in agricultural science in Finland, we are in a strong position to attract national and international collaboration. Our exceptional growing conditions, as mentioned at the start of section 1, are interesting for international networks investigating crop growth and quality, and the effects of that quality on the human or animal consumer. Our generally excellent research facilities are attractive to collaborators. Most of our members speak good English so communication with foreigners is easy.

Our location provides challenges. Finland is on the fringe of Europe. Viikki’s location in Helsinki makes it relatively easy to reach, but it is not altogether representative of national conditions. There are gaps in our facilities (see section 5, below). The Finnish reputation for being uncommunicative may deter some international collaborators. More of our material needs to be available in English. We could make better use of the Erasmus funds to develop international research collaborations.

5 OPERATIONAL CONDITIONS (MAX. 4400 CHARACTERS WITH SPACES)

- Description of the operational conditions in the RC’s research environment (e.g. research infrastructure, balance between research and teaching duties).

We have many excellent facilities. The 157 ha farm on the Viikki campus allows a great deal of fieldwork to be done on site, without the need for significant travel. On the other hand, the number of representative off-campus field sites operated by the university is small, and the machinery for managing experimental field plots is old. The renovated barn for 60 dairy cows, opened in 2008, has an impressive array of equipment for monitoring animals in intensive small- and medium-scale experiments. Our glasshouses allow control of temperature, humidity, daylength and lighting, and are hence heavily used. There is a heavily used set of growth cabinets. The laboratories have been renovated during the time in question, or are being renovated at present. We have developed some of the monitoring and measuring equipment and software ourselves. The campus has modern gene-sequencing and proteomics facilities. A major gap in the provision is the lack of a modern plant phenotyping platform to allow automated measurement of hundreds of plants such as mutant populations or germplasm collections. Linked with the expertise of individuals in their chosen plants, and the available genotyping infrastructure, such a platform will greatly accelerate the understanding of the physiology and genetics of stress resistance in the important crop species, leading to valuable breeding and management outcomes.

The Viikki Agricultural Production Laboratory (VAPL) is a work in progress. It includes the newly renovated barn and a yet-to-be-built agricultural field flux station for monitoring crop production and the environment. The field component is aimed at increasing the understanding of the interactions between the ecosystem of arable field, watercourses and the atmosphere, by measuring the processes responsible for GHG emissions and nutrient leaching, and by developing dynamic models for crop growth and environmental processes. The barn component measures animal welfare and emissions but the budget ran out before some of the equipment could be bought. These facilities have been designed to maximize interdisciplinary outcomes and, when completed, will proved a world-leading platform for integrated analysis of the production chain from input to crop to animal, and back as waste from animal (possibly through bioenergy recovery) to crop input. This will improve the collaboration within this consortium and the campus, and increase our attractiveness to external research partners.

Experiments on crops, livestock animals and agricultural soils last for several growing seasons and cannot be reproduced in a number of weeks, unlike many other biological experiments.
Pressure on academics’ time, to provide administration, teaching and research, is significant. The number of undergraduates per academic varies widely within SSA. The renovation and streamlining of the course portfolio, currently in progress, will allow academics more time for research.

There is strong competition for the use of the time of technical assistants, and some important tasks have gone undone or been assigned to PhD students when laboratory, field or barn assistants have not been available. We are now allowed to get help from staff of the Viikki farm for part of the fieldwork, which will help.

- **RC’s strengths and challenges related to operational conditions, and the actions planned for their development.**

  As indicated above, we have many excellent facilities that attract national and international collaborators, and these collaborations help to provide some of the facilities that are missing from our own repertoire.

  Granting bodies often lack reviewers with appropriate expertise to judge to our applications: the best journals in our fields of applied sciences are medium-impact, yet in the allocation of research funds, our publications are compared with those in high-impact journals that publish only basic science papers.

  Some infrastructure needs to be improved, including precision seeders and harvesters for plot-scale crop experiments, a wide range of equipment for the VAPL, and a new wing on the glasshouses for precision phenotyping of plants. Postdocs, employed on external grants, can assist with teaching and supervision of student projects (undergraduate and PhD). There needs to be some provision for academics to be bought out of other tasks during the lead-up to a major grant submission, such as an EU FP project that is a full-time job for many weeks.

- **Description of the execution and processes of leadership in the RC, how the management-related responsibilities and roles are distributed in the RC and how the leadership- and management-related processes support high quality research, collaboration between principal investigators and other researchers in the RC, the RC’s research focus and strengthening of the RC’s know-how.**

  Both of the departments involved in SSA have a deputy head for research. Most external grant applications require a letter of support from the head of department, which may be provided by the deputy head for research. Internal applications for student travel funds or conference costs are viewed and approved by a small panel of academics chaired by the deputy head for research. The deputy heads for research organized meetings about the key focus areas for research within the departments, where we also contributed to the Faculty’s focus areas.

  A balance has to be struck between individual academic freedom and cooperative projects. We have all used our academic freedom to pursue our individual research interests, and have involved our colleagues wherever possible or necessary. Until recently there have been fewer examples of designing research projects around the cooperation of several PIs. Wider cooperation is now being built, further boosted as new staff develop their research. Larger projects or multidisciplinary topics could have high impact or visibility in the scientific forum, and their development is encouraged within SSA.

  The student-centred nature of the planning of most PhD projects sometimes allows the student to drift, as the student follows a tangential study rather than being directed to fit into the broader existing programme. The management culture here allows more drift than is allowed in Canada, the UK and Australia, for example. We seek a balance in order that the student is actively helped to become an independent researcher, rather than being directed into dependence or allowed to drift indefinitely.
Collaboration between PIs and other investigators within SSA is normally friendly and open, and so is collaboration with partners in other disciplines. On the whole, sharing of knowledge and methods works well. This is shown by the development of the bioenergy and biochar networks discussed above.

Technical know-how within SSA is increased particularly following international visits, and the best examples are from PhD students returning from their overseas work. Incoming postdocs also bring valuable new techniques in their repertoire. Efficiency increases when PIs learn from courses on personnel, time and project management. Several new PIs and postdocs have been hired during the survey interval, many from abroad or following an international stay, bringing new techniques and other ideas with them.

- **RC’s strengths and challenges related to leadership and management, and the actions planned for developing the processes.**
  
  We are located on one campus, so communication is easy.

  Neither of the deputy heads for research is in SSA. Both have a full load of academic duties and their own remits to pursue. The establishment of a Doctoral Programme would provide a research coordinator who could engineer links between research groups, encourage integration of projects into larger programmes, monitor PhD student progress, and develop guidelines for bringing new projects into SSA.

  Financial management of research projects has increasingly shifted to the PIs, rather than remaining in the hands of support staff, taking time from research. The problem was severe during 2010, when several support staff were replaced, and there is incomplete information about the funds in many research grants.

  Most PIs would benefit from management training, and from learning new techniques by participating in overseas exchanges (sabbaticals). Both of these objectives could be met with little financial outlay if timetables could be arranged so each person had little or no teaching in one of the four annual teaching periods.

### 7 EXTERNAL COMPETITIVE FUNDING OF THE RC

- **Listing of the RCs external competitive funding, where:**
  - the funding decisions have been made during 1.1.2005-31.12.2010, and
  - the administrator of the funding is/has been the University of Helsinki

- **Academy of Finland (AF) - total amount of funding (in euros) AF has decided to allocate to the RC members during 1.1.2005-31.12.2010: 7450000**

- **Finnish Funding Agency for Technology and Innovation (TEKES) - total amount of funding (in euros) TEKES has decided to allocate to the RC members during 1.1.2005-31.12.2010: 2620000**

- **European Union (EU) - total amount of funding (in euros) EU has decided to allocate to the RC members during 1.1.2005-31.12.2010: 1010000**

- **European Research Council (ERC) - total amount of funding (in euros) ERC has decided to allocate to the RC members during 1.1.2005-31.12.2010: 7**
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- **International and national foundations** - names of international and national foundations which have decided to allocate funding to the RC members during 1.1.2005-31.12.2010, and the amount of their funding (in euros).
  - names of the foundations: Agronomiliitto, Finnish Association of Academic Agronomists
  - August Johannes ja Aino Tiuran maatalouden tutkimussäätiö
  - Borisoffin puutarhasäätiö
  - Carl Cedercreutz scholarship fund
  - EKOKEM
  - Ella och Georg Ehrnrooths Stiftelse
  - Emil Aaltosen säätiö
  - Fortumin säätiö
  - Helsingin kaupungin tiedesäätiö
  - Helsingin yliopiston tiedesäätiö
  - Jenny ja Antti Wihurin säätiö
  - Kemiran tutkimussäätiö
  - K.H. Renlundiin Säätiö
  - Koneen Säätiö
  - Kylvösiemensäätiö
  - Laidunyhdistys
  - Maa- ja metsätalousottajain keskusliitto, The Central Union of Agricultural Producers and Forest Owners
  - Maa- ja vesitekniikan tuki ry
  - Maatalouskoneiden tutkimussäätiö
  - Maju ja Yrjö Rikalainen Puutarhasäätiö
  - Maj ja Tor Nesslingin säätiö
  - Marjatta ja Eino Kollin säätiö
  - Niemi-säätiö
  - Oiva Kuusisto säätiö
  - OLVI-säätiö
  - Raisio Oy:n Tutkimussäätiö
  - Salaajituksen tuki säätiö
  - Suomalainen Konkordia-liitto
  - Suomen kotelainjalostusosk ja keinosiemennysosk
  - Suomen Kulttuurirahasto, The Finnish Cultural Foundation
  - Suomen Naudanjalostussäätiö
  - Suoviljely-yhdistys
  - total amount of funding (in euros) from the above-mentioned foundations: **1820000**

- **Other international funding** - names of other international funding organizations which have decided to allocate funding to the RC members during 1.1.2005-31.12.2010, and the amount of their funding (in euros).
  - names of the funding organizations: Central Baltic Interreg IVA
  - Lounais-Suomen ympäristökeskus
  - NordForsk
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC STAGE 2 MATERIAL

- NOVA
- The Nordic Joint Committee for Agricultural Research (NKU) via Ministry of Agriculture and Forestry
- Swedish University of Agricultural Sciences SLU
- total amount of funding (in euros) from the above-mentioned funding organizations: 2100000

- Other national funding (incl. EVO funding and Ministry of Education and Culture funded doctoral programme positions) > names of other national funding organizations which have decided to allocate funding to the RC members during 1.1.2005-31.12.2010, and the amount of their funding (in euros).
  - names of the funding organizations: Berner
  - CIMO
  - Elixioil
  - Habitec Oyj
  - Helsingin kaupungin Innovaatiorahasto
  - Honkajoki Oy
  - Huoltovarmuuskeskus
  - Kemira Oy
  - Kemira GrowHow Oyj
  - Manner-Suomen maaseudun kehittämisohjelma 2007 - 2013
  - Mela
  - Ministry of Agriculture and Forestry
  - Ministry of Education
  - Nylands Svenska Lantbruksällskapet
  - ProAgria Etelä-Savo
  - Raisio Yhtymä Oyj
  - Rehuraisio Oy
  - RKTL
  - Ruukki Oyj
  - Taimistovaljljät ry
  - UPM
  - Valio Oy
  - VTT
  - WK Agro Oy
  - Yara Suomi Oyj
  - total amount of funding (in euros) from the above-mentioned funding organizations: 7970000

| RC’S STRATEGIC ACTION PLAN FOR 2011–2013 (MAX. 4400 CHARACTERS WITH SPACES) |

- Description of the RC’s future perspectives in respect to research and doctoral training.

  The core of SSA was formed on 1.1.2010, with the formation of the Department of Agricultural Sciences from 3 previous departments. While it has always been possible to collaborate across departmental boundaries, the removal of such boundaries removed bureaucratic impediments, and new research alliances developed. Much of our research up to 2009 was hence discipline-specific, and some of the new teams that have submitted research-grant applications but have not yet produced joint
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC STAGE 2 MATERIAL

publications. SSA also includes the environmental soil science section of the Department of Food and Environmental Sciences, which has long-standing interactions with other groups including crop sciences and agrotechnology. The Viikki research farm was integrated into the RC from 1.1.2010, allowing better access to farm resources for many areas of research.

The research focus areas of the two departments that are relevant to SSA are

- From genomes to practice
- Energy efficiency in agricultural and horticultural production
- Well-being of animals and people
- Fields and water systems
- Overall management of plant protection
- Vital soil and clean environment

As a young consortium, this RC needs a lot of development.

We have a lot of work to do to improve the integration of the broad base of research in this consortium.

We aim to reduce the gap between “basic” and “applied” research by closer interactions between groups and by continuing to seek research funds to support projects that break that link, such as the examples given in section 1 and 5.

We will seek to strengthen the expertise and resources of SSA in several ways.

1: A Doctoral Programme and a Centre of Excellence. A Doctoral Programme provides funding for studentships, thereby avoiding at least part of the current problem of uncertain funding for PhD students. A Centre of Excellence provides funding for postdocs who will bring in new expertise, do their own research, and contribute to the supervision of PhD and MSc students. Either or both of these will help with research coordination, as outlined in section 6.

2: Gaps and needs in personnel. These exist in administrative, laboratory (discussed in section 5) and statistical support. While the senior staff have considerable expertise in statistics, a fully qualified statistician familiar with the most up-to-date methods will allow us to extract more meaning from our datasets.

3: Infrastructure. Major funding will be sought to implement the VAPL field lab, to finish equipping the research barn, to upgrade the field plot seeders and harvesters, and to develop a plant phenotyping platform. We will develop the Research Farm to be a core tool for our research, which it has not been in recent years because much of the area and other resources have not been available for science. Greater usage and focus on this resource could help to bring the RC together to produce more interdisciplinary high-impact papers.

4: Time resource. The teaching portfolios of the departments have been extensively revised, in order to take full advantage of the possibilities for reduction of duplication. This is intended to liberate some time for academics to devote to their research. The reconstitution of the departments was conducted without additional financial resources from the University, so the integration of research effort has been conducted voluntarily. It will be valuable for many of us, if we can arrange our teaching calendars to allow for one period to have minimal teaching, and then we can produce more papers, grant applications and other research outputs, and arrange for short-term study leave abroad and other training (section 6).

Funding bodies favourably mention “interdisciplinary” research but seldom fund it, the feedback often being that the plan is too ambitious. We will engage with the decision makers of the funding bodies in
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC STAGE 2 MATERIAL

order to understand their intentions better, so we can more successfully tailor our applications, and in order to persuade them to use international experts of the field to review our applications.

This document was written by Dozent Fred Stoddard (Crop Sciences section, Department of Agricultural Sciences), using material provided by his colleagues, professors Jukka Ahokas, Laura Alakukku, Helinä Hartikainen, Juha Helenius, Heikki Hokkanen, Jarmo Juga, Pirjo Mäkelä, Märtti Nasi, Aila Vanhatalo, Markku Yli-Halla, and Jari Valkonen;

university lecturers Kari Elo, Mikko Hautala, Timo Hytönen, Seija Jaakkola, Tuomo Kokkonen, Hanna-Riitta Kymäläinen, Leena Linden, Pauliina Palonen, Matti Pastell, Tomas Roslin, Mervi Seppänen, Mikko J Sillanpää, Asko Simojoki, and Marjatta Saisa;

and senior researchers Iryna Herzon, Risto Kuisma, Arja Santanen, and Petra Tallberg, following a meeting held at the end of January 2011. Drafts were sent to all persons on this list for comment. Staff sent their financial summaries to Ms Sari Kärkkäinen for compilation.
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

1 Analysis of publications


<table>
<thead>
<tr>
<th>Publication type</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>Total Count 2005 - 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 Refereed journal article</td>
<td>68</td>
<td>52</td>
<td>50</td>
<td>79</td>
<td>69</td>
<td>62</td>
<td>380</td>
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<tr>
<td>A2 Review in scientific journal</td>
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<td>1</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>15</td>
<td></td>
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<tr>
<td>A3 Contribution to book/other compilations (refereed)</td>
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<td>49</td>
<td>13</td>
<td>42</td>
<td>8</td>
<td>2</td>
<td>129</td>
</tr>
<tr>
<td>A4 Article in conference publication (refereed)</td>
<td>12</td>
<td>32</td>
<td>28</td>
<td>26</td>
<td>28</td>
<td>24</td>
<td>150</td>
</tr>
<tr>
<td>B1 Unrefereed journal article</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>8</td>
<td>1</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>B2 Contribution to book/other compilations (non-refereed)</td>
<td>5</td>
<td>1</td>
<td>20</td>
<td>3</td>
<td>2</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>B3 Unrefereed article in conference proceedings</td>
<td>5</td>
<td>13</td>
<td>5</td>
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<td>4</td>
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<tr>
<td>C2 Edited book, compilation, conference proceeding or special issue of journal</td>
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<td>6</td>
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<td>2</td>
<td>2</td>
<td>14</td>
<td></td>
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<tr>
<td>D1 Article in professional journal</td>
<td>10</td>
<td>13</td>
<td>11</td>
<td>14</td>
<td>13</td>
<td>18</td>
<td>79</td>
</tr>
<tr>
<td>D2 Article in professional hand or guide book or in a professional data system, or test book material</td>
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<td>1</td>
<td>3</td>
<td>10</td>
<td>11</td>
<td>26</td>
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</tr>
<tr>
<td>D3 Article in professional conference proceedings</td>
<td>5</td>
<td>4</td>
<td>8</td>
<td>4</td>
<td>6</td>
<td>17</td>
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<tr>
<td>D5 Text book or professional handbook or guidebook or dictionary</td>
<td>1</td>
<td>1</td>
<td>1</td>
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</tbody>
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## SSA/Stoddard

**INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI**

**RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010**

<table>
<thead>
<tr>
<th>Publication type</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>Total Count 2005 - 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1 Popular article, newspaper article</td>
<td>20</td>
<td>18</td>
<td>43</td>
<td>25</td>
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<td>146</td>
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<td>E1 Popular contribution to book/other compilations</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>E2 Popular monograph</td>
<td></td>
<td></td>
<td>3</td>
<td>1</td>
<td>4</td>
<td></td>
<td></td>
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<tr>
<td>T1 Audiovisual materials</td>
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<td></td>
<td></td>
<td>1</td>
<td>1</td>
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</tbody>
</table>
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

SSA/Stoddard

2 Listing of publications

A1 Refereed journal article

2005


Bärlund, I, Tatti, S, Yli-Halla, M, Åström, M. 'Measured and simulated effects of sophisticated drainage techniques on groundwater level and runoff hydrochemistry in areas of boreal acid sulphate soils', Agricultural and Food Science, vol 14, no. 1, pp. 98-111.


Gippenberg, S, Roslin, T. 'Host plants as islands: resource quality and spatial setting as determinants of insect distribution', Annales Zoologici Fennici, vol 42, no. 4, pp. 335-345.


INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

SSA/Stoddard


Lennonfors, B, Savenkov, EI, Mikuška, B, Valkonen, J 2005, 'Sequence divergence of four soilborne sugarbeet-infecting viruses', Virus Genes, vol 31, pp. 57-64.


Martínez, V, Thorgaard, G, Robison, B, Sillanpää, MJ 2005, 'An application of Bayesian QTL mapping to early development in double haploid lines of rainbow trout including environmental effects', Genetical Research, vol 86, pp. 209-221.


Gasbarra, D, Sillanpää, MU 2006, 'Constructing the parental linkage phase and the genetic map over distances <1 cM using pooled haploid DNA', Genetica, vol 172, pp. 1325-1335.


Holm, F, Sillanpää, M 2006, 'Bayesian mapping of genotype x expression interactions in quantitative and qualitative traits', Hereditas, vol 97, pp. 4-18.


Karhu, ST, Hytönen, T 2006, 'Nursery plant production controlled by prohexadione-calcium and mechanical treatments in strawberry cv. 'Honeyeye'' The journal of horticultural science and biotechnology, vol 81, no. 6, pp. 937-942.

Keinänen, L, Palonen, P, Linden, A, Lindén, JO 2006, 'Flower bud cold hardness of 'Muskoka' red raspberry as related to water content in late winter', International journal of fruit science, vol 6, no. 1, pp. 63-76.


INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

SSA/Stoddard


Germundsson, A, Savchenko, EI, Ala-Pohjola, M, Valkonen, JPT, Valkonen, J 2007, 'VPg of Potato virus A alone does not suppress RNA silencing but affects virulence of a heterologous virus', *Virus Genes*, vol 34, pp. 387-399.


Rappe, E, Topo, P 2007, "Contact to outdoors greenery can support competence among people with dementia", Journal of Housing for the Elderly, vol 21, no. 3/4, pp. 229-248.


INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

SSA/Stoddard


2008


INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

SSA/Stoddard


Tuomisto, HL, Helenius, J  2008, 'Comparison of energy and greenhouse gas balances of biogas with other transport biofuel options based on domestic agricultural biomass in Finland', Agricultural and Food Science, vol 17, no. 3, pp. 240-251.


Wang, QC, Valkonen, J  2008, 'Elimination of two viruses which interact synergistically from sweetpotato by shoot tip culture and cryotherapy', Journal of Virological Methods, vol 154, no. 1/2, pp. 135-140.


2009


Mäkelä, P, Kousa, M 2009, 'Seed production of two meadow fescue cultivars differing in growth habit', Agricultural and Food Science, vol 18, no. 1, pp. 91-95.


Rasmell, JNE, Bouton, ML, Martin, DP, Valkonen, JPT, Kvarnheden, A, Valkonen, J 2009, 'Studies on the host range of the barley strain of wheat dwarf virus using an agrinfectious viral clone', Plant Pathology, vol 58, no. 6, pp. 1161-1169.


SSA/Stoddard


2010


Djajuangaran, M, Prasad, PRR, Seppanen, M 2010, ‘Selenium protects sorghum leaves from oxidative damage under high temperature stress by enhancing antioxidant defense system’, Plant Physiology and Biochemistry, vol 48, no. 12, pp. 999-1007.

INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

SSA/Stoddard


Laaksoranta, T, Rapp, E 2010, 'Children’s Relationship to Plants among Primary School Children in Finland: Comparisons by Location and Gender', *HortTechnology*, vol 20, no. 4, pp. 689-695.


Palander, S, Sasi, M, Palander, P 2010, 'Digestibility and energy value of cereal-based diets in relation to digesta viscosity and retention time in turkeys and chickens at different ages estimated with different markers', *Archives of Animal Nutrition*, vol 64, pp. 238-253.


A2 Review in scientific journal

2005

2006

2008


2009


2010


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RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

SSA/Stoddard


A3 Contribution to book/other compilations (refereed)

2005


2006


Bäck, J, Nikinmaa, E, Simojoki, A, "Carbon and nitrogen metabolism and senescence", in P Hari, L Kulmala (eds), Boreal forest and climate change, Advances in global change research, no. 34, Springer, pp. 111-117.

Pirhonen, M, Rantala, L, Somervuo, P, Söderholm, H, Valkonen, J, "Tuotekehityksessä ja tutkimuksessa tarvittavien proteiinien Protokollastaan ja protokollastaan", in P Hari, L Kulmala (eds), Boreal forest and climate change, Advances in global change research, no. 34, Springer, pp. 433-461.

INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

SSA/Stoddard


Sorbents. properties, materials and applications., Nova Science Publishers, cop., Hauppauge NY.

Scotts Valley, California, Methods of Microarray Data Analysis VI, CreateSpace Publishing,


2006


Chen, W, Baldwin, TC, Stoddard, F. 2006. 'Stigma and style traits co-segregating with autofertility', in International workshop on faba bean breeding and agronomy, Cordoba (Spain), 25-27 October, 2006, pp. 53-55.


Hokkanen, H. 2006. 'Integrating insect pathogens into oilseed rape cropping systems', in International symposium on integrated pest management in oilseed rape, 3rd-5th April 2006, Paulinerkirche, Göttingen, pp. [ ].
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

SSA/Stoddard


Khan, HR, Stoddard, F 2006, 'Investigation of physiological traits related to drought tolerance in faba bean (Vicia faba L.)', in International workshop on faba bean breeding and agronomy, Cordoba (Spain), 25-27 October, 2006, pp. 48.


INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

SSA/Stoddard


2009


Hokkanen, H, Mänttäri-Hokkanen, I 2009, Successful use of honey bees for grey mould biocontrol on strawberries and raspberries in Finland.


2010

Alakukku, L, Turtola, E. 2010, ‘Surface runoff and soil physical properties as affected by subsurface drainage improvement of a heavy clay soil’, in XVIIth World Congress of the International Commission of Agricultural Engineering (CIGR) : Sustainable Biosystems Through Engineering.


Stoddard, F 2010, 'Improving food and feed security in the Nordic and Baltic region by using appropriate crop rotations', in Risks in agriculture: environmental and economic consequences, pp. 311-316.


B1 Unrefered journal article

2005


INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

SSA/Stoddard


2006

2007


2008


2009


B2 Contribution to book/other compilations (non-refereed)

2006


INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILED DATA 2005-2010

SSA/Stoddard


Hölttö, M, Schultman, L, Linden, L, Rönn, H 2010, 'Agri-environmental programme in Finland serving biodiversity: working forward.', in Ag-Environment Schemes – What Have They Achieved and Where Do We Go From Here? - In conjunction with the British Ecology Society Agricultural Ecology Group, University of Leicester, Oadby, UK, 27-29 April 2010, pp. 261-269


RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

SSA/Stoddard


C1 Published scientific monograph

2005
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

SSA/Stoddard


2005


2006


2007

INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

SSA/Stoddard

2008


2009


Seppälä, M (ed.) 2008, Peltokasvien tuotanto, Opetushallitus, Helsininki.

2008


D1 Article in professional journal

2005


2006


INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

SSA/Stoddard

2009


INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010


INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

D3 Article in professional conference proceedings

2008


2009


2010
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

SSA/Stoddard


D4 Published development or research report

2007

2008

2009

D5 Text book or professional handbook or guidebook or dictionary

2007

2008

2009
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

SSA/Stoddard

E1 Popular article, newspaper article

2005
2006
Helenius, J 2006, 'Energiaa syksyyn', Puutarha & kauppa, vol 10, no. 37, pp. [68].
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

SSA/Stoddard


2010
SSA/Stoddard


E1 Popular contribution to book/other compilations

2005


2007

2009

E2 Popular monograph
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

SSA/Stoddard

2008

2010

11 Audiovisual materials

2007
Puutarhakasvien tajuntumus: Puutarhakasvien opiskelija tukea Open Access -verkkomateriaali

2010
Marijen harmaahomeen torjunta biologisesti mehiläisten avulla, luomu.fi-verkkipalvelu
1 Analysis of activities 2005-2010

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<thead>
<tr>
<th>Activity type</th>
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<tbody>
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<td>Supervisor or co-supervisor of doctoral thesis</td>
<td>136</td>
</tr>
<tr>
<td>Prizes and awards</td>
<td>17</td>
</tr>
<tr>
<td>Editor of research journal</td>
<td>88</td>
</tr>
<tr>
<td>Editor of research anthology/collection/conference proceedings</td>
<td>3</td>
</tr>
<tr>
<td>Peer review of manuscripts</td>
<td>227</td>
</tr>
<tr>
<td>Editor of series</td>
<td>4</td>
</tr>
<tr>
<td>Editor of special theme number</td>
<td>7</td>
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<tr>
<td>Assessment of candidates for academic posts</td>
<td>17</td>
</tr>
<tr>
<td>Membership or other role in review committee</td>
<td>37</td>
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<tr>
<td>Membership or other role in research network</td>
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<tr>
<td>Membership or other role in national/international committee, council, board</td>
<td>128</td>
</tr>
<tr>
<td>Membership or other role in public Finnish or international organization</td>
<td>45</td>
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<tr>
<td>Membership or other role of body in private company/organisation</td>
<td>18</td>
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<tr>
<td>Other tasks of an expert in private sector</td>
<td>2</td>
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<tr>
<td>Participation in interview for written media</td>
<td>94</td>
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<tr>
<td>Participation in radio programme</td>
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## SSA/Stoddard

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<td>Participation in TV programme</td>
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<tr>
<td>Participation in interview for web based media</td>
<td>6</td>
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INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

SSA/Stoddard

2 Listing of activities 2005-2010

Supervisor or co-supervisor of doctoral thesis

Laura Alakukku,
- Väitöskirjan ohjaus, Laura Alakukku, 2004 → ...
- Väitöskirjan ohjaus, Laura Alakukku, 2007 → ...
- Väitöskirjan ohjaus, Laura Alakukku, 2008 → ...
- Väitöskirjan ohjaus, Laura Alakukku, 2009 → ...
- Väitöskirjan ohjaus, Laura Alakukku, 2009 → ...
- Väitöskirjan ohjaus, Laura Alakukku, 2010 → ...

Helinä Hartikainen,
- Supervisor of doctoral thesis of Tommi Peltovuori, Helinä Hartikainen, 2000
- Supervisor of doctoral thesis of Arja Valtanen, Helinä Hartikainen, 2005 → 2010, Germany
- Supervisor of doctoral thesis of Inka Reijonen, Helinä Hartikainen, 2010 → 2013
- Supervisor of doctoral thesis of Nader Yaghi, Helinä Hartikainen, 2010 → 2013

Mikko Hautala,
- Ohjaaja: Physical characterization of plastic surfaces in wearing and cleanability research, Mikko Hautala, 2003 → 2006
- Ohjaaja: Development of wireless information transmission system in soil, Mikko Hautala, 2005 → 2008

Juha Helenius,
- Supervised PhD Thesis, Juha Helenius, 2004 → ...
- Supervision of Academic Dissertation, Juha Helenius, 24.02.2007
- Supervision of Doctoral Thesis, Juha Helenius, 27.06.2010
- Supervision of Doctoral Thesis, Juha Helenius, 28.05.2010

Iryna Herzon,
- Supervision of doctoral thesis, Iryna Herzon, 2006 → 2010, Finland
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

SSA/Stoddard

Timo Hytönen,
PhD thesis supervision, Timo Hytönen, 2009 → 2013

Seija Jaakkola,
Thesis supervision / Merja Manninen, Seija Jaakkola, 2007
Thesis supervision / Eeva Saaristalo, Seija Jaakkola, 2008 → ...
Thesis supervision / Arto Huuskonen, Seija Jaakkola, 2009
Thesis supervision / Katarina Manni, Seija Jaakkola, 2010 → ...
Thesis supervision / Majku Pesonen, Seija Jaakkola, 2010 → ...
Thesis supervision / Susanna Särkijärvi, Seija Jaakkola, 2010 → ...
Thesis supervision / Veera Hakala, Seija Jaakkola, 2010 → ...

Jarmo Juga,
Väitöstutkimuksen ohjaus, Jarmo Juga, 2009 → ..., Finland
Väitöstutkimuksen ohjaus, Jarmo Juga, 2009 → ..., Finland
Väitöstutkimuksen ohjaus ohjaus, Jarmo Juga, 2010 → ..., Finland

Tuomo Kokkonen,
Thesis supervision / Marja Mikkola, Tuomo Kokkonen, 2006 → ..., Finland
Thesis supervision / Siru Salin, Tuomo Kokkonen, 2008 → ..., Finland
Thesis supervision / Vera Hakala, Tuomo Kokkonen, 2009 → ..., Finland

Risto Kuisma,
Osallistuminen väitöskirjatyön ohjaamiseen, Risto Kuisma, 2005, Finland
Osallistuminen väitöskirjatyön ohjaamiseen, Risto Kuisma, 2006, Finland

Hanna-Riitta Kymäläinen,
Osallistuminen väitöskirjatyön ohjaamiseen, Hanna-Riitta Kymäläinen, 2005 → ..., Finland
Osallistuminen väitöskirjatyön ohjaamiseen, Hanna-Riitta Kymäläinen, 2006 → ..., Finland
Osallistuminen väitöskirjatyön ohjaamiseen, Hanna-Riitta Kymäläinen, 2006 → ..., Finland
Osallistuminen väitöskirjatyön ohjaamiseen, Hanna-Riitta Kymäläinen, 2007 → ..., Finland
Osallistuminen väitöskirjatyön ohjaamiseen, Hanna-Riitta Kymäläinen, 2007 → 2011, Finland
Osallistuminen väitöskirjatyön ohjaamiseen, Hanna-Riitta Kymäläinen, 2009 → 2011, Finland

Leena Linden,
Väitöskirjan ohjaus, Leena Linden, 2006 → 2012
Väitöskirjan ohjaus, Leena Linden, 2009 → 2013
Väitöskirjan ohjaus, Leena Linden, 2010 → 2014

Pirjo Mäkelä,
Doctoral thesis supervision/Helkki Laurila, Pirjo Mäkelä, 2000 → 2011
Doctoral thesis supervision/Antti Tuulos, Pirjo Mäkelä, 2009 → 2012
Doctoral thesis supervision/Mahmoud Seleiman, Pirjo Mäkelä, 2009 → 2012
Doctoral thesis supervision/Petra Manninen, Pirjo Mäkelä, 2009 → 2012
Doctoral thesis supervision/Clara Lizanazo Torres, Pirjo Mäkelä, 2010 → 2013
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SSA/Stoddard

Doctoral thesis supervision/Epie Kenedy, Pirjo Mäkelä, 2010 → 2013
Doctoral thesis supervision/Ling Zou, Pirjo Mäkelä, 2010 → 2013
Doctoral thesis supervision/Print Tammeorg, Pirjo Mäkelä, 2010 → 2013

Pauliina Palonen,
Väitöskirjatyön ohjaaminen, Pauliina Palonen, 2008 → 2012
Väitöskirjatyön ohjaaminen, Pauliina Palonen, 2009 → 2012

Tomas Roslin,
Graduate student supervisor, Sofia Gripenberg, Tomas Roslin, 2003 → 2007, Finland
Graduate student supervisor, Ayco Tack, Tomas Roslin, 2005 → 2010, Finland
Graduate student supervisor, Rikka Kaartinen, Tomas Roslin, 2006 → …, Finland
Graduate student co-supervisor, Matti Landvik, Tomas Roslin, 2010 → …, Finland
Graduate student co-supervisor, Sivija Budaviciute, Tomas Roslin, 2010 → …

Arja Santanen,
Thesis supervision: Mahmoud Seleiman, Arja Santanen, 2009 → 2012, Finland
Thesis supervision: Petra Egilmez, Arja Santanen, 2009 → 2012, Finland
Thesis supervision: Clara Lizarazo, Arja Santanen, 2010 → …, Finland
Thesis supervision: Kenedy Eton Epie, Arja Santanen, 2010 → …, Finland

Mervi Seppänen,
Tohtorinkoulutus, Mervi Seppänen, 01.01.2006 → 31.12.2012, Finland
Tohtorinkoulutus, Mervi Seppänen, 04.05.2007
Tohtorinkoulutus, Mervi Seppänen, 22.05.2007 → 31.12.2012
Tohtorinkoulutus, Mervi Seppänen, 01.01.2010 → 31.12.2013

Mikko Sillanpää,
PhD Supervisor of Matti Pirinen, Mikko Sillanpää, 2005 → 2009, Finland
PhD Supervisor of Pinja Pikkukhoikana, Mikko Sillanpää, 2006 → …, Finland
PhD Supervisor of Timo Knurr, Mikko Sillanpää, 2006 → …, Finland
PhD Supervisor of Hanni Kärkkäinen, Mikko Sillanpää, 2008 → …, Finland
PhD Supervisor of Mahlako Maligahela, Mikko Sillanpää, 2009 → …, Finland
PhD Supervisor of Zitong Li, Mikko Sillanpää, 2009 → …, Finland
Supervisor of the PhD thesis, Department of Mathematics and Statistics, UH, Mikko Sillanpää, 06.2009, Finland

Asko Simojoki,
Supervision of a doctoral thesis: Priti Tammeorg, Asko Simojoki, 2010 → …

Fred Stoddard,
Thesis supervision: Hamid Khazaee, Fred Stoddard, 01.09.2009 → 31.08.2013, Finland
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SSA/Stoddard

Thesis supervision: Epie Kenedy, Fred Stoddard, 01.01.2010 → 31.12.2013, Finland

Petra Tallberg

Ph.D. supervision/Maria Lehtimäki, Petra Tallberg, 01.04.2009 → ..., Finland
Ph.D. supervision/Virpi Sipola, Petra Tallberg, 01.03.2009 → ..., Finland

Jari Valkonen

Supervision of doctoral thesis, Jari Valkonen, 01.01.2006 → 31.01.2005, Norway
Supervision of doctoral thesis, Jari Valkonen, 01.01.2007 → 31.12.2007, Finland
Supervision of doctoral thesis, Jari Valkonen, 01.01.2007 → 31.12.2007, Finland
Supervision of doctoral thesis, Jari Valkonen, 01.01.2007 → 30.11.2007, Finland

Aila Vanhatalo

Thesis supervision / Helena Hepola, Aila Vanhatalo, 01.08.2004 → 18.04.2008
Thesis supervision, Aila Vanhatalo, 24.08.2005 → 17.09.2010
Thesis supervision / Arto Huuskonen, Aila Vanhatalo, 05.25.06.2009
Thesis supervision / Tomasz Stefanowski, Aila Vanhatalo, 29.11.2006 → ...
Thesis supervision / Anne Honkanen, Aila Vanhatalo, 02.02.2007 → ..., Finland
Thesis supervision, Aila Vanhatalo, 01.01.2008 → ..., Finland
Thesis supervision / Piia Kaarinan, Aila Vanhatalo, 26.09.2008 → ...
Thesis supervision / Katarina Manni, Aila Vanhatalo, 2010 → ...
Thesis supervision / Maiju Pesonen, Aila Vanhatalo, 2010 → ...

Markku Yli-Halla

Supervision of a Doctoral Dissertation (University of Haramaya, Ethiopia), Markku Yli-Halla, 11.2010 → ..., Ethiopia

Prizes and awards
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

Jukka Ahokas,
Vastaväittäjä, Jukka Ahokas, 25.06.2009, Estonia
Doctor honoris causa, Jukka Ahokas, 12.11.2010, Estonia

Laura Alakukku,
Reviewer Certificate Soil &amp; Tillage Research, Laura Alakukku, 16.02.2010

Helinä Hartikainen,
M.Sc. Thesis, award of Valmari Fund, Helinä Hartikainen, 1973 → ...
Reward of Scientific Agricultural Society of Finland, Helinä Hartikainen, 1998 → ...
Golden medal for merit, Helinä Hartikainen, 2002 → ...
Member of Finnish Academy of Science and Letters, Helinä Hartikainen, 2004 → ...
Knight, First Class, of Order of the White Rose in Finland (SVR R 1), Helinä Hartikainen, 2005 → ...
Service medal with silver sprigs, Helinä Hartikainen, 2007 → ...

Juha Helenius,
Research award: The British Council Fellowship Award 1990, Juha Helenius, 1990 → ..., United Kingdom
NOVA Prize 2007, Juha Helenius, 2007 → ...

Jarmo Juga,
ICAR Distinguished Service Award, Jarmo Juga, 2006, Italy

Kenedy Etone Epie,
University of Helsinki Alumni Friends of the Environment Fund, Kenedy Etone Epie, 2009 → ..., Finland

Tomas Roslin,
Academy of Finland Recognition Award, Tomas Roslin, 2005 → ...
Academy of Finland Recognition Award 2005, Tomas Roslin, 10.11.2005, Finland
Best tutor of undergraduate students in the Faculty of Biosciences, Tomas Roslin, 2007 → ...

Mervi Seppänen,
Kannustuspalkinto, Mervi Seppänen, 01.01.2010 → 31.12.2010, Finland

Editor of research journal

Jukka Ahokas,
Food and Bioproducts Processing, Jukka Ahokas, 04.05.2007 → 31.12.2007

Kari Elo,
Agricultural and Food Science, Kari Elo, 01.01.2007 → 31.12.2007, Finland
Environmental Biotechnology, Kari Elo, 01.01.2007 → 31.12.2007, Poland
Evolution, Kari Elo, 01.01.2007 → 31.12.2007, United States
Genetics, Kari Elo, 01.01.2007 → 31.12.2007, United States
Journal of Dairy Science, Kari Elo, 01.01.2007 → 31.12.2007, United States
Animal, Kari Elo, 01.01.2008 → 31.12.2008, United Kingdom
BMC Genetics, Kari Elo, 01.01.2008 → 31.12.2008, Germany
Environmental Biotechnology, Kari Elo, 01.01.2008 → 31.12.2008, Poland
Genetics, Kari Elo, 01.01.2008 → 31.12.2008, United States

Helinä Hartikainen,
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

**SSA/Stoddard**

Journal of Trace Elements in Biology and Medicine, Helinä Hartikainen, 2010 → ..., Germany

**Juha Helenius**,
Member of editorial advisory board: Agriculture, Ecosystems and Environment, Juha Helenius, 1996 → 2011
Editor in chief of Agricultural and Food Science, Juha Helenius, 2008 → 2011
Editor of Scientific journal: Agricultural and Food Science, Juha Helenius, 2008 → 2011

**Iryna Herzon**,  
Agricultural and Food Science, Iryna Herzon, 01.01.2007 → 31.12.2007, Finland  
Journal of Environmental Management, Iryna Herzon, 01.01.2007 → 31.12.2007  
Journal of Field Ornithology, Iryna Herzon, 01.01.2007 → 31.12.2007  
Journal of Nature Conservation, Iryna Herzon, 01.01.2007 → 31.12.2007

**Heikki Hokkanen**,  
BioControl, Heikki Hokkanen, 01.01.2005 → 31.12.2005  
Journal of Sustainable Agriculture, Heikki Hokkanen, 01.01.2005 → 31.12.2005  
Societal and ecological approach to biological control, Heikki Hokkanen, 01.01.2005 → 31.12.2005  
BioControl, Heikki Hokkanen, 01.01.2006 → 31.12.2006  
Journal of Sustainable Agriculture, Heikki Hokkanen, 01.01.2006 → 31.12.2006  
Progress in Biological Control, Heikki Hokkanen, 01.01.2006 → 31.12.2006  
Arthropod-Plant Interactions, Heikki Hokkanen, 01.01.2007 → 31.12.2007  
Bulletin of Insectology, Heikki Hokkanen, 01.01.2007 → 31.12.2007  
Progress in Biological Control, Heikki Hokkanen, 01.01.2007 → 31.12.2007

**Timo Hytönen**,  
Scientia Horticulturae, Timo Hytönen, 01.01.2005 → 31.12.2005, Netherlands  
Scientia Horticulturae, Timo Hytönen, 01.01.2008 → 31.12.2008

**Hamid Khazaei**,  
Emirates Journal of Food and Agriculture, Hamid Khazaei, 2009 → ..., United Arab Emirates  
Journal of Phytopathology, Hamid Khazaei, 2009 → ...  
Current Botany, Hamid Khazaei, 2010 → ...  
Plant Science Journal, Hamid Khazaei, 2010 → ..., Pakistan

**Erja Rappe**,  
Journal of Mental Health, Erja Rappe, 01.09.2007 → 30.09.2007, United Kingdom  
Pyskologia, Erja Rappe, 01.08.2007 → 30.06.2007, Finland

**Tomas Roslin**,  
Annales Zoologici Fennici, Tomas Roslin, 2008 → ..., Finland

**Mari Räty**,  

**Mahmoud Fathy Seleiman**,  
Asian Journal of Science and Technology, Mahmoud Fathy Seleiman, 2010 → ...  
International Journal of Recent Scientific Research, Mahmoud Fathy Seleiman, 2010 → ...  
Journal of Ecobiotechnology, Mahmoud Fathy Seleiman, 2010 → ...
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RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

SSA/Stoddard

Journal of Experimental Sciences, Mahmoud Fathy Seleiman, 2010 → ...

Mikko Sillanpää

Theoretical and Applied Genetics, Mikko Sillanpää, 2006 → ...

BMC Genetics, Mikko Sillanpää, 2009 → ...

Frontiers in Livestock Genomics, Mikko Sillanpää, 2010 → ...

Fred Stoddard

Starch / Stärke, Fred Stoddard, 01.01.2005 → 31.12.2011, Germany

Jari Valkonen


Archives of Virology, Jari Valkonen, 01.01.2005 → 31.12.2005


Molecular Breeding, Jari Valkonen, 01.01.2005 → 31.12.2005

Molecular Plant pathology, Jari Valkonen, 01.10.2005 → 31.10.2005

Molecular Plant-Microbe Interactions, Jari Valkonen, 01.01.2005 → 31.12.2005

Plant Cell Reports, Jari Valkonen, 01.01.2005 → 31.12.2005

Plant Journal, Jari Valkonen, 01.01.2005 → 31.12.2005

Potato Research, Jari Valkonen, 01.01.2005 → 31.12.2005

Theoretical and Applied Genetics, Jari Valkonen, 01.01.2005 → 31.12.2005

Virology, Jari Valkonen, 01.01.2005 → 31.12.2005

Annals of Applied Biology, Jari Valkonen, 01.01.2006 → 31.12.2006, United Kingdom

Journal of Virology, Jari Valkonen, 01.01.2006 → 31.12.2006, United Kingdom

Molecular Plant Biology, Jari Valkonen, 01.01.2006 → 31.12.2006, United Kingdom

Molecular Plant-Microbe Interactions, Jari Valkonen, 01.01.2006 → 31.12.2006, United Kingdom

Potato Research, Jari Valkonen, 01.01.2006 → 31.12.2006, United Kingdom

Annals of Applied Biology, Jari Valkonen, 01.01.2007 → 31.12.2007, United Kingdom

EMBO Journal, Jari Valkonen, 01.01.2007 → 31.12.2007

Forest pathology, Jari Valkonen, 01.01.2007 → 31.12.2007

Journal of General Virology, Jari Valkonen, 01.01.2007 → 31.12.2007, United Kingdom

Journal of Virology, Jari Valkonen, 01.01.2007 → 31.12.2007

Luonnon Tutkija, Jari Valkonen, 01.01.2007 → 31.12.2007, Finland

Molecular Plant Pathology, Jari Valkonen, 01.01.2007 → 31.12.2007, United Kingdom

Molecular Plant-Microbe Interactions, Jari Valkonen, 01.01.2007 → 31.12.2007, United States

Phytopathology, Jari Valkonen, 01.01.2007 → 31.12.2007

Plant Pathology, Jari Valkonen, 01.01.2007 → 31.12.2007

Potato Research, Jari Valkonen, 01.01.2007 → 31.12.2007, Netherlands

Transgenic Research, Jari Valkonen, 01.01.2007 → 31.12.2007

Annals of Applied Biology, Jari Valkonen, 01.01.2008 → 31.12.2008, United Kingdom


Journal of Virology, Jari Valkonen, 01.01.2008 → 31.12.2008, United States


Journal of Virology, Jari Valkonen, 01.01.2008 → 31.12.2008, United States
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Molecular Plant Pathology, Jari Valkonen, 01.01.2008 → 28.02.2008, United Kingdom
Molecular Plant-Microbe Interactions, Jari Valkonen, 01.01.2008 → 31.12.2008, United States
Phytopathology, Jari Valkonen, 01.01.2008 → 31.12.2008, United States
Potato Research, Jari Valkonen, 01.01.2008 → 31.12.2008, Netherlands
Virology, Jari Valkonen, 01.01.2008 → 31.12.2008, United States

Markku Yli-Halla,
Editor in Chief: Agricultural and Food Science, Markku Yli-Halla, 01.01.2005 → 31.12.2007, Finland

Editor of research anthology/collection/conference proceedings
Asko Simojoki,

Fred Stoddard,
29th Nordic Cereal Congress, Fred Stoddard, 09.06.2006 → 11.06.2006, Finland
Dietary Fibre 2006, Fred Stoddard, 01.01.2007 → 31.12.2007, Finland

Peer review of manuscripts
Laura Alakukku,
Forest Ecology and Management, Laura Alakukku, 31.05.2006
ISTRO 17th Triennial Conference Sustainability – its Impact on Soil Management and Environment, Laura Alakukku, 2006, Germany
Soil & Tillage Research review for 25 manuscripts, Laura Alakukku, 2006 → 2010, Netherlands
Journal of Food, Agriculture & Environment (JFAE), Laura Alakukku, 2007
Agricultural and Food Science, Laura Alakukku, 10.09.2008, Finland
18th ISTRO triennial conference - Sustainable Agriculture, Laura Alakukku, 2009, Turkey
Acta Agriculturae Scandinavica Section B review for 3 manuscripts, Laura Alakukku, 2009 → 2010
Agricultural and Food Science, Laura Alakukku, 01.02.2009, Finland
Suomen ympäristö, Laura Alakukku, 26.01.2010, Finland
XVIIth World Congress of the International Commission of Agricultural Engineering (CIGR), Laura Alakukku, 2010, Canada

Helinä Hartikainen,
Boreal Environmental Research, Helinä Hartikainen, 1998 → 2011
UNESCO report “Encyclopedia of Life Support Systems”, Helinä Hartikainen, 2001 → ...
Hydrobiology, Helinä Hartikainen, 2002 → ...
Water Research, Helinä Hartikainen, 2002 → ...
Chemosphere, Helinä Hartikainen, 2004 → 2011
Environmental Geochemistry and Health, Helinä Hartikainen, 2004 → ...
Journal of Agricultural and Food Chemistry, Helinä Hartikainen, 2004 → ...
Plant and Soil, Helinä Hartikainen, 2004 → 2011
Journal of Trace Elements in Medicine and Biology, Helinä Hartikainen, 2005 → 2010, Germany
Suo - Mires, Helinä Hartikainen, 2005 → ...
Journal of Environment Management, Helinä Hartikainen, 2006 → ...
Pedosphere, Helinä Hartikainen, 2006 → ...
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TuHaT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

SSA/Stoddard

Agricultural and Food Science, Helinä Hartikainen, 2007 → ...
Coral Research, Helinä Hartikainen, 2007 → ...
Functional Plant Biology, Helinä Hartikainen, 2007 → ...
Journal of the Science of Food and Agriculture, Helinä Hartikainen, 2007 → 2011, New Zealand
Marine Chemistry, Helinä Hartikainen, 2007 → ...
The Lancet, Helinä Hartikainen, 2007 → ...
Annals of Applied Biology, Helinä Hartikainen, 2008 → 2009, United Kingdom
Bioresource Technology, Helinä Hartikainen, 2009 → ...
Crop and Pasture, Helinä Hartikainen, 2009 → ...
Geoderma, Helinä Hartikainen, 2009 → ...
International Journal of Environmental Analytical Chemistry, Helinä Hartikainen, 2009 → ...
Fertilizer Use and Human Health, Helinä Hartikainen, 09.2010 → ...
Field Crop Research, Helinä Hartikainen, 2010 → 2011
Plant Biology, Helinä Hartikainen, 2010 → ..., Germany
The Science of Total Environment, Helinä Hartikainen, 2010 → ...
Vesitalous, Helinä Hartikainen, 2010 → ..., Finland
Waste Management and Research, Helinä Hartikainen, 2010 → ...
"Fertilizer Use and Human Health" to be published by North America Program, Helinä Hartikainen, 2010 → ...

Juha Helenius
Referee for Acta Forestalia Fennica, Juha Helenius, 1990 → ...
Referee for Acta Zoologica Fennica, Juha Helenius, 1990 → ...
Referee for Agriculture, Ecosystems and Environment, Juha Helenius, 1990 → ...
Referee for Annales Zoologici Fennici, Juha Helenius, 1990 → ...
Referee for BioControl, Juha Helenius, 1990 → ...
Referee for Biological Agriculture and Horticulture, Juha Helenius, 1990 → ...
Referee for Ecography, Juha Helenius, 1990 → ...
Referee for Entomologia Experimentalis et Applicata, Juha Helenius, 1990 → ...
Referee for Journal of Agricultural and Food Science in Finland, Juha Helenius, 1990 → ...
Referee for Silva Fennica, Juha Helenius, 1990 → ...

Iryna Herzon
Agriculture, Ecosystems and Environment, Iryna Herzon, 2007 → 2011
Andeola, Iryna Herzon, 2007 → 2011
Basic and Applied Biology, Iryna Herzon, 2007 → 2010
Journal of Applied Biology, Iryna Herzon, 2007 → 2010
Oecologia, Iryna Herzon, 2007 → 2010

Timo Hytönen
Peer review, Timo Hytönen, 2010 → ...
Peer review, Timo Hytönen, 2010 → ...

Seija Jaakkola
Agricultural and Food Science, Seija Jaakkola, 1996 → ...
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

**SSA/Stoddard**

Acta Veterinaria Scandinavica, Seija Jaakkola, 2000 → ...
Animal Feed Science and Technology, Seija Jaakkola, 2000 → ...
Grass and Forage Science, Seija Jaakkola, 2005 → ...
Journal of Animal and Feed Science, Seija Jaakkola, 2007 → ...
Australian Journal of Experimental Agriculture, Seija Jaakkola, 2008 → ...
Agronomy Research, Seija Jaakkola, 2009 → ...
Acta Agriculturæ Scandinavica A Animal Science, Seija Jaakkola, 2010 → ...
Irish Journal of Agricultural and Food Research, Seija Jaakkola, 2010 → ...

**Jarmo Juga**

Vertausarviointi JDS, Jarmo Juga, 2009 → ...

**Hamid Khazaei**

Electronic Journal of Plant Breeding, Hamid Khazaei, 2009 → ...
Journal of Plant Breeding and Crop Science, Hamid Khazaei, 2009 → ...
World Applied Sciences journal, Hamid Khazaei, 2009 → ...

**Tuomo Kokkonen**

Peer review of manuscripts / Journal of Dairy Research, Tuomo Kokkonen, 2006 → ...
Peer review of manuscripts / Journal of Dairy Science, Tuomo Kokkonen, 2006 → ...
Peer review of manuscripts / Livestock Science, Tuomo Kokkonen, 2007 → ...
Peer review of manuscripts / Journal of Animal Science, Tuomo Kokkonen, 2009 → ...
Peer review of manuscripts / Acta Veterinaria Scandinavica, Tuomo Kokkonen, 2010 → ...

**Hanna-Riitta Kymäläinen**

Reviewing, Biomacromolecules, Hanna-Riitta Kymäläinen, 2006 → ...
Reviewing, Journal of Food Engineering, Hanna-Riitta Kymäläinen, 2007 → ...
Reviewing, European Journal of Lipid Science and Technology, Hanna-Riitta Kymäläinen, 2008 → ...
Reviewing, Food Additives and Contaminants (2x), Hanna-Riitta Kymäläinen, 2008 → 2009
Reviewing, International Journal of Food Microbiology, Hanna-Riitta Kymäläinen, 2008 → ...
Reviewing, Process Biochemistry, Hanna-Riitta Kymäläinen, 2008 → ...
Reviewing, International Journal of Consumer Studies (11x), Hanna-Riitta Kymäläinen, 2009 → 13.05.2011
Reviewing, The Open Biology Journal, Hanna-Riitta Kymäläinen, 2009 → ...
Reviewing, Canadian Biosystems Engineering, Hanna-Riitta Kymäläinen, 2010 → ...
Reviewing, Journal of Microscopy (2x), Hanna-Riitta Kymäläinen, 2010 → 12.01.2011

**Leena Linden**

Canadian Journal of Plant Science, Leena Linden, 01.05.2005 → 31.05.2005, Canada
Tree Physiology, Leena Linden, 01.01.2008 → 31.12.2008
Trees - Structure and Function, Leena Linden, 13.08.2008
Suomen Rästa, Leena Linden, 2009 → ...
Plant, Cell & Environment, Leena Linden, 2010 → ...
Trees Structure and Function, Leena Linden, 2010 → ...

**Maohua Ma**

Peer review: Agriculture, Ecosystems and Environment, Maohua Ma, 2001 → ...
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

SSA/Stoddard

Peer review: Acta Oecologica, Maohua Ma, 2005
Peer review: Plant Ecology, Maohua Ma, 2006
Peer review: Applied Vegetation Science, Maohua Ma, 2008 → 2009
Peer review: Boreal Environment Research, Maohua Ma, 2008

Pirjo Mäkelä
Agronomy for Sustainable Development, Pirjo Mäkelä, 2005, France
Annals of Botany, Pirjo Mäkelä, 2005, United Kingdom
Acta Agriculturae Scandinavica, Section B. Soil and Plant Science, Pirjo Mäkelä, 2006, Sweden
Agronomy for Sustainable Development, Pirjo Mäkelä, 2006, France
Environmental and Experimental Botany, Pirjo Mäkelä, 2006, Netherlands
Plant and Soil, Pirjo Mäkelä, 2006, Netherlands
APIS, Pirjo Mäkelä, 2008, Netherlands
Agronomy Journal, Pirjo Mäkelä, 01.08.2008 → 31.12.2011, United States
Environmental and Experimental Botany, Pirjo Mäkelä, 2008, Netherlands
Plant and Soil, Pirjo Mäkelä, 2008, Netherlands
European Journal of Soil Biology, Pirjo Mäkelä, 2009, Netherlands
Acta Agriculturae Scandinavica, Section B - Soil & Plant Science, Pirjo Mäkelä, 2010, Sweden
Agronomy Research, Pirjo Mäkelä, 2010, Estonia

Pauliina Palonen
Acta Horticulturae, Pauliina Palonen, 2006
HortScience, Pauliina Palonen, 2009
Scientia Horticulturae, Pauliina Palonen, 2009
Environmental and Experimental Botany, Pauliina Palonen, 15.02.2010
HortScience, Pauliina Palonen, 19.04.2010

Matti Pastell
Biosystems Engineering, Matti Pastell, 2010
Computers and Electronics in Agriculture, Matti Pastell, 2010

Tomas Roslin
Journal of Tropical Ecology, Tomas Roslin, 2001 → 2005
Annales Zoologici Fennici, Tomas Roslin, 2002 → 2005, Finland
Ecological Entomology, Tomas Roslin, 2002 → 2008
Oikos, Tomas Roslin, 2002 → 2007
Acta Oecologica, Tomas Roslin, 2005
Ecography, Tomas Roslin, 2005 → 2006
Oecologia, Tomas Roslin, 2005
Basic and Applied Ecology, Tomas Roslin, 2006
European Journal of Entomology, Tomas Roslin, 2006
Biodiversity and Conservation, Tomas Roslin, 2007
Biology Letters, Tomas Roslin, 2007
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SSA/Stoddard

Landscape Ecology, Tomas Roslin, 2007
Oecologia, Tomas Roslin, 2007
Ecography, Tomas Roslin, 2008 → 2010
Insect Conservation and Diversity, Tomas Roslin, 2008
Evolutionary Ecology, Tomas Roslin, 2009
Global Change Biology, Tomas Roslin, 2009
Journal of Insect Conservation, Tomas Roslin, 2009
Journal of Tropical Ecology, Tomas Roslin, 2009
Oikos, Tomas Roslin, 2009 → 2010
PLoS ONE, Tomas Roslin, 2009
Biotropica, Tomas Roslin, 2010
Ecological Entomology, Tomas Roslin, 2010
Ecology Letters, Tomas Roslin, 2010
Journal of Biogeography, Tomas Roslin, 2010
Oecologia, Tomas Roslin, 2010
Physiological Entomology, Tomas Roslin, 2010

Arja Santanen,
Pollen source and resource limitation to fruit production in the rare species Eremosparton soncoricum (Litv.) Vass. (Fabaceae), Arja Santanen, 2009 → ...
The phytotoxic effects and biodegradability of stored rape seed oil and rape seed oil methylster, Arja Santanen, 2010 → ...

Mahmoud Fathy Seleiman,
Emirates Journal of Food and Agriculture, Mahmoud Fathy Seleiman, 2009 → ...
Australian Journal of Crop Science, Mahmoud Fathy Seleiman, 2010 → ...
World Applied Science Journal, Mahmoud Fathy Seleiman, 2010 → ...

Mikko Sillanpää,
Genetics, Mikko Sillanpää, 1998 → ...
American Journal of Human Genetics, Mikko Sillanpää, 2000 → ...
Annals of Human Genetics, Mikko Sillanpää, 2000 → ...
BMC Bioinformatics, Mikko Sillanpää, 2000 → ...
Bioinformatics, Mikko Sillanpää, 2000 → ...
Biometrical Journal, Mikko Sillanpää, 2000 → ...
Biometrics, Mikko Sillanpää, 2000 → ...
Gene, Mikko Sillanpää, 2000 → ...
Genetic Epidemiology, Mikko Sillanpää, 2000 → ...
Genetica, Mikko Sillanpää, 2000 → ...
Genetical Research, Mikko Sillanpää, 2000 → ...
Genetics, Selection, Evolution, Mikko Sillanpää, 2000 → ...
Heredity, Mikko Sillanpää, 2000 → ...
Human Genomics, Mikko Sillanpää, 2000 → ...
Human Heredity, Mikko Sillanpää, 2000 → ...

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International Statistical Review, Mikko Sillanpää, 2000 → ...
JABES, Mikko Sillanpää, 2000 → ...
Journal of Animal Breeding and Genetics, Mikko Sillanpää, 2010 → ...
Molecular Breeding, Mikko Sillanpää, 2000 → ...
Plant Breeding, Mikko Sillanpää, 2000 → ...
Scandinavian Journal of Work, Environment & Health, Mikko Sillanpää, 2000 → ...
Statistics in Medicine, Mikko Sillanpää, 2000 → ...
Theoretical and Applied Genetics, Mikko Sillanpää, 2000 → ...
Tree Genetics and Genomics, Mikko Sillanpää, 2000 → ...
Trends in Plant Science, Mikko Sillanpää, 2000 → ...
Signal Processing, Mikko Sillanpää, 2010
Statistical Modeling, Mikko Sillanpää, 2010

Asko Simojoki,
Environmental Pollution, Asko Simojoki, 29.03.2006 → 31.12.2006, Netherlands
Soil and Tillage Research, Asko Simojoki, 01.01.2007 → 31.12.2007, Netherlands
Boreal Environment Research, Asko Simojoki, 01.01.2008 → 31.12.2008, Finland
Soil & Tillage Research, Asko Simojoki, 01.01.2008 → 31.12.2008, Netherlands
Soil &amp; Tillage Research, Asko Simojoki, 01.01.2009 → 31.12.2009
Soil &amp; Tillage Research, Asko Simojoki, 01.01.2010 → 31.12.2010, Netherlands

Fred Stoddard,
Starch / Stärke, Fred Stoddard, 08.2004 → ..., Germany
Australian Journal of Agricultural Research, Fred Stoddard, 01.01.2006 → 31.12.2008, Australia
Cereal Chemistry, Fred Stoddard, 01.01.2006 → 31.12.2006, United States
Euphytica, Fred Stoddard, 2006 → 2011, Germany
Agricultural and Food Science, Fred Stoddard, 01.01.2007 → 31.12.2007, Finland
Annals of Applied Biology, Fred Stoddard, 01.01.2007 → ..., United Kingdom
Environmental and Experimental Botany, Fred Stoddard, 01.01.2007 → 31.12.2007, United Kingdom
Field Crops Research, Fred Stoddard, 01.01.2007 → 31.12.2011, Netherlands
Journal of Agricultural Science and Technology, Fred Stoddard, 01.01.2007 → 31.12.2007, Iran
Journal of Plant Pathology, Fred Stoddard, 01.01.2007 → 31.12.2007, Italy
Journal of Agronomy and Crop Science, Fred Stoddard, 01.01.2008 → 31.12.2010, United Kingdom
Crop Protection, Fred Stoddard, 01.01.2009 → ..., Netherlands
International Journal of Genomics, Fred Stoddard, 01.01.2009, United States
Protoplasma, Fred Stoddard, 01.01.2009 → ..., Germany
Theoretical and Applied Genetics, Fred Stoddard, 01.01.2009 → ..., Germany
Archives of Agronomy and Soil Science, Fred Stoddard, 12.2010, United Kingdom
Crop and Pasture Science, Fred Stoddard, 01.01.2010 → ..., Australia
European Journal of Plant Pathology, Fred Stoddard, 09.2010, Germany
Journal of Food Composition and Analysis, Fred Stoddard, 04.2010, Netherlands

Petra Tallberg,
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

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SSA/Stoddard

Reviewer, Estuarine, coastal and Shelf Science, Petra Tallberg, 2000 → 2011
Alia Vanhatalo,
Agricultural and Food Science, Alia Vanhatalo, 2001 → ...
Journal of Dairy Science, Alia Vanhatalo, 2001 → ..., United States
Animal, Alia Vanhatalo, 2004 → ..., United Kingdom
Canadian Journal of Animal Science, Alia Vanhatalo, 2008 → ...
Grass and Forage Science, Alia Vanhatalo, 2008 → ..., United Kingdom
Livestock Science, Alia Vanhatalo, 2008 → ..., Netherlands
Journal of Animal Science, Alia Vanhatalo, 2010 → ..., United States
Rangeland Ecology and management, Alia Vanhatalo, 2010 → ..., United States

Seija Virtanen,
Mieli maassa - maa mielessä 40 v, Seija Virtanen, 17.11.2010 → 01.12.2010, Finland
Markku Yli-Halla,
Referees, Science of the Total Environment, Markku Yli-Halla, 2006 → ...
Referees, Geoderma, Markku Yli-Halla, 2008 → ...
Review of a manuscript, Agriculture, Ecosystems & Environment, Markku Yli-Halla, 01.01.2008 → ...
Referee, CLEAN - Soil, Air, Water, Markku Yli-Halla, 18.08.2010
Referee, Egyptian Journal of Agronomy, Markku Yli-Halla, 10.01.2010, Egypt
Referee, Journal of Environmental Quality, Markku Yli-Halla, 12.06.2010, United States

Editor of series
Heikki Hokkanen,
Progress in Biological Control, Heikki Hokkanen, 01.01.2002 → 31.01.2011, Netherlands
Arthropod-Plant Interactions, Heikki Hokkanen, 01.05.2006 → 31.01.2011, Netherlands

Pirjo Mäkelä,
Alia Vanhatalo,
Agricultural and Food Science, Alia Vanhatalo, 2001 → 2005, Finland

Editor of special theme number
Laura Alakukku,
Advances in Geocology 38, Laura Alakukku, 2006, Germany
100th Anniversary of the Scientific Agricultural Society of Finland, Laura Alakukku, 2009

Juha Helenius,
Guest editor: Special issue dedicated to the 100th Anniversary of the Scientific Agricultural Society of Finland, Juha Helenius, 2009 → ...

Tomas Roslin,
Spatial ecology of herbivorous insects, Tomas Roslin, 2005

Fred Stoddard,
Field Crops Research, Fred Stoddard, 15.04.2007 → 06.01.2010, Netherlands
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RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

SSA/Stoddard

Aila Vanhatalo, Agricultural and Food Science - Special issue dedicated to Professor emeritus Esko Poutiainen, Aila Vanhatalo, 2006
Agricultural and Food Science - Special issue dedicated to the 100th anniversary of the Scientific Agricultural Society of Finland, Aila Vanhatalo, 2006, Finland

Assessment of candidates for academic posts
Laura Alakukku, Bioforsk, Laura Alakukku, 2007, Norway
Swedish University of Agricultural Sciences, Laura Alakukku, 2008, Sweden
Helinä Hartikainen, Assessor for post doctoral position, Helinä Hartikainen, 2006 → …, Chile
Assessor for docentship, Helinä Hartikainen, 2009 → …

Piirjo Mäkelä, Viritäytötoimikunnan jäsen, Piirjo Mäkelä, 2006, Finland

Pauliina Palonen, Ulkopuolinen asiantuntija (Expert advisor) yliopistonlehtorin virantäytössä SLU, Ruotsi, Pauliina Palonen, 2006, Sweden

Tomas Roslin, External evaluator of docentship, Olli-Pekka Tikkanen, Tomas Roslin, 08.05.2007, Finland
External evaluator of docentship, Jussi Päivänen, Tomas Roslin, 17.12.2008, Finland
External evaluator of docentship, Iari Säätä, Tomas Roslin, 13.03.2009, Finland
External evaluator of docentship, Tommi Nyman, Tomas Roslin, 23.03.2009, Finland
Advisor in University Research Fellowship, Tomas Roslin, 08.2010, Finland

Mikko Sillanpää, Reviewer of a Wellcome Trust Senior Fellowship application, Mikko Sillanpää, 08.2006 → 09.2006, United Kingdom

Petra Tallberg, Evaluator of docentship (Jouni Lehtoranta), Petra Tallberg, 2009, Finland

Aila Vanhatalo, Evaluation of applications for academic posts / Docent, Aila Vanhatalo, 2006, Sweden
Evaluation of applications for academic posts / Professor, Aila Vanhatalo, 2008, Norway
Evaluation of applications for academic posts / Senior lectureship, Aila Vanhatalo, 2008, Sweden
Evaluation of applications for academic posts / Professor, Aila Vanhatalo, 2010, Sweden

Membership or other role in review committee
Jukka Ahokas, Defence Board, Jukka Ahokas, 2010 → 2015, Estonia

Juha Helenius, Evaluation for academic qualification, Juha Helenius, 1996 → …
Evaluation for academic qualification, Juha Helenius, 1996 → …
Evaluation for academic qualification, Juha Helenius, 1998 → …
Evaluation for academic qualification, Juha Helenius, 1999 → …
Evaluation for academic qualification, Juha Helenius, 1999 → …, Denmark
Evaluation for academic qualification, Juha Helenius, 2000 → …
Evaluation for academic qualification, Juha Helenius, 2001 → …, Sweden
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SSA/Stoddard

Member of the assessment committee for associate professorship, Juha Helenius, 2008 → ..., Denmark
Evaluation for academic qualification, Juha Helenius, 2009 → ...
External referee of project proposals for research funding, Juha Helenius, 2009 → ..., Finland
Member of the assessment committee for professorship, Juha Helenius, 2009 → ..., Denmark
Evaluation for academic qualification, Juha Helenius, 2010 → ..., Sweden
External referee of project proposals for research funding, Juha Helenius, 2010 → ..., Norway
External referee of project proposals for research funding, Juha Helenius, 2010 → ...

Jarmo Juga,
EVIAn arviointi, Jarmo Juga, 19.11.2010

Pirjo Mäkelä,
Vrantiyöntötömikunnan jäsen, Pirjo Mäkelä, 2005, Finland
Viron yliopistojen akkredointi - Archimedes, Pirjo Mäkelä, 07.05.2007 → 13.05.2007, Estonia
Evaluation for academic qualification/post-doctoral positions, Pirjo Mäkelä, 2008, Denmark
Evaluation for academic qualification/post-doctoral positions, Pirjo Mäkelä, 2008, Finland
Reviewer of research grant applications for Basilicata University, Pirjo Mäkelä, 2009, Italy
Viksu tiedekilpailu lukolaisille/arvioja, Pirjo Mäkelä, 2010, Finland

Matti Pastell,
Member of the ISO/TC23/SC19/WG3 “animal identification” working group, Matti Pastell, 2006 → ...
Referee for Leverage projects for the Industrial Research Fund Association K.U.Leuven., Matti Pastell, 06.01.2010

Mikko Sillanpää,
External Reviewer for inner evaluation purposes of the New Zealand Forest Research Institute, Mikko Sillanpää, 08.2006 → ..., New Zealand
Reviewer of a Equipment, Technology Development & Biomedical Resources Grant application, Mikko Sillanpää, 04.2007 → 06.2007, United Kingdom
Reviewer of a Wellcome Trust Research Grant application, Mikko Sillanpää, 08.2007 → 09.2007, United Kingdom
Reviewer of a Research Grant Application, Mikko Sillanpää, 05.2008 → 06.2008, Israel
Reviewer of a Research Grant Applications for Postdoctoral Researchers, Mikko Sillanpää, 08.2008 → ..., Finland
Reviewer of MRC Career Development Award, Mikko Sillanpää, 2010 → ..., United Kingdom

Fred Stoddard,
Review of grant applications, Research Council of Norway, Fred Stoddard, 01.09.2008 → 30.09.2008, Norway
Review of grant application, Serbian Ministry for Science and Technological Development, Fred Stoddard, 29.09.2010 → 18.10.2010, Serbia

Aila Vanhatalo,
Evaluation of project proposals for research funding, Aila Vanhatalo, 2007, Estonia
Member of Professorship Appointment Committee, Aila Vanhatalo, 2008
Member of External Evaluation Committee of Animal Science study programmes of Norwegian University of Life Sciences (UMB), Aila Vanhatalo, 26.10.2009 → 30.10.2009, Norway
Member of Evaluation Committee for a European Doctorate Mention, Aila Vanhatalo, 2010, Spain

Membership or other role in research network
Juha Helenius,
Founder of the national MYTVAS programme, Juha Helenius, 1995 → ...
Coordination of post graduate education, Juha Helenius, 1997 → 2011

Member of NOVA University Working Group for Agroecology, Juha Helenius, 1997 → 2011

Member of Academic network for Development of Cooperation in the Field of Agricultural Ecology in the European North., Juha Helenius, 2002 → 2011

Hanna-Riitta Kymäläinen,
SSTL, Hanna-Riitta Kymäläinen, 2009 → 2011, Finland

Pauliina Palonen,

Mervi Seppänén,

Mikko Sillanpää,
Substitute of the EU COST TD0801 Management Committee in Finland, Mikko Sillanpää, 08.2009 → 12.2012

Membership or other role in national/international committee, council, board

Jukka Ahokas,
EurAgEng Precision Livestock Farming, Jukka Ahokas, 01.01.2007 → 31.12.2007

Editorial Board, Jukka Ahokas, 2010 → 2011, Lithuania

Laura Alakukku,
ISTRO, Laura Alakukku, 2003 → 2009

Maatalouskoneiden tutkimussäätiön hallintoneuvosto, Laura Alakukku, 2007 → …, Finland

Suomen Kulttuurirahaston hallitasoitja, Laura Alakukku, 2008 → 2013

Finnish Society of Agricultural Engineers, Board member, Laura Alakukku, 2009 → …, Finland

The Scientific Agricultural Society of Finland, deputy chairman of board, Laura Alakukku, 2010 → 2012

VALUE doctoral program, board member, Laura Alakukku, 2010 → …

Kari Elo,
Maa- ja metsätalousministeriö, ohjausryhmän jäsen kahdeksalle tutkimusprojektille, Kari Elo, 01.01.2005 → 31.12.2005, Finland

Suomen Maataloustieteellinen seura, koteiluntoimikunta, Kari Elo, 01.01.2005 → 31.12.2005, Finland

Helinä Hartikainen,
Board member of Oliva Kuusisto foundation, Helinä Hartikainen, 1996 → 2011

Member of expert pool, Helinä Hartikainen, 01.01.1998 → 31.12.2010, Finland

Member of foundation board/Finnish Drainage Research, Helinä Hartikainen, 2000 → 2011

Member of scholarship committee, Helinä Hartikainen, 2000 → 2011

Committee member/FINCID, Helinä Hartikainen, 2001 → 2012, Finland

Helsinki University Environmental Research Centre (HERC), Helinä Hartikainen, 2002 → 2009

Deputy board member of Kemira Oyj foundation, Helinä Hartikainen, 01.01.2003 → 31.12.2005, Finland

Follow-up group of SEGUE project, Helinä Hartikainen, 2003 → 2006

Member of consultative committee for research in food and agricultural sector, Helinä Hartikainen, 2003 → 2008

Palmenia/Advisory committee for sector of natural, bio- and environmental sciences, Helinä Hartikainen, 2004 → 2007

Chair of council of Association of Academic Agronomists, Helinä Hartikainen, 2005 → 2008

Chair of the organizing committee of TracEl2007, Helinä Hartikainen, 2005 → 2007, Finland

Deputy member of administrative committee of fund, Helinä Hartikainen, 2005 → 2010

International Commisssion of irrigation and Drainage (ICID), Helinä Hartikainen, 01.01.2006 → 31.12.2006, India
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SSA/Stoddard

Member of foundation board/Aino and Johannes Tiura foundation, Helinä Hartikainen, 2006 → 2012
Committee member in VELMU inventory program, Helinä Hartikainen, 01.01.2007 → 31.12.2008, Finland
Council member, Helinä Hartikainen, 2009 → 2012
Member of Committee for Education, Helinä Hartikainen, 2009 → 2012
Member of foundation council/Finnish Drainage Research, Helinä Hartikainen, 2010 → 2013

Juha Helenius,
Head of the Department of Applied Zoology, Juha Helenius, 1993 → ...
Other pedagogic activity, Juha Helenius, 1996 → 2011
Other pedagogic activity, Juha Helenius, 1996 → 2011
Chair of Coordination Committee for Agricultural Education, Juha Helenius, 1997 → 2006
Development activities, Juha Helenius, 1997 → 2011
Development activities, Juha Helenius, 1999 → 2011
Invited scientific expert outside the University, Juha Helenius, 1999 → 2011
Invited scientific expert outside the University, Juha Helenius, 1999 → ...
Coordination of post graduate education, Juha Helenius, 2001 → 2005
Development activities, Juha Helenius, 2001 → ...
Invited scientific expert outside the University, Juha Helenius, 2001 → 2006
Responsible professor for Specialization option, Juha Helenius, 2001 → 2011
Chair of Eco Studies research and educational project of Eco Studies-programme of the Ruralia Institute, Juha Helenius, 2002 → 2009
Invited expert in international evaluation, Juha Helenius, 2002 → ..., Denmark
Chair of the assessment committee for pedagogical skills, Juha Helenius, 2004 → 08.2009
Member of the panel: Scientific evaluation of the Swedish national organic agriculture research programmes 1997-2004, Juha Helenius, 2006 → 2007, Sweden
Coordinator of Lepsämänjoki agricultural watershed LTSER platform, Juha Helenius, 2007 → 2011
Invited scientific expert outside the University, Juha Helenius, 2008 → 2011
Member of The Futures Committee of the Finnish Parliament, Juha Helenius, 2008 → ...
Coordinator of University of Helsinki consortium members of VACCIA Life+, Juha Helenius, 2009 → 2011
Membership in steering group of MENVI, Juha Helenius, 2009 → 2012
Development activities, Juha Helenius, 2010 → 2012

Iryna Herzon,
Society for Conservation Biology, Iryna Herzon, 01.01.2007 → 31.12.2007

Jarmo Juga,
President of ICAR, Jarmo Juga, 2004 → 2006, Italy
NAV SAC, Jarmo Juga, 18.09.2009 → ..., Denmark
Bio CC, Scientific Council, Jarmo Juga, 01.10.2010 → ..., Estonia

Hamid Khazaei,
Member, Young Researchers Club, Hamid Khazaei, 2007 → ..., Iran
Member, KLV, Hamid Khazaei, 2008 → ...
Member, Student Researchers Club, Iran, Hamid Khazaei, 2008 → ..., Iran
Member, NJF, Hamid Khazaei, 2009 → ...
Member, The Royal Botanical Society of Belgium, Hamid Khazaei, 2009 → ...
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Hanna-Riitta Kymäläinen,
Membership of the Technology division of the Finnish Society of Agricultural Research, Hanna-Riitta Kymäläinen, 2002 → 2006, Finland
MMTEK&AGTEK johtoryhmä, Hanna-Riitta Kymäläinen, 2004 → 2009, Finland
SSR (strategic planning group), Hanna-Riitta Kymäläinen, 2004 → 2007, Finland
Kandidaatin arviointimittari, Hanna-Riitta Kymäläinen, 2006 → ..., Finland
Membership of the Technology division of the Finnish Society of Agricultural Research, Hanna-Riitta Kymäläinen, 2006 → 2008, Finland
Membership of IFHE (International Federation of Home Economics), Hanna-Riitta Kymäläinen, 2007 → 2011, Switzerland
Membership of IFHE Programme Committee on Institutional and Hospitality Management, Hanna-Riitta Kymäläinen, 2007 → 2011, Switzerland
OKT (opetuksen kehittämistoimikunta), Hanna-Riitta Kymäläinen, 2007 → 2010, Finland
OTT (opetustaitotoimikunta), Hanna-Riitta Kymäläinen, 2007 → 2011, Finland
MOKE (maataloustieteiden laitoksen opetuksen kehittämistyöryhmä), Hanna-Riitta Kymäläinen, 2009 → 2011, Finland
Maisterintutkimuksen arviointimittari, Hanna-Riitta Kymäläinen, 2009 → 2010, Finland
OTT (opetustaitotoimikunta), Hanna-Riitta Kymäläinen, 2009 → ..., Finland
Leena Linden,
MMM:n kasvillisuuslautakunnan jäljentäjä, Leena Linden, 01.01.1995 → 31.12.2007
Dendrologian Seura - Dendrologiska Sällskapet ry, hallituksen jäsen, Leena Linden, 01.01.1996 → 31.12.2007
Dendrologian Seura - Dendrologiska Sällskapet ry, sihteeri, Leena Linden, 01.01.2000 → 31.03.2010
Metäharjastajan jälkitalouslaite, Leena Linden, 2005 → 2009
Pohjoinen maataloustutkimus syynä, Suomen osaston johtokuntaan, Leena Linden, 2007 → 2011
Pohjoinen maataloustutkimus huoltopaikka, Leena Linden, 01.01.2007 → 30.06.2011
Dendrologian Seura - Dendrologiska Sällskapet ry, puheenjohtaja, Leena Linden, 01.01.2008 → 31.12.2009
Pirjo Mäkelä,
Suomen maataloustutkimus seura/Kasvintuotantotoimikunta, Pirjo Mäkelä, 01.01.2006 → 31.12.2011
ESA - European Society for Agronomy, Pirjo Mäkelä, 2007 → ..., Finland
NJF/Suomen osasto, Pirjo Mäkelä, 2007 → 2010, Finland
Erja Rappe,
Management committee COST 886, Erja Rappe, 01.01.2007 → 31.12.2007
Tomas Roslin,
Societas Entomologica Helsinforsiensis, Tomas Roslin, 01.01.2005 → 31.12.2005, Finland
Suomen Akatemian tiedekilpailu Viksau, Tomas Roslin, 01.01.2005 → 31.12.2010, Finland
Societas Entomologica Helsinforsiensis, Tomas Roslin, 01.01.2006 → 31.12.2006, Finland
Societas Entomologica Helsinforsiensis, Tomas Roslin, 01.01.2007 → 31.12.2007
Societas Entomologica Helsinforsiensis, Tomas Roslin, 01.01.2008 → 31.12.2008, Finland
Suomen Akatemia, Tomas Roslin, 01.01.2008 → 31.12.2008, Finland
Mari Räty,
Suomen Maaperätieteiden seura, Mari Räty, 01.05.2006 → 31.07.2006
Mervi Seppänen,
Kahden MMM tutkimushankkeen ohjausryhmä, Mervi Seppänen, 01.01.2005 → 31.12.2005, Finland
Suomen Nurmuhydystys ry., Mervi Seppänen, 01.05.2005 → 30.04.2011
Mikko Sillanpää,
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

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SSA/Stoddard

A member in Complex Trait Consortium (CTC), Mikko Sillanpää, 2004 → …

Asko Simojoki
Suomen maataloustieteellinen seura, Kasvintuotanto-tämikunta, Asko Simojoki, 2002 → …, Finland
Nordic Association of Agricultural Scientists (NJF). Vice member of board (section Soil Water and Environment)., Asko Simojoki, 2007 → …, Sweden

Helena Soinne
Suomen Maaperätieteiden Seuran sihteeri, Helena Soinne, 2007 → 05.2011, Finland

Fred Stoddard
Association of Applied Biologists, Fred Stoddard, 01.01.2006 → 31.12.2006, United Kingdom
International Workshop on Faba Bean Breeding and Agronomy, Fred Stoddard, 01.01.2006 → 31.12.2006, Spain
SVS Suomen Viljateknologian Seura, Fred Stoddard, 01.01.2006 → 31.12.2011, Finland
AACC International and Cereals in Europe, Fred Stoddard, 01.01.2007 → 31.12.2007, United States
NJF Nordic Association of Agricultural Scientists, Fred Stoddard, 01.01.2007 → 31.12.2011
Scientific committee AEP, Fred Stoddard, 01.01.2007 → 31.12.2010, France
European Society for Agronomy, President 2010-2012, Fred Stoddard, 08.2010 → 08.2012

Petra Tallberg
Member of MENVI steering group, Petra Tallberg, 2009 → …, Finland

Johannes Tiisanen
Maataloustieteellinen seura, Teknologiatoimikunta, Johannes Tiisanen, 01.01.2007 → 31.12.2007, Finland

Jari Valkonen
Biokemian neuvottelukunta, Jari Valkonen, 01.01.2005 → 31.12.2005
European Association of Potato Research (EAPR), Jari Valkonen, 01.01.2005 → 31.12.2005
Kasvinsuojeluseura (varapuheenjohtaja), Jari Valkonen, 01.01.2005 → 31.12.2005
Suomalainen taidelautamisliitto, Jari Valkonen, 01.01.2005 → 31.12.2005
Suomen Maataloustieteellinen Seura, Jari Valkonen, 01.01.2005 → 31.12.2005
European Association for Potato Research, Jari Valkonen, 01.01.2006 → 31.12.2006, Netherlands
Kasvinsuojeluseura ry., Jari Valkonen, 01.01.2006 → 31.12.2006, Finland
Suomen maataloustieteellinen seura ry., Jari Valkonen, 01.01.2006 → 31.12.2006, Finland
European Association for Potato Research, Jari Valkonen, 01.01.2007 → 31.12.2007, Netherlands
Kasvinsuojeluseura ry., Jari Valkonen, 01.01.2007 → 14.03.2007, Finland
Suomen maataloustieteellinen seura, Jari Valkonen, 01.01.2007 → 19.04.2007, Finland
European Association for Potato Research (EAPR), Jari Valkonen, 07.07.2008 → 31.12.2008, Netherlands

Aila Vanhatalo
Vice-member of the Executive Board of the Department of Animal Science, Aila Vanhatalo, 2004 → 2007
Member of the Entrance Examination Committee of the Faculty, Aila Vanhatalo, 2007 → 2009
Member of the Postgraduate and Research Committee of the Faculty, Aila Vanhatalo, 2007 → 2009
Member of the Executive Board of the Department of Animal Science, Aila Vanhatalo, 2008 → 2009
Vice-director of the Department of Animal Science, Aila Vanhatalo, 2008 → 2009
Member of the Department of Agricultural Sciences Board, Aila Vanhatalo, 2010
Member of the Faculty of Agriculture and Forestry Board, Aila Vanhatalo, 2010 → …

Markku Yli-Halla
Member in the advisory group, Markku Yli-Halla, 11.2009 → 2011, Finland
Harmful substances in fertilizer products - Haitalliset aineet lannoitevalmisteissa, Markku Yli-Halla, 04.2010 → ..., Finland

**Membership or other role in public Finnish or international organization**

**Jukka Ahokas**, Suomen standardoimisliitto/Maatalouskonnet ja metsäkonnet, Jukka Ahokas, 01.01.2007 → 31.12.2007, Finland

**Laura Alakukku**, Salajulkien tavoiteohjelman seurantaryhmä, Laura Alakukku, 2007 → ..., Finland

**COST**, Domain expert, Laura Alakukku, 2010 → 2014

**Kari Elo**, Maa- ja metsätalousministeriön tutkimushankkaiden ohjausryhmä (kolmen eri tutkimushankkeen ohjausryhmien jäsen), Kari Elo, 01.01.2007 → 31.12.2007, Finland

**Laura Alakukku**, MMM, preparation of a special measure for Finnish agri-environmental program, expert, Laura Alakukku, 2008

**Helinä Hartikainen**, HENVI Scientific Board, Helinä Hartikainen, 2010 → ..., Finland

**Juha Helenius**, Master by Invitation in Agricultural Students Association SAMPSA ry, Juha Helenius, 2001 → 2007


**Heikki Hokkanen**, OECD, Ympäristöterveys / terrestrinen ekotoksikologia, Heikki Hokkanen, 01.01.2005 → 31.12.2005


**Timo Hytönen**, MMM:n rahoittaman ”Kaasivaitaiden torjunta endofoottisten bakteerien avulla” -hankkeen ohjausryhmän jäsen, Timo Hytönen, 01.01.2006 → 31.12.2006

**Jarmo Juga**, Kotieläinjalostuksen neuvottelukunta, Jarmo Juga, 2010 → 2013

**Hanna-Riitta Kymäläinen**, Membership of the committee of ethical issues, Hanna-Riitta Kymäläinen, 2005 → 2009, Finland


**EcoDecora-hankkeen ohjausryhmän jäsen (HY/Ruralia)**, Leena Linden, 01.01.2007 → 31.12.2007

**Pirjo Mäkelä**, Luonnontieteellisen kokoamuseon johtokunnan jäsen, Pirjo Mäkelä, 05.02.2006 → 31.12.2008, Finland
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Kasvilajeluutakunta, MMM, Pirjo Mäkelä, 01.01.2008 → …, Finland
Kasvinsojueluaineenuvottelukunta, MMM, Pirjo Mäkelä, 01.01.2008 → …, Finland
Vieraslajistrategian valmistelyryhmä, MMM, Pirjo Mäkelä, 01.10.2008 → 31.12.2010, Finland

Matti Ojala

Suomen Hipsy ry, jaistustutkimus, Matti Ojala, 01.01.2005 → 31.12.2005, Finland

Erja Rappe

Viherympäristöölkötön tulevaisuusstrategia, Erja Rappe, 01.01.2006 → 31.12.2006, Finland
Viharan tulevaisuusstrategia (seka julkisen että yksityisen sektorin), Erja Rappe, 01.01.2007 → 31.12.2007, Finland

Mervi Seppänen

MMTDK:n asettama asiantuntijajärjestys MMM:n GMO-, tavanomaisen- ja luonnonmukaisen viljelyn rinnakkainon asiantuntijaryhmä, Mervi Seppänen, 01.01.2005 → 31.12.2005, Finland
MMTDK:n asettama asiantuntijajärjestys MMM:n GMO-, tavanomaisen- ja luonnonmukaisen viljelyn rinnakkainon asiantuntijaryhmä, Mervi Seppänen, 01.01.2006 → 31.12.2006, Finland

Petra Tallberg

Member of Suomen Immologinen yhdistys, Petra Tallberg, 1994 → …, Finland
Member of Suomen kasviplanktonyhdistys, Petra Tallberg, 2009 → …, Finland
Member of Suomen maaperätieteiden seura, Petra Tallberg, 2009 → …, Finland

Markku Yli-Halla

National Committee on the Soil Thematic Strategy, Markku Yli-Halla, 01.01.2003 → …
Board of Fertilizer Materials and Products, Markku Yli-Halla, 01.01.2007 → …, Finland
National Committee on Acid Sulphate Soils, Markku Yli-Halla, 01.01.2007 → 31.12.2010, Finland
Uudenmaan ympäristökeskuksen Vedenalaisen meriluonnon monimuotoisuuden inventointi (VELMIU), Markku Yli-Halla, 01.01.2007 → 31.12.2007, Finland

Membership or other role of body in private company/organisation

Jukka Ahokas

Ammattiedistämislaitos, Jukka Ahokas, 01.01.2007 → 31.12.2007
Maatalouskoneiden tutkimuslaitos, Jukka Ahokas, 01.01.2007 → …, Finland

Kari Elo

Suomen maataloustieteellinen tutkimuslaitos, Kari Elo, 01.01.2007 → 31.12.2007, Finland
Suomen Maataloustieteellinen tutkimuslaitos, Kari Elo, 01.01.2008 → 31.12.2008, Finland

Taina Laaksorju

Luottamusvaltuus, Taina Laaksorju, 2007 → 2011, Finland

Jenni Määttä

Kuluttajakeonomenistiset ja teknologiset COTES ry, Jenni Määttä, 01.01.2007 → 31.12.2008, United Kingdom

Pauliina Palonen

Kotkajärven kehittämis- ja sosiaaliyhdistys ry., Pauliina Palonen, 2005 → 2011, Finland

Tomas Roslin

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Nortäljentie 2:4 As Oy, Tomas Roslin, 01.01.2005 → 31.12.2005

Mari Räty,
Suomen Maaperätieteiden Seura, Mari Räty, 01.01.2007 → 31.12.2007

Mervi Seppänen,
Suomen nurmiyhdistys, varapuheenjohtaja, Mervi Seppänen, 01.01.2005 → 31.12.2005, Finland
Suomen nurmiyhdistys, varapuheenjohtaja, Mervi Seppänen, 01.01.2006 → 31.12.2006, Finland
Suomen nurmiyhdistys, varapuheenjohtaja, Mervi Seppänen, 01.01.2007 → 31.12.2007, Finland

Aila Vanhatalo,
Member of the Scientific and Research Foundation of Finnish Association of Academic Agronomists, Aila Vanhatalo, 2004 → ...
Vice-President of the Scientific Agricultural Society of Finland, Aila Vanhatalo, 2004 → 2006
President of the Scientific Agricultural Society of Finland, Aila Vanhatalo, 2007 → 2009

Other tasks of an expert in private sector

Laura Alakukku,
Advisory committee of the Center of Sugar Beet Research, Laura Alakukku, 2007 → 2012, Finland

Juha Helenius,
Project leader: Development of meat-bone meal based fertilizers, Juha Helenius, 2007 → 2012

Participation in interview for written media

Laura Alakukku,
Maaseudun tulevaisuus, Laura Alakukku, 06.07.2007
Suomenmaa, Laura Alakukku, 25.10.2007, Finland
Turun Sanomat, Laura Alakukku, 06.09.2008
Käytännön maamies, Laura Alakukku, 14.05.2009
Maatalouden opiskelu on varteenotettava vaihtoehto, Laura Alakukku, 05.08.2010, Finland

Kari Elo,
Farmari -messut (haastattelu ja posteri), Kari Elo, 28.07.2007 → 31.12.2011, Finland

Helinä Hartikainen,
Maaperäohjelman loppuseminaari/Helsinki, Helinä Hartikainen, 22.08.2006, Finland
Pääkirjoitus/Alimenta 1/2006, Helinä Hartikainen, 01.01.2006, Finland
Haastattelu/Verkkoilehti Beneficial nutrients news 3(1), Helinä Hartikainen, 01.01.2007, Sweden
Kirja/ Luokion kemia Neon 5, Helinä Hartikainen, 01.01.2007, Sweden
Lehti/ Kemia-Kemi 3/2007, Helinä Hartikainen, 01.01.2007, Finland
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Palmenia /sidosryhmäkokous Helsingissä, Helinä Hartikainen, 12.02.2007, Sweden
Haastattelu/Sulan jään maassa, Helinä Hartikainen, 04.2010 → ..., Finland
Lehtihaiastattelu/ Runs as rikki vähentää seleenin hyötyjä, Helinä Hartikainen, 03.2010 → ..., Finland

Juha Helenius,
Lehdet, Juha Helenius, 01.01.2002 → 31.12.2011, Finland
Yle-opetusohjelmat 'Kestävä kehitys', Juha Helenius, 01.01.2003 → 31.12.2011, Finland
Magazine interview, Juha Helenius, 2009 → ...
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Iryna Herzon,
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Timo Hytönen,

Heidelmän- ja marjanielijien ilion Kaamosmarjapäivät Ikaisten kysytylässä, Timo Hytönen, 17.11.2003 → 31.12.2011, Canada

MM:n rahoittamien mansikkaatutkimusten tutkijaseminaari, Jokioinen, Timo Hytönen, 23.04.2003 → 31.12.2011, Canada


Heidelmän- ja marjanielijoiden ilion talvi kenttäpäivät (Viking Linela), Timo Hytönen, 15.03.2005 → 31.12.2011, Netherlands

Risto Kuisma,
Lehtihaastattelu, Risto Kuisma, 2006 → ..., Finland

Lehtihaastattelu, Risto Kuisma, 01.08.2007, Finland

Hanna-Riitta Kymäläinen,
Lehtihaastattelu, Hanna-Riitta Kymäläinen, 05.03.2007, Finland

Leena Linden,
Poko sahteleva metsä, Leena Linden, 27.08.2007

Haastattelu Puutarha & Kauppa-lehdessä 18/2009, Leena Linden, 2009

Pirjo Mäkelä,
Haastattelu Käytännön Maamies, Pirjo Mäkelä, 2007, Finland

Haastattelu University of Helsinki Bulletin, Pirjo Mäkelä, 2007, Finland

Haastattelu Yliopistolehti, Pirjo Mäkelä, 2007, Finland

Haastattelu Etelä-Suomen Sanomat, Pirjo Mäkelä, 2008, Finland

Haastattelu Helsingin Sanomat, Pirjo Mäkelä, 2008, Finland

Haastattelu Käytännön Maamies, Pirjo Mäkelä, 2009, Finland

Haastattelu Maatilan Pellervo, Pirjo Mäkelä, 2009, Finland

Haastattelu Maatilan Pellervo, Pirjo Mäkelä, 2010, Finland

Jenni Määttä,

Matti Ojala,

Maaseudun Tulevaisuus, haastattelu, Matti Ojala, 23.05.2003 → 31.12.2011, Germany


Suomenhevoskasvatuksen seminaaripäivä, Ypäjä, esitelmä, Matti Ojala, 18.01.2004 → 31.12.2011, Finland

Sini Ooperi,
Ötökkäpäivä Kotimummen koulun 2B -luokalle, Sini Ooperi, 25.05.2005 → 31.12.2011, Finland

Tomas Roslin,
A propos 4/2005, Tomas Roslin, 2005, Finland

Helsingin Sanomat 11.11.2005, Tomas Roslin, 11.11.2005, Finland

Hufvudstadsbladet 11.11.2005, Tomas Roslin, 11.11.2005, Finland

Maaseudun Tulevaisuus, Tomas Roslin, 2005, Finland

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Aamulehti 17.8.2007, Tomas Roslin, 17.08.2007, Finland
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Helsingin Sanomat 17.6.2007, Tomas Roslin, 17.06.2007, Finland
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Kaleva 8.6.2008, Tomas Roslin, 08.06.2008, Finland
Kittilälehti 25/2008, Tomas Roslin, 2008, Finland
Maaseudun Tulevaisuus 18.6.2008, Tomas Roslin, 18.06.2008, Finland
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Tiede 7/2008, Tomas Roslin, 2008, Finland
Uusi Rovaniemi 25.6.2008, Tomas Roslin, 25.06.2008, Finland
Yliopisto 9/2008, Tomas Roslin, 2008, Finland
Ympäristö 4/2008, Tomas Roslin, 2008, Finland

Mervi Seppänen

Tuottava Peruna 2/03, ss. 43-44, Mervi Seppänen, 01.01.2003 → 31.12.2011, Finland
Tuottava peruna 3/03, ss. 23-24, Mervi Seppänen, 01.01.2003 → 31.12.2011, Finland
Koelysyy, MTT:n asiakaslehti 1/2007, s. 14-15, Mervi Seppänen, 01.01.2007 → 31.12.2011, Finland

Fred Stoddard

Helsingin Sanomat newspaper 17.08.2009: Blue lupin demonstrated to lower blood pressure, Fred Stoddard, 17.08.2009, Finland
Käytännön Maamies KM magazine 04.2009: Faba bean to be Europe’s soybean, Fred Stoddard, 04.2009, Finland
Maaseudun Tiede-lehti 03.2009: Blue lupin, a new animal feed, Fred Stoddard, 09.03.2009, Finland
Maaseudun Tiede-lehti 07.2009: Area sown to feed legumes expected to increase, Fred Stoddard, 08.07.2009, Finland
Glorian Ruoka ja Viini-lehti 12.2010: Palokkasvien ekologisuus, Fred Stoddard, 12.2010, Finland
Kehittyvä Elintarvike-lehti 04.2010: Legumes for organic and conventional agriculture, Fred Stoddard, 04.2010, Finland
Tiede-lehti 08.2010: Teknikika, Fred Stoddard, 08.2010, Finland

Jari Valkonen

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Rantalakeus, Jari Valkonen, 06.08.2003 → 31.12.2011, Finland

Perun suurhoidystin järjestämä International Year of Potato 2008 -iltatilaisus, Jari Valkonen, 02.10.2008 → 31.12.2011, Finland

Participation in radio programme
Kari Elo,
Radio Vega, Kari Elo, 05.08.2005, Finland

Juha Helenius,
Radio interview, Juha Helenius, 2009 → ...

Iryna Herzon,
YLE radio, Iryna Herzon, 26.02.2007 → 31.12.2011, Finland

Tomas Roslin,
Tieteen viikko, Tomas Roslin, 11.11.2005, Finland
Ajantasa, Tomas Roslin, 16.05.2007, Finland
Radiounet, Tomas Roslin, 05.04.2007, Finland
Tieteen viikko, Tomas Roslin, 29.03.2007, Finland
Ajantasa, Tomas Roslin, 06.06.2008, Finland
Kvanthopp, Tomas Roslin, 22.10.2008, Finland
Radio Suomi / Ajantasa, Tomas Roslin, 06.06.2008, New Zealand
Radio Vega / Kvanthopp, Tomas Roslin, 22.10.2010, New Zealand
YLE Radio 1, Tomas Roslin, 30.09.2010, Finland

Participation in TV programme
Laura Alakukku,
Television interview YLE1, Laura Alakukku, 04.05.2006
Television interview YLE1, Laura Alakukku, 10.05.2008

Pirjo Mäkelä,
TV: A-studio, Pirjo Mäkelä, 2002 → ..., United States
YLE aamu-TV, Pirjo Mäkelä, 06.2008 → ..., Finland

Tomas Roslin,
Prisma Studio, Tomas Roslin, 10.11.2005, Finland
Prisma Studio, Tomas Roslin, 31.08.2005, Finland
Ekolokero, Tomas Roslin, 29.08.2006, Finland
Aamu-tv, Luonto läheilä, Tomas Roslin, 27.08.2007, Finland
Prisma Studio, Tomas Roslin, 28.03.2007, Finland
Aamu-tv, Luonto läheilä, Tomas Roslin, 23.06.2008, Finland
Krökta rummet (Tieteen koukerot), Tomas Roslin, 04.12.2008, Finland

Participation in interview for web based media
Tomas Roslin,
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A propos: Viestin viejät, Tomas Roslin, 12.06.2006, Finland
BioPop!: Suomen lantakuoiasiista on ilmestynyt uusi kirja, Tomas Roslin, 28.03.2007, Finland
Tietysti.fi: Lantakuoriasisista näkyvät ympäristön muutokset, Tomas Roslin, 14.02.2008, Finland
Tietysti.fi, Tomas Roslin, 18.11.2009, Finland

Asko Simojoki,
Vikki-päivä, Infokeskus, Asko Simojoki, 06.10.2005, Finland

Markku Yli-Halla,
Haastattelu, Markku Yli-Halla, 22.10.2010, Finland
Research Group: Stoddard F

**Basic statistics**

<table>
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<th>Metric</th>
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<td>Number of citations (TCS)</td>
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<td>Number of citations per publication (MCS)</td>
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<td>Percentage of uncited publications</td>
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<td>Field-normalized number of citations per publication (MNCS)</td>
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<td>Internal coverage</td>
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**Trend analyses**

![MNCS Trend](image1)

![THCP10 Trend](image2)

![MNJS Trend](image3)

**Collaboration**

![Performance (MNCS) by collaboration type](image4)
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AT THE UNIVERSITY OF HELSINKI
by CWTS, Leiden University, the Netherlands

Research profile

Plant Sciences
Agriculture, Multidisciplinary
Food Science & Technology
Ecology
Genetics & Heredity
Agriculture, Dairy & Animal Science
Soil Science
Astronomy
Environmental Sciences
Virology
Horticulture
Agricultural Engineering

Threshold: P > 10

High HICCS, Avg HICCS, Low HICCS