



Research evaluation

FINAL RESUME ON THE RESEARCH UNIT
IRHS - Research Institute of Horticulture and Seeds

UNDER THE SUPERVISION OF THE
FOLLOWING INSTITUTIONS AND RESEARCH
BODIES:

Université d'Angers

Agrocampus Ouest - Institut supérieur des sciences
agronomiques, agroalimentaires, horticoles et du
paysage

Institut national de recherche pour l'agriculture,
l'alimentation et l'environnement - INRAE

EVALUATION CAMPAIGN 2020-2021
GROUP B

Report published on January, 06 2022

High Council for evaluation of research and higher education



In the name of Hcéres¹:

Mr Thierry Coulhon, President

In the name of the experts committee²:

Mr Jan Traas, Chairman of the committee

Under the decree No.2014-1365 dated 14 November 2014,

¹ The president of Hcéres "countersigns the evaluation reports set up by the experts committees and signed by their chairman." (Article 8, paragraph 5);

² The evaluation reports "are signed by the chairman of the experts committee". (Article 11, paragraph 2).

Tables in this document were filled with certified data submitted by the supervising body on behalf of the unit.

UNIT PRESENTATION

Unit name:

Research Institute of Horticulture and Seeds

Unit acronym:

IRHS

Current label and N°:

UMR 1345

ID RNSR:

201220383H

Application type:

Renewal

Head of the unit (2020-2021):

Mr Jean-Pierre Renou

Project leader (2021-2025):

Ms Marie-Agnès Jacques

Number of teams and/or themes:

14

EXPERTS COMMITTEE MEMBERS

Chair:

Mr Jan Traas, Inrae, Lyon

Experts:

Ms Dawn Arnold, Harper Adams University, United Kingdom

Mr Jean-Luc Cacas, AgroParisTech (représentant CNECA)

Ms Nathalie Castel, Université Bourgogne Franche-Comté, Dijon
(representative of CNU)

Mr Henryk Flachowsky, Julius Kühn-Institute (JKI), Germany

Ms Valérie Geffroy, Inrae, Orsay (représentante CSS Inrae)

Mr Daniel Grimanelli, IRD, Montpellier

Mr Sten Henrik Jonsson, University of Cambridge, United Kingdom

Mr Xavier Nesme, Inrae (supporting personnel)

Mr Thierry Rouxel, Inrae, Thiverval-Grignon

HCÉRES REPRESENTATIVE

Mr Steven Ball

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Ms Dominique Roby, Inrae - SPE

Mr Peter Rogowsky, Inrae – BAP

Mr Philippe Simoneau, Université d'Angers

Mr Dominique Vollet, Institut Agro-Agrocampus ouest

INTRODUCTION

HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The Research Institute of Horticulture and Seeds (Institut de Recherche en Horticulture et Semences, IRHS) was created in 2012, as a joint venture between INRA (now Inrae), Agrocampus-Ouest (now 'Institut Agro') and the University of Angers. It is in fact the result of a merger between four pre-existing units, which moved to a common, new building with greenhouse facilities at the Plant Campus in 2015. Located in Beaucouzé, near Angers, in a major horticultural and seed production area, it currently represents, with around 240 members and fourteen research teams, one of the main centers of plant research in the region.

RESEARCH ECOSYSTEM

The research ecosystem of IRHS is quite complex, but highly supportive of both fundamental and applied research. IRHS has three different supervising authorities, Inrae, University of Angers and AgroCampus-ouest. In addition, the involvement of Inrae spreads over three distinct Inrae divisions. This diversity of supervising authorities is not reflected at the team scale, with some teams for which the staff is only or mainly from one supervising authority. The IRHS also benefits from the SFR QuaSav, and is strongly supported by the region, and the cluster of competitiveness Vegepolys. Last, it is surrounded by numerous horticultural or seed companies. Infrastructures, funding, and the relatively high number of technical staff members associated with this excellent ecosystem are also very favorable to support research at the IRHS.

HCÉRES NOMENCLATURE AND THEMATICS OF THE UNIT

SVE Sciences du vivant et environnement
SVE1 Agronomie, Biologie Végétale, Ecologie, Environnement, Evolution

MANAGEMENT TEAM

Current director: Mr Jean-Pierre Renou

Current Deputy directors : Ms Mathilde Briard, Ms Marie-Agnès Jacques, Ms Nathalie Leduc and Ms Patricia Vandaele

Future director: Ms Marie-Agnès Jacques.

UNIT WORKFORCE

Active staff	Number 06/01/2020	Number 01/01/2022
Full professors and similar positions	13,1	13,1
Assistant professors and similar positions	35,6	35,5
Full time research directors (Directeurs de recherche) and similar positions	9,6	9
Full time research associates (Chargés de recherche) and similar positions	10,8	11,8
Other scientists ("Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.")	3,5	3,5
High school teachers	0	0
Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)	89,7	89,7
Permanent staff	162,3	162,6
Non-permanent professors and associate professors, including emeritus	4	
Non-permanent full time scientists, including emeritus, post-docs (except PhD students)	6,5	

PhD Students	25,5	
Non-permanent supporting personnel	15,9	
Non-permanent staff	51,9	
Total	214,2	162,6

GLOBAL ASSESSMENT OF THE UNIT

The IRHS was created just over ten years ago, as a fusion of several other laboratories. It currently is a large research unit with about 240 staff members (214,2 full time equivalent), organized into fourteen research teams. Supported by Inrae, the University of Angers and AgroCampus-ouest, it has become a major pillar of plant research in the region. The laboratory performs mostly basic research, which is strongly oriented towards horticultural (apple, pear, carrot, soybean, brassica, ...) and ornamental (mainly rose) species as well as their pathogens. Model species such as *Arabidopsis* are also used. In addition, the laboratory can count on a number of excellent common platforms, including the PHENOTIC phenotyping platform and different collections of genetic resources. The diversity provides a broad basis for innovative research. However, it also brings challenges related to communication and synergy between the teams.

The scientific output is overall very good to excellent, with differences in output between individual teams. In particular the analysis of the apple and rose genome stand out, carried out by research consortia headed by respectively the VALEMA and GDO teams.

IRHS teams have coordinated or participated in several important European projects illustrating their international standing. These include e.g., the H2020 INVITE project coordinated by the VADIPOM team and in which RESPOM, VALEMA and ImHorPhen participate as well. The CONCERTO team coordinates a workpackage of the H2020 EUCLEG project, in which the SEED and ImHorPhen teams are partners as well. However certain teams do not have any national or European grants and mainly depend on local and recurrent funding, thus reducing their flexibility and research potential. Solutions to alleviate this problem might come from strategies at the unit level to further increase synergy between the individual teams and broaden the international recognition at the unit scale.

Their work has an important translational aspect. Indeed, although there is some variability between the individual teams, the interactions with the private sector are overall very satisfactory.

The research unit is well integrated in the university landscape and it plays a very active role in teaching and training through research.

For the future, the IRHS will largely base its projects on ongoing research. In addition, the laboratory will further strengthen research on the interactions between plants and the environment, which corresponds to both local and national research priorities. The development of novel concepts and technologies in the field of bioinformatics, imaging, quantitative biology and computational modelling will be key.

Many teams in the IRHS are facing a shortage of personnel, combined with a heavy teaching load. This is an important challenge, which has in part been addressed by reorganizing the institute, through the merging or splitting of teams. In the future, it should also represent an opportunity to clarify research priorities, to set up adequate long-term recruitment plans and to put in place common scientific strategies. In this context, the recent definition of the four research axes (plants and their environment, biocontrol, evolution of plants and associated microorganisms, methodological research) of the IRHS is expected to promote interaction between teams.

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