



Research evaluation

FINAL RESUME ON THE RESEARCH UNIT
EPHor - Environnement Physique de la Plante Horticole

UNDER THE SUPERVISION OF THE
FOLLOWING INSTITUTIONS AND RESEARCH
BODIES:

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

EVALUATION CAMPAIGN 2020-2021
GROUP B

Report published on February, 02 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:

Ms Maria Isabel Freire Ribeiro Ferreira,
Chairwoman 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:

Environnement Physique de la Plante Horticole

Unit acronym:

EPHor

Current label and N°:

UPSP Ministère Agriculture

ID RNSR:

201220788Y

Application type:

Renewal

Head of the unit (2017-2021):

Mr Pierre-Emmanuel Bournet

Project leader (2021-2025):

Mr Patrice Cannavo

Number of teams and/or themes:

1

EXPERTS COMMITTEE MEMBERS

Chair:

Ms Maria Isabel Freire Ribeiro Ferreira, Universidade de Lisboa, Portugal

Experts:

Mr Yves Brunet, Inrae, Villenave d'Ornon

Mr Alain Fortineau, Inrae, Thiverval-Grignon (personnel d'appui à la recherche)

Ms Emmanuelle Vaudour, AgroParisTech, Thiverval-Grignon (représentante CNECA)

HCÉRES REPRESENTATIVE

Mr Thierry Ameglio

REPRESENTATIVES OF SUPERVISING INSTITUTIONS AND BODIES

Mr Dominique Vollet, Institut Agro, Head of Scientific Research, Deputy Director and Angers Campus Director

Mr Alain Vian, Director of the Doctoral School EGAAL

INTRODUCTION

HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The research unit EPHor was created in 2008, on the basis of a team that was formerly part of the UMR A467 Sagah, and was renewed in 2012 and 2017. This unit is supervised by the Ministry of Agriculture and gathers exclusively Agrocampus Ouest staff, all located on the Angers site. It works on physical transfer processes in highly anthropized or artificial constrained environments. EPHor was initially structured in two teams, one focusing on the root system and another one on the aerial compartment. These teams progressively widened their scope, as the first one integrated the impact of roots on the physico-chemical properties of soils and substrates, and the second one integrated the whole plant in its modelling efforts. In 2017, the unit was restructured in view of better synergies, coherence and value, with only one team and two so-called "contexts", one on confined horticultural systems and one on the urban environment.

RESEARCH ECOSYSTEM

EPHor is a research unit (RU) under the supervision of the Ministry of Agriculture, with staff members teaching at the Institut Agro Agrocampus Ouest (AO) and belonging to the same teaching department (MilPPaT: Physical environment, landscape, territory department). AO is an engineering school in agronomy, agrofood, horticulture and landscape. Its scientific policy is driven by a scientific council (24 members) and the AO research committee (non-statutory) with a supervisory role (between units and the establishment). Since 2008 EPHor has been a member of a research federation, the City Science and Technology Research Institute (IRSTV, research on the city, 170 members) of which AO is a constituent member. In 2017, it integrated the QuaSaV (Quality and Health of Vegetables) Federative Research Structure (SFR, set up in 2008, gathering a majority of the plant research forces of Pays de la Loire) and the Mixed Technological Unit STRATège (joint technological unit, created that same year for a five-year period and dedicated to the urban horticulture market, with 50 people from nine institutions). EPHor also created, with the Water Environment Laboratory (LEE) of Gustave Eiffel University, a joint research team (Équipe de Recherche Contractuelle, ERC VESPA, overall staff 25 people). Besides, the RU has integrated a national mixed technological network, Soils and Territories.

HCÉRES NOMENCLATURE AND THEMATICS OF THE UNIT

ST Sciences et Technologies

SVE1 Agronomie, Biologie Végétale, Écologie, Environnement, Évolution
ST, SVE, SVE1, ST5_4, SVE1_3

Physical transfer in soil and low atmosphere environment in the soil-plant atmosphere continuum in confined and urban horticultural systems.

MANAGEMENT TEAM

Mr Pierre Emmanuel BOURNET (current contract) and Mr Patrice CANNAVO (next contract).

UNIT WORKFORCE

Active staff	Number 06/01/2020	Number 01/01/2022
Full professors and similar positions	2	2
Assistant professors and similar positions	6	6
Full time research directors (Directeurs de recherche) and similar positions	0	0
Full time research associates (Chargés de recherche) and similar positions	0	0
Other scientists ("Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.")	0	0
High school teachers	0	0
Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)	6	6

Permanent staff	14	14
Non-permanent professors and associate professors, including emeritus		
Non-permanent full time scientists, including emeritus, post-docs (except PhD students)		
PhD Students	7	8
Non-permanent supporting personnel		
Non-permanent staff	7	8
Total	21	22

GLOBAL ASSESSMENT OF THE UNIT

The EPHor research unit has an original positioning, centered on highly anthropized systems such as greenhouses and the urban environment. In line with the current context of global change and the need for more sustainable production systems, its research focusses on the environmental conditions of plant development in the context of confined horticulture, and in urban and peri-urban contexts. Its activities address important economic and societal issues, and deal with specific scientific questions granting the unit a clear identity.

Over the past five years, EPHor has achieved great progress in terms of overall scientific output, which is now considered very good to excellent with 49 peer-reviewed publications in journals with 73% in the first quartile of subject category covered by EPHor (e.g., *Journal of Soils and Sediments*, *Scientia Horticulturae-Amsterdam*) and quality improved in comparison with the previous period. However, there is still room for improvement at the individual level, and the scientific production should be made more homogeneous. Such progress should be consolidated in the forthcoming years.

The development of national and international academic collaborations has given the research unit a good reputation and appeal, increasing its ability to leverage funds at national and international levels including as partner of two H2020 projects related to the urban context.

The national recognition of the unit is undisputable. To consolidate its international recognition, the unit must try to coordinate H2020 projects in the coming years.

The unit's interactions with the non-academic world and the professional environment are excellent, illustrated by the obtention of three CIFRE contracts especially in the horticultural sector (2) but also in the urban context (1) and a national recognition through technical institutes ensuring knowledge transfer.

EPHor's involvement in training through research is also excellent, through staff involvement in teaching, supervision of PhDs and participation in several governing bodies.

The organization and management of the unit and its human resources are again considered excellent, but attention should be paid to the possible loss of human resources concerning technical skills in the foreseeable future.

The scientific strategy for the next five years is in line with the current research activities. It has major strengths, with excellent coherence and partnerships, as well as the ability to create new concepts and solutions. The general scientific orientation of the unit now needs to be translated into well-defined lines of action, focusing on key issues and limiting the potential risks of dispersion.

The evaluation reports of Hceres
are available online: www.hceres.com

Evaluation of clusters of higher education and research institutions
Evaluation of higher education and research institutions
Evaluation of research
Evaluation of doctoral schools
Evaluation of programmes
International evaluation and accreditation



2 rue Albert Einstein
75013 Paris, France
T. 33 (0)1 55 55 60 10

hceres.com

[@Hceres_](https://twitter.com/Hceres_)

[Hcéres](https://www.youtube.com/Hceres)