Research evaluation

FINAL RESUME ON THE RESEARCH UNIT:

Genetics Diversity and Ecophysiology of Cereals (GDEC)

UNDER THE SUPERVISION OF THE FOLLOWING INSTITUTIONS AND RESEARCH BODIES:

Institut National de Recherche pour l'Agriculture, l'Alimentation et l'Environnement – INRAE

Université Clermont-Auvergne

EVALUATION CAMPAIGN 2019-2020

GROUP A

Report published on June, 03 2020

High Council for evaluation of research and higher education

In the name of Hcéres[1]:

Nelly Dupin, acting President

In the name of the experts committee[2]:

Michele Morgante, 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 data submitted by the supervising body on behalf the unit.

UNIT PRESENTATION

Unit name:	Genetics Diversity and Ecophysiology of Cereals
Unit acronym:	GDEC
Current label and N°:	UMR 1095
ID RNSR:	200017467R
Application type:	Renewal
Head of the unit (2019-2020):	Mr Thierry LANGIN
Project leader (2021-2025):	Mr Jérôme SALSE
Number of teams and/or themes:	6

EXPERTS COMMITEE MEMBERS

Chair:	Mr Michele MORGANTE, Università di Udine, Italy
Experts:	Ms Nadia BERTIN, INRAE-Site Agroparc, Avignon (representative of INRAE CSS)
	Mr Philippe GALLUSCI, Université de Bordeaux
	Ms Véronique GRUBER, Université Paris Diderot-Paris 7 (representative of CNU)
	Mr Johann JOETS, INRAE, Gif-sur-Yvette (representative of supporting staff)
	Mr Paul NICHOLSON, John Innes Centre, UK
	Mr Mario PEZZOTTI, Università degli Studi di Verona, Italy

HCÉRES REPRESENTATIVE

Mr Serge DELROT

REPRESENTATIVES OF SUPERVISIONG BODIES

Ms Anne FOGLI, University Clermont-Auvergne

Mr Philippe HINSIGER, INRAE

Mr Emmanuel HUGO, INRAE

Mr Peter ROGOWSKY, INRAE

INTRODUCTION

HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The UMR 1095 Genetics, Diversity & Ecophysiology of Cereals (GDEC) was created in January 2000, under the name "Improvement and Plant Health", by merging the associated Laboratory "Organization and variability of plant genomes (OVGV for 'Organisation et variabilité des génomes végétaux')" and the INRAE Plant Improvement Station. It was renamed "Genetics, Diversity & Ecophysiology of Cereals (GDEC)" when it was renewed on January 2008. Attached to the INRAE Auvergne-Rhône-Alpes (ARA) Centre, the GDEC Unit is a Joint Research Unit combining INRAE [Scientific Departments of Biology & Plant Improvement (BAP), Environment & Agronomy (EA), Plant Health & Environment (SPE)] and the University of Clermont-Auvergne (Biology UFR, Collegium "Life Sciences, Health, Environment"). Since its creation, the facilities of the UMR GDEC have been spread over two distinct geographical sites: a main site on the INRAE de Crouël location (Clermont-Ferrand), which houses approximately 90% of the Unit's staff over more than 3000 m2, and an antenna located on the Campus des Cézeaux (Aubière), mainly hosting university staff, which has recently moved into a new Building completely renovated by the University. This complex, which constitutes the Biology Cluster of the Campus, also houses two other Biology Units, the university part of the INRAE UMR PIAF (Integrative Physics and Physiology of Trees in Fluctuating Environment) and the CNRS UMR LMGE (Microorganisms Genome and Environment Laboratory) as well as facilities dedicated to teaching.

GDEC collaborate with the Cereal Field Phenotyping Experimental Unit (UE INRAE 1375 PHACC) for field experiments. The UMR and the Experimental Unit manage the Pheno3C (Programme for Future Investment (PIA) PHENOME) Phenotyping Platform. GDEC also participates to the CAP20-25 I-site project, to the Federation of Environmental Research (FRE) and the Laboratory of Territorial Innovation (LIT) 'Crops Production' from Auvergne. Finally, GDEC has long-standing interactions and funding from Limagrain.

MANAGEMENT TEAM

Current contract

Director: Thierry LANGIN

Deputy Directors: Pierre BARRET and Fouad BOUZIDI (deceased)

Next contract

Director: Jerome SALSE

Deputy directors: Pierre BARRE, Jacques Le GOUIS, Catherine RAVEL

HCÉRES NOMENCLATURE

SVE1: Agronomie, biologie végétale, écologie, environnement, évolution

SVE2: Biologie cellulaire, imagerie, biologie moléculaire, biochimie, génomique, biologie systémique, développement, biologie structurale

THEMATICS

The research fields of the UMR GDEC initially oriented towards quantitative genetics applied to plant breeding have gradually opened up to other genomics and bioinformatics, evolutionary genomics and paleogenomics, ecophysiology, modelling, and towards more functional approaches. The unit has the skills and tools to develop multidisciplinary projects, covering scales from genes to whole plants.

The projects, developed within 7 research teams, at the interface between fundamental and finalized research, focus on bread wheat.

UNIT WORKFORCE

Genetics Diversity and Ecophysiology of Cereals		
Active staff	**Number 06/30/2019**	**Number 01/01/2021**
Full professors and similar positions	2	2
Assistant professors and similar positions	4	4
Full time research directors (Directeurs de recherche) and similar positions	7	6
Full time research associates (Chargés de recherche) and similar positions	5	6
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)	66	65
Permanent staff	**84**	**83**
Non-permanent professors and associate professors, including emeritus	0	
Non-permanent full time scientists, including emeritus, post-docs (except PhD students)	7	
PhD Students	13	
Non-permanent supporting personnel		
Non-permanent staff	**20**	
Total	**104**	**83**

GLOBAL ASSESSMENT OF THE UNIT

The unit enjoys a considerable visibility and prestige internationally as a reference center for wheat genomic, genetic and pre-breeding research thanks to its excellent record of publications in the last 5 years and to the presence of highly regarded scientists. The publication output both in terms of number as well as impact is excellent as well as the ability in attracting external funding. The activities related to the provision of biological resources and genetic materials are also of excellent international standard. The interactions with industries are outstanding as well as the activities to communicate the excellent science performed within the unit to a broader public. The unit has shown to excel in teaching and training of PhD students, even though a bigger effort could and should be made to attract a higher number of foreign PhD students and of post-doctoral scientists in general to rejuvenate the unit's daily life and make the working place more international. The management activities over the last 5 years have been good but the unit needs to improve the gender balance in the scientist community and increase the scientific animation activities among scientists and among PhD students and post-docs. The presence of different technological platforms that serve the needs of the different teams is definitely a great asset of the unit even though careful and constant monitoring is needed to make sure that they stay up to date in the latest technological developments to continue to be relevant for the teams research. This is the case especially of the platforms for gene validation and sequencing and genotyping, two areas where technology develops very rapidly, and of the bioinformatic platform that is going to be created where the efficacy of the platform model for serving the teams needs has to be properly assessed. The success of the unit in the next 5 years term will be largely determined by its ability to refocus its activities to move swiftly in the postgenomic era through a greater integration of its more basic genomic research and its more applied trait-focused research and will depend strongly upon the identification of clear biological questions and/or relevant traits onto which to apply the sophisticated tools, methods and technologies that have been and will be developed. Careful monitoring of the competitiveness at the international level of some of the teams that remain small in size will be needed.

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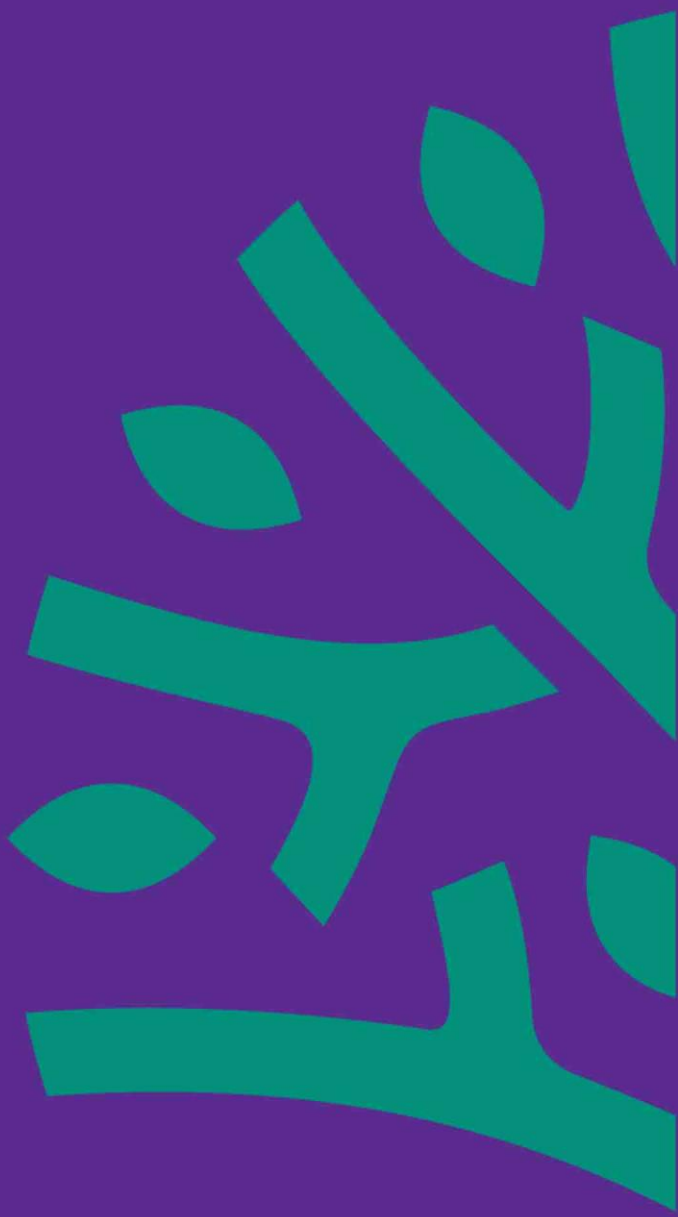
Evaluation of clusters of higher education and research institutions
Evaluation of higher education and research institutions
Evaluation of research
Evaluation of doctoral schools
Evaluation of programmes
International evaluation and accreditation



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