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Nouvelle-Aquitaine-Poitiers
Centre

INRAE



Presentation of the
Nouvelle-Aquitaine-Poitiers centre

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Frédéric GAYMARD
President of the INRAE Nouvelle-Aquitaine Poitiers centre

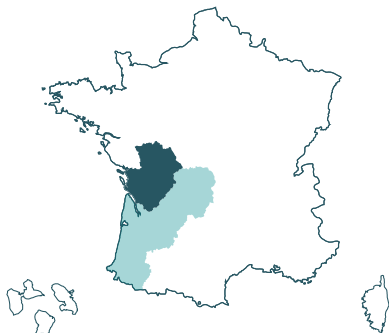
"Located in a region rich in crops and animal husbandry, the INRAE Nouvelle-Aquitaine Poitiers centre is recognised for its expert knowledge of grasslands, livestock production and territories at the service of efficient and sustainable agriculture."

THE NOUVELLE-AQUITAINE POITIERS RESEARCH CENTRE

Located in Poitou-Charentes, now part of Nouvelle-Aquitaine, the teams from the INRAE Nouvelle-Aquitaine Poitiers centre conduct research programmes that contribute to the development of efficient, sustainable agriculture and help protect the environment.

Thanks to a range of specific skills in the area of life sciences, they produce scientific and technical knowledge for various forms of agriculture with a strong focus on alternatives to conventional models, organic agriculture, and mixed crop-livestock farming. Of all the centre's experimental schemes, five leverage a "system" approach applying the principles of agroecology to design and evaluate the technical, economic and environmental performance of cattle, goat, pig and poultry farming systems. To supplement the assets at its disposal, the centre endeavours to rally the skills of the experts in the other INRAE centres and foster synergies with academic and socioprofessional partners to benefit relevant and useful research that promotes innovation and the production of new knowledge.

The Nouvelle-Aquitaine Poitiers centre is a benchmark in Europe for grassland research. Its unique experimental scheme on livestock production and the environment is open to partnership.



FOR SUSTAINABLE AGRICULTURE...

Our activities are fully in line with the region's priorities, which include achieving a good livestock-crop balance, combating climate change, preserving water resources and biodiversity, and ensuring the competitiveness of the agricultural and agri-food sectors. They are carried out as part of the centre's strategic policy, which serves as a five-year roadmap and was drawn up based on INRAE's guidance document in conjunction with the Nouvelle-Aquitaine Bordeaux centre. Focusing on agroecology, they address one of INRAE's priorities for 2025, which is to improve the economic, environmental and social components of agriculture.

... AND ACTIVE PARTNERSHIPS

We coordinate or actively contribute to European research projects, within the framework of the European Union's Framework Program for Research and Innovation. We are also involved in several national projects - mainly funded by the French National Research Agency (ANR) or by the Ministry of Agriculture - and in scientific projects at the regional level, with the Brittany, Nouvelle-Aquitaine, Normandy, Occitanie or Pays-de-la-Loire regions.

Our territorial partners





Agroecology and the design and sustainable management of grasslands, livestock production and territories

The Oasys scheme experiments with a wide variety of forages, including trees and shrubs, to better resist climatic hazards.
© F. Roch, Nouvelle-Aquitaine Region



AGROECOLOGY AND THE DESIGN AND SUSTAINABLE MANAGEMENT OF GRASSLANDS AND TERRITORIES

Focal points at INRAE for research into sown grasslands, the teams at the Nouvelle-Aquitaine Poitiers centre carry out work at all levels, from molecules to territories; they explore the various roles played by grasslands in terms of landscapes, animal feed and ecosystem services.

Three main themes are addressed:

- understanding the operation of grasslands combining several species and designing productive, low-input grasslands resilient to climate change;
- studying the impact of grasslands on the various components of the environment and highlighting the associated ecosystem services in fields of cereal crops and in wetlands;
- designing efficient and sustainable forage systems based on grass and grazing for ruminant livestock.

Units:

- Multidisciplinary research unit on Grasslands and Forage Crops (P3F)
- Experimental unit on Forages, Ruminants and the Environment
- Experimental farm in Saint-Laurent-de-la-Prée (DSLPE)
- Experimental unit on Bees, Landscapes, Interactions and Cropping systems (APIS)
- Resilience contracted unit with the CNRS's Centre for Biological Studies of Chizé (CEBC-Résilience)

Collective scientific schemes:

- European observation and experimentation system for environmental research into sown grasslands (SOERE-ACBB)
- Scheme for designing and evaluating autonomous and

- efficient goat farming systems (Patuchev)
- Scheme for designing and evaluating an agroecological dairy cattle system suited to climate change (Oasys)
- Scheme for designing and evaluating an autonomous organic farming system for wetlands that is favourable to biodiversity (Transi'marsh)
- Extreme climate simulator (Siclex)

Academic partners:

- CNRS
- University of Poitiers
- University of La Rochelle
- Bordeaux Sciences Agro



▲ The Alteravi poultry farming platform, with access to an outdoor run, is certified organic. © C. Maître, INRAE



More information about our current events and research

www.inrae.fr/en/centres/nouvelle-aquitaine-poitiers



The dairy goats of the Patuchev scheme graze on or are fed hay that has been barn-dried to optimise its quality. © R. Delagarde, INRAE

AGROECOLOGY AND THE SUSTAINABLE MANAGEMENT OF LIVESTOCK PRODUCTION

The centre benefits from considerable experimental resources and skills enabling it to tackle the livestock farming challenges of today and tomorrow: meeting the needs of a wide range of consumers while generating income for farmers, avoiding negative environmental impacts, and taking societal expectations into account.

In addition to disciplinary approaches to genetics and reproductive physiology, the centre develops systems approaches to suckler and dairy cows, pigs, goats and poultry. These integrated studies allow it to design and assess livestock production systems with an eye towards sustainability. This work is carried out in conjunction with various local sectors and stakeholders.

🔗 Units:

- Experimental unit on Alternative poultry farming systems
- Experimental unit on Innovative pig farms
- Experimental unit on Forages, Ruminants and the Environment

🔗 Collective scientific schemes:

- Platform for organic poultry farming with access to an outdoor run (Alteravi)
- Platform for organic pig farming (Porganic)
- Animal experimentation platform for pigs (PEA)
- Biology, chemistry and sensory analysis laboratories



➤ PARTNERSHIPS, KNOWLEDGE TRANSFER AND INNOVATION

Agricultural and economic partnerships

➤ **In line with the agricultural orientation of our work**, we have established major partnerships with networks of farmers, development stakeholders (Regional Chamber of Agriculture, Centre for initiatives to develop agriculture and rural environments, Regional federation for organic agriculture) and professional sectors. Our relations with the goat sector are particularly strong as part of the Rexcap (Network of excellence in goat production), especially with its Redcap (Network for goat experimentation and development) component which supplements our Patu Chev scheme. This dynamic has been reinforced by the joint creation, with the French Livestock Institute, of the Joint Technology Unit (UMT) on Sustainable goat farming systems of the future.

➤ **Our work is transferred as part of partnerships with companies and agricultural cooperatives.**

In the seed industry, we host two platforms (one with AgriObtentions and the other with the seed producer Cérience) that use our work to enhance plant improvement. These partnerships have enabled around 15 varieties of grasses and legumes to be included in the French Catalogue of cultivated plants. In the turf sector, we carry out research in partnership with Soreve and Turf Lab to understand how the environment affects the growth and health of lawns.

With regard to goat reproduction, our innovative methods are currently disseminated by companies and agricultural cooperatives (Capgènes-Genoe, Evolution XY) in France and Europe.

Public expertise

The centre hosts two units of the Variety and Seed Study and Control Group (GEVES), a public-interest group that assesses and characterises new plant varieties. One of these units has introduced new decision-making rules for marketing varieties of maize in France and Europe.

Jointly, several of the centre's researchers are experts in the Permanent Technical Committee for Plant Breeding (CTPS), which examines GEVES's work with a view to including varieties in the French Catalogue.

Researchers and engineers from the centre are members of the Expert Committees and Working Groups of the French Agency for Food, Environmental and Occupational Health & Safety (ANSES).

Bees disoriented by a low dose of insecticide



RFID microchip glued to a bee's thorax.
© C. Maître, INRAE

For the first time, a French multi-partner research team observed the effects of a low dose of insecticide on bees. By disrupting their orientation performance and ability to find the hive, this can ultimately lead to the decline of their colony.

As part of this study, our technicians attached microchips to 650 bees from the Ecobee scheme. They observed a high rate of non-return to the hive for foragers previously fed a solution containing an insecticide molecule used in seed coatings in particular to protect crops from pests. This work led Europe to ban the use of certain pesticides in order to protect bees.

Focus on...

THE EUROPEAN BELIS PROJECT

Our Multidisciplinary research unit on Grasslands and Forage Crops (P3F) coordinate the European BELIS (Breeding European Legumes for Increased Sustainability) project aiming to:

- increase the competitiveness of the EU and Associated Countries legume breeding industry by improving the methodologies and the governance structures of the breeding sector;
- design conditions that allow an efficient delivery of the achieved genetic progress to the breeders and seed industry, and to the other actors (registration offices, extension services, feed and food industry, farmers).

The project will focus on seven forage crops and seven grain crops that are currently grown to produce feed (for ruminants – cattle, sheep, goats and monogastric animals – pigs, poultry), food (as is or after processing) or to deliver ecosystem services.



Alfalfa cultivation in France. © B. Cauvin, INRAE

> INRAE: AN OVERVIEW

The French National Research Institute for Agriculture, Food, and Environment (INRAE) is a major player globally in research and innovation. Gathering a community of **12,000 people** with **273 units** including fundamental and experimental research, spread out throughout 18 regional centres in France.

Internationally, **INRAE is among the top research organisations in agricultural and food sciences, plant and animal sciences, as well as in ecology and environmental science.** It is the world's leading research organisation specialising in agriculture, food and the environment.

Faced with a growing world population, climate change, the depletion of resources and declining biodiversity, the Institute has a major role to play in providing the knowledge base supporting the necessary acceleration of agricultural, food and environmental transitions, to address the major global challenges.

> NOUVELLE-AQUITAINE POITIERS CENTRE: KEY FIGURES

Teams

7 units, including 5 experimental units

208 staff members and 24 contract workers

Resources (2018 figures)

A budget of **18.3** million including €3.3 of own resources

12 facilities:

- 5 systems experiments (Alteravi, Oasys, Patuhev, Porganic and Transi' marsh),
- 2 technological platforms for varietal innovation,

- 1 national animal experimentation platform for pigs,
- 1 sensory analysis laboratory,
- 1 European observation and experimentation system for environmental research (SOERE),
- 1 Biological Resource Centre (CRB) for forage crops,
- 1 extreme climate simulator (Siclex)

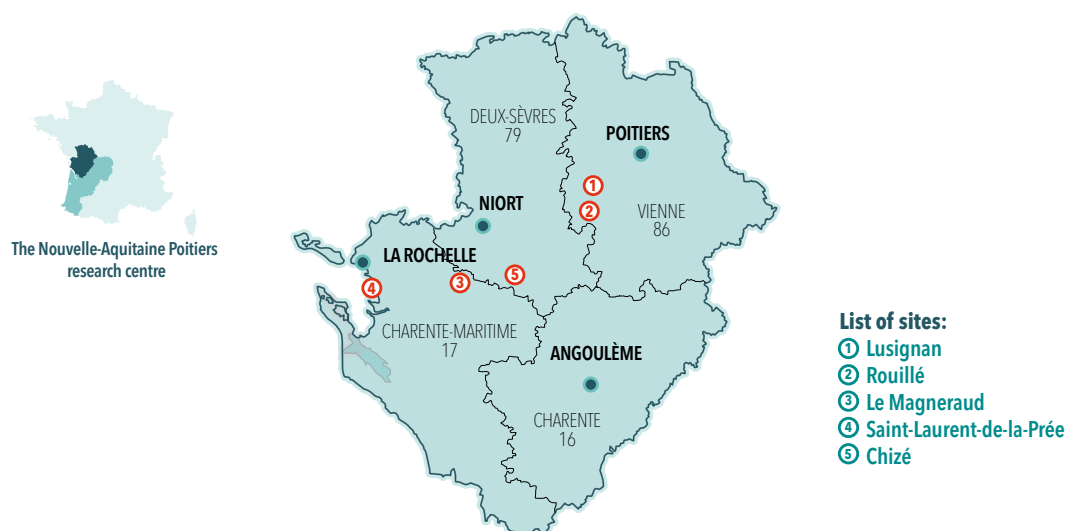
Results (2018 figures)

46 publications in peer-reviewed journals

5 licenses

75 partnership agreements, including 9 with Europe

> MAP OF THE NOUVELLE-AQUITAINE POITIERS CENTRE'S SITES



List of sites:

- ① Lusignan
- ② Rouillé
- ③ Le Magneraud
- ④ Saint-Laurent-de-la-Prée
- ⑤ Chizé

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