

PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA
MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH

DOCTORAL TRAINING OFFER

Institution to be accredited

Setif 1 University Ferhat Abbas
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Sector	Domain
Biological Sciences	SNV

Institution	Faculty	Departments
Setif 1 University	SNV	Biochemistry Microbiology Animal Biology and Physiology Vegetal Biology and Physiology

2- Objectives assigned to doctoral training

- Objectives related to trainer training

This training project aims at research, development, and training supporting Master's and engineering students in the various specialties of biology, included in national and international university training offerings. The objective is to train teachers in the various specialties of biology in order to fill the gap, as the need for them is very significant, and to ensure quality supervision for graduate students. To this end, doctoral students must be taught diverse skills and new, cutting-edge techniques, and involve them in teaching, seminars, and internships. Doctoral students must be well-trained for easy integration into the professional world. Finally, during the completion of their thesis projects, doctoral students' skills must be developed and leveraged, enabling them to integrate flexibly into research units, training institutions, and the socioeconomic sector.

- Scientific and Technological Objectives

Research in the field of biological sciences is of paramount importance. The mechanisms, activities, diagnoses, causes of pathologies, and their control are the main objectives of biological research. Basic research provides solid training by developing sound reasoning skills, as well as developing students' abilities to map out logical strategies based on scientific foundations in order to pose problems and propose solutions with appropriate and suitable protocols. On a practical level, these areas of study are of great importance and contribute to solving several problems and developing techniques and applications that will have definite socioeconomic impacts.

- Socioeconomic Objectives

Doctoral training will create a high-level scientific environment to contribute to the production of new knowledge essential for the growth of the national economy. The Northeast Region of the Algerian Highlands is a very important economic and agricultural hub. Both beneficial organisms/microorganisms and pathogens are listed. The latter, like parasites, fungi, bacteria and viruses; and vectors such as insects, protozoa and nematodes transmit many diseases to humans and domestic animals but also to plants. All these elements are of economic and health interest due to the wide geographical distribution. In addition, all these "parasites" are generally controlled by conventional chemical substances, which have had long-term side effects (accumulation of residues in the food chain, effects on non-target organisms, etc.). The aim of the training, first and foremost, is the development of local training and research capacities by carrying out doctoral theses covering several fields of biology. The project also aims to implement techniques as varied as those of biochemistry, microbiology, molecular biology; but also pathophysiological techniques which prove useful in identifying the major cause of a pathology and to promote the development of real targeted treatments.

The objectives are summarized in the following points:

- Provide research training through high-level teaching, based on the development of courses and the organization of joint or topic-specific seminars, allowing doctoral students to meet and share experiences.
- Conduct research in host laboratories, training specialists to conduct cutting-edge research using a multidisciplinary approach to help address the many crucial socio-economic challenges facing our country.
- Promote science in a topical field, combining theory, observation, experimentation, and modeling by providing complementary skills directly linked to the evolution of science and technology in the field of biological sciences.
- Master the techniques of extraction and identification of plant molecules and the evaluation of their biological properties, as well as their use in various industrial sectors (food, medicinal, cosmetic, and pharmaceutical).

- Design and develop new molecules for therapeutic purposes and drug development. The same theme will address the mechanisms of interaction between substances and drugs and biological systems.
- Interpret analyzed data and propose perspectives. Manage the preparation of a doctoral thesis under the supervision of experienced researchers.
- Train researchers capable of communicating effectively and concisely in French and English in seminars or conferences.
- Acquire autonomy and teamwork.

The main focus of this training is:

Bioactive molecules: pharmacological activities

The specialties covered by this training are:

Biochemistry

Microbiology

Cell physiology and physiopathology

Immunology

Plant biology