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**JOB PROFILE PROPOSAL : CONTRACT TEACHING AND RESEARCH ASSISTANT**  
**Nutrition and Health of Monogastric species**

**INTITULE DU POSTE : Nutrition and Health of Monogastric species**  
**Département d'enseignement d'affectation : SAESP** (Santé de Animaux d'Élevage et Santé Publique)  
**Unité d'enseignement d'affectation : ENSAD** (Elevage, Nutrition, Santé des Animaux Domestiques)  
**Unité de recherche d'affectation : NP3** (Nutrition, Physio-Pathologie, Pharmacologie)

**POSITION DETAILS**

- **Establishment** : Oniris
  - **Recruitment grade** : Contract teaching and research assistant
  - **Section CNECA** : 6
  - **Discipline to be filled**: Nutrition
  - **Type of recruitment** : Contract position
- Colleagues considered for integration monitoring:
- ENSAD (N. Bareille & Juan-Manuel Ariza-Chacon)
  - NP3 (Y. Mallem, JC Desfontis)

**ARGUMENTS AND GENERAL OBJECTIVES**

The agri-food sector produces around 120 million tonnes of animal feed in the European Union every year. The quality of animal feed is essential, as it influences animal health and impacts human health. A large number of people work in this sector. A major player in animal health, however, the veterinarian is rarely consulted in the first instance to establish animal rationing. It will only be requested in case of nutritional problem with high health repercussions (for pets, including frequent chronic diseases: chronic kidney disease, digestive disorders, metabolic diseases, overweight and obesity...), or with a high economic impact (reproductive disorders, mortality, etc.) and not in prevention where its role is essential. The current global context is tending to a major change and diversification of protein sources, with the increasing use of plant-based products. This evolution impacts the carnivore food sector. Moreover, the medium- and long-term impact of this on animal health is still very poorly understood.

To adapt veterinary interventions to the professional and societal expectations of the sector, the role of the veterinarian must be defined and developed by positioning nutrition management in the global context of sustainable development in connection with the «One Health» approach, to design preventive approaches adapted to various feeding systems, and to master clinical nutrition to correct problem situations. This implies a sound knowledge of the basics of nutrition, food systems and their evolution, and levers of action to (1) improve disease prevention through diet thus reducing treatment uses, and (2) to adapt diets in case of illness. Students in veterinary studies will have to appropriate, in addition to the solid foundations stated above, the necessary tools to meet the demands of professional life, both in the traditional context of customers (pets or livestock) and in that of industrial activity.

The research activity of the teaching and research assistant is part of the orientations displayed by the establishment project and the program of the NP3 unit in coherence with the teaching activities. The NP3 Unit studies, through a multidisciplinary approach, the pathophysiology, prevention, and treatment strategies of overweight and its metabolic and endocrine consequences. The use of plant-based products in the prevention and treatment of chronic diseases such as overweight is an emerging area of current veterinary medicine. The investigation of the underlying effects and

mechanisms of action by which these products act in the body, contributes to their rational use and the development of innovative nutraceutical strategies.

## **MISSIONS**

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### TEACHING :

#### *- Core veterinary curriculum*

Design and delivery of lectures, tutorials and practical works, and clinical courses for VET2, VET3 and VET4 students, dealing with (1) the basics of food and nutrition for all species and (2) the relationships between nutrition and health in the main monogastric species (notably companion carnivores and farm animals (pigs, poultry, fish)). The links between nutrition and the prevention or occurrence of different diseases will be particularly studied.

#### *- Clinical teaching*

In addition to the lectures and tutorials, the lecturer contributes to the clinical training of students by providing clinical nutrition consultations for companion animals at the VTH (Veterinary Teaching Hospital) and by supervising students in the resolution of complex cases from VET5 to resident level on the basis of one clinical morning per week.

#### *- Teaching a mixed audience of doctors, engineers and veterinary surgeons*

Participation in teaching courses on sustainable food systems and on approaches to modulating the composition of animal products through their feed (nutritional transfers). Design and development of distance learning courses in this area.

#### *- Optional courses in veterinary curriculum*

Teaching clinical nutrition for companion animals.

### RECHERCHE

The research missions will take place within the NP3 Research Unit. The proposed research project will evaluate the prevention of overweight through dietary supplementation with plant-derived polyphenols (in dogs, cats, and rodents, healthy or exposed to high-fat diets). The general objectives will focus on the evaluation of the effects and mechanisms involved in the action of plant flavonoids and plant iridoids alone or associated. A better understanding of their effects on adipose tissue, their impacts on inflammation, oxidative stress and the intestinal microbiota is a prerequisite to better understand the relationship between polyphenol-rich diets and their effects on overweight and its metabolic consequences.

The scientific relevance of the project is based on an integrated approach, in which the questions asked will be addressed longitudinally (in vivo and in vitro approaches, cell level and isolated organs). The ambition is to contribute to the development of innovative nutraceutical strategies based on the use of the therapeutic potential of plant polyphenols and in particular the synergy of action conferred by flavonoid and iridoid compounds. The feasibility of the project is based on the expertise and experimental facilities of NP3 Unit, in particular in nutrition, nutraceutical and (pre-)clinical animal trials, on the expertise of its university partners (national and foreign) and on the contribution of the economic partners of NP3 Unit.

## **CANDIDATE PROFILE**

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With a PhD thesis in the field of animal science and/or animal nutrition, and engineering training or ideally a veterinary doctor's degree or equivalent diploma allowing the practice of veterinary medicine in France, the candidate must have teaching skills, fluency in English and a taste for teamwork and relations with professional partners. Previous teaching and research experience in the field of nutrition would be an advantage. A commitment to obtaining the European specialist diploma in nutrition will be encouraged for veterinary candidates.