

The fate of supplemented trace elements in the organism of farm animals: quantification, imaging & speciation

Trace elements are essential for the maintenance of a number of physiological processes in animals. The supplementation with zinc, copper and manganese in the diet of food-producing animals is therefore a common practice to achieve optimal performance and welfare. However, their fate in the animal's organism is not yet fully understood.

Your objective will be analytic-chemical method developments that combines element quantification by ICP-MS with element-specific chemical imaging techniques (NanoSIMS, ToF-SIMS) and synchrotron techniques (XRF, XAS) to determine the concentration, localization, and chemical speciation of trace elements in the organism of farm animals.

This Thesis is part of the joint laboratory SPECIMAN of the partners IPREM and Animine started in 2021. Currently three scientific publications are in progress. SPECIMAN is funded by the French Ministry of Research (LabCom program).

High quality partners and conditions:

- Animine is a French company, supplier of added-value trace minerals globally. More info at: www.animine.eu
- The Institute of Analytical Sciences and Physico-Chemistry for Environment and Materials (IPREM). More info at: <https://iprem.univ-pau.fr/fr/index.html>
- The French National Centre for Scientific Research (French: *Centre national de la recherche scientifique*, CNRS) is the French state research organisation^[2] and is one the largest science agency in Europe. More info at: www.cnrs.fr
- The Université de Pau et des Pays de l'Adour (UPPA), Doctoral School of Exact Sciences and their Applications (ED 211 SEA): ed-sea.univ-pau.fr

Thesis supervisors:

- Prof. Dirk Schaumlöffel (thesis director IPREM and director of SPECIMAN)
- Dr. Maria Angels Subirana (thesis co-director IPREM)
- Marion Taris (thesis co-director Animine)

Candidate profile:

- Master or equivalent degree with an emphasis on analytical chemistry/biology
- Experience in chemical imaging is a plus!
- Motivation for interdisciplinary work
- Good English communication skills, both in verbal and written form

Thesis starting date: 12/2024, for 36 months (CIFRE funding 100%)

Location: Pau, France

Please send a cover letter, your CV, copies of diplomas, and contact information of two references. Application is open until the position is filled.

Contact: dirk.schaumloeffel@univ-pau.fr