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**Internship offer at Master 2 or engineer level (duration 6 months)**

**Analysis of phenolic compounds of plants of interest for a triple benefit in ruminant feed (animal health, human health and the environment)**

**Context**

This internship is part of a collaborative and multidisciplinary project funded by INRAE. His primary objective is to establish the proof of concept that the introduction of a selection of plant extracts containing a variety of active ingredients in ruminant feed may help simultaneously on 1) the oxidative stress inducing pathologies in animals, 2) the emission of greenhouse gases (GHG) during rumination by animals and 3) the risk of colorectal cancer in humans consuming the meat of this animal (One Health approach).

**Goals**

The main objective for the SQPOV Unit is to measure the antioxidant capacity of around thirty plants and plant extracts selected by the project partners for their potential to exercise the benefits 1) and 3) described above. The most active extracts will be incorporated into a diet base and incubated in fermenters with ruminal fluid under conditions simulating rumination to assess their potential to modulate GHG emissions. The monitoring of phenolic compounds during fermentation will provide information on their stability under these particular conditions of digestion and their metabolisation by rumen microorganisms.

In this context, the student will conduct various activities including:

 - Bibliographic analysis

 - Implementation of a test to evaluate the antioxidant capacity of extracts and of different plants after preliminary extraction

 - Molecular characterization of the phenolic compounds of the extracts / plants selected by

 HPLC / DAD / MS

 - Molecular characterization of phenolic metabolites generated during fermentation by

 HPLC / DAD / MS and / or GC-MS

**Required skills**

The candidate will be in bac + 5 training in chemistry / biochemistry / biology / food science with skills in analytical chemistry and / or physical chemistry.

**Application (cover letter / CV / names of 2 referees) to be sent to:**

Dr Claire Dufour (claire.dufour@inrae.fr)

Dr Pascale Goupy (pascale.goupy@inrae.fr)

Mr Christian Ginies (christian.ginies@inrae.fr)

**Internship location**: SQPOV Unit, INRAE ​​PACA Center, Avignon

**Start of the internship**: ideally in January 2022