

Internship offer

Study of technological processes to improve the quality of garlic seed and consumption

LOCALISATION : INRAe Avignon, Site Saint Paul, Equipe Qualités et Procédés - Avignon Université

DATE : February or April 2023

DURATION : 3 to 6 months

CONTEXT :

Since the beginning of the 2000s, the French garlic industry has been severely hit by fusariosis. The pathogens present in the French production basins have recently been identified: *Fusarium proliferatum* and *F. oxysporum*. During storage, the cloves turn brown and become unfit for consumption and unusable as garlic seed. At present, there is no way to control this fungal disease. Within the framework of the GARLIC project, the objective of the proposed internship is to identify and characterize alternative methods to chemical phytosanitary products to eliminate *Fusarium* from cloves.

DESCRIPTION :

At the University of Avignon, two physical methods are being tested: UV-C treatment, which reduces microbial contamination of plants and stimulates plant defense systems, and thermal treatment, which reduces the development of fungi and maintains bulb quality. This internship follows a first work initiated in the spring of 2022 which allowed to define dose ranges. The objective is to continue to study the dose-effects following the application of UV-C and thermotherapy treatments. The work will then allow to deepen the effect of the treatments on contamination, clove quality and germination capacity which must be maintained (criterion linked to the certification of garlic seed varieties). The impact on tissue structure will also be analyzed by histological studies. Follow-up trials after inoculation will be set up in order to better understand the pathways of elimination of *Fusarium* in the tissues of garlic cloves, and also to avoid penetration into healthy cloves.

SKILLS :

- Knowledge in Biology, Microbiology and Vegetal physiology
- Attraction for experimental work
- Autonomy
- Spirit of analysis and synthesis
- Bachelor to Master levels

HOW TO APPLY ? Contact Florence CHARLES : florence.charles@univ-avignon.fr, 04.90.84.22.08
Attach CV and cover letter