

TOPIC "Improved resistance of grapevine plants by beneficial bacteria under heat and/or water deficit conditions: omic approaches»

A 2-year postdoctoral position in grapevine immune response and adaptive mechanisms to drought and heat stress is available at the Research Unit "Induced Resistance and Plant Bioprotection", University of Reims, France.

Project description

The aim of this project is to investigate how beneficial microorganisms, part of the microbial communities present in soil and in plants (as rhizospheric or endophytes), play a significant role in grapevine resistance to grey mold and downy mildew. Understanding the mode of action of such microbes (bacteria) on grapevine immunity under non-stressed and stressed conditions will help to develop innovative microbial strategies to be used in sustainable viticulture.

The research focuses on a set of already available beneficial bacteria and new ones from the project partners that will be thoroughly studied and used in greenhouse experiments on grapevine cultivars differing in their susceptibility to diseases. Additionally, defense mechanisms triggered by beneficial bacteria and induced grapevine resistance to pathogens will be unraveled through molecular and a transcriptomic/RNA-seq analysis coupled with a metabolomic approach. The impact of heat and/or water deficit on grapevine resistance / resilience to pathogens will then be evaluated.

Required skills: We are looking for a talented young PhD scientist with a strong background in molecular Plant-Microbe Interactions and in induced plant resistance towards pathogens. The successful candidate should have excellent quantitative skills in transcriptomic/metabolomic and RNA-seq analysis. He/she should have experience in conducting bioassays with microbial plant pathogens and must have a compelling publication record in international journals. A good English knowledge is required, together with the availability to attend a significant period (not less than 1 year) abroad, in a world-leading lab involved in research related to the research topic.

Appointment

The starting date is flexible, but should preferably be no later than April 2017. The full-time appointment will be on a temporary basis for a maximum period of 2 years (initial appointment will be for a period of 12 months and after satisfactory evaluation it can be extended for a total duration of 2 years).

How to Apply

Applications should include a short cover letter, a detailed CV, and the names and contact addresses of two referees from which information about the candidate can be obtained. Applications should be sent to ea.barka@univ-reims.fr or aziz.aziz@univ-reims.fr.