vWISE Visiting Agreement (Annex 3)

Intermediate / Final activity report

WP Number : 1
WP Tittle : Vine adaptation to climate changes
Beneficiary/partner :
WP leader : UNITO

Visiting Researcher :

Name : Helena Ferreira Lopes da Silva Santos

Position : PhD student

Home Institution, country : BioISI, Faculty of Sciences, University of Lisbon, Portugal

Host Institution : Stellenbosch University, South Africa

Scientific contact person at the institution : Dr. John Moore

Mobility period (from …to…) : From 11th February to 26th May.

General progress of the project

Based on the research mobility project, please indicate if the project:

a) has fully achieved its objectives and technical goals for the period;
b) has achieved most of its objectives and technical goals for the period with relatively minor deviations;
c) has failed to achieve critical objectives and/or is not at all on schedule.

a)

Project achievement
During my stay, I optimized two analytical protocols for cell wall composition analysis specific for grape samples. After optimization, the samples of the study were processed and are currently under informatic analysis, as the amount of data generated was huge.
I had the chance to learn from colleagues at the lab how to use new equipment, as well as develop autonomy in the lab, solve problems and overcome obstacles. While in mobility, I attended two online conferences, and guided a Master student in his project.
Despite the multiple issues regarding Covid, the department being under renovation, multiple load shedding and uncooperative technicians, I succeded in my project, reached the project's goal, and grew as a researcher. My critical thinking, adaptability and self-determination were of critical

importance to succede. I'm currently preparing an article publication with the data I acquired during my agreement, and I will present part of the result in PBE2021 online conference.
Briefly, I learned how to process samples for AIR extraction to obtain cell wall rich fractions, I optimized a phenol-sulphuric acid protocol for all polysaccharides quantification (including cellulose), and I developed a CDTA and NaOH dialysis-free cell wall fractions for GC analysis, and I learned how to use new software for GC-FID analysis. After finishing the informatic analysis, the data acquired will bring better understanding of cell wall metabolism upon infection by different pathogens in both susceptible and tolerant cultivars.