



**HAL**  
open science

## Water deficit impacts grape development without dramatically changing thiol precursors level

Luciana Wilhelm de Almeida, Laurent Jean-Marie Torregrosa, Gabriel Dournes, Anne Pellegrino, Hernan Ojeda, Aurélie Roland

### ► To cite this version:

Luciana Wilhelm de Almeida, Laurent Jean-Marie Torregrosa, Gabriel Dournes, Anne Pellegrino, Hernan Ojeda, et al.. Water deficit impacts grape development without dramatically changing thiol precursors level. Giesco 2023, Jul 2023, New York (NY), United States. . hal-04588472

**HAL Id: hal-04588472**

**<https://hal.inrae.fr/hal-04588472v1>**

Submitted on 27 May 2024

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

# WATER DEFICIT IMPACTS GRAPE DEVELOPMENT WITHOUT DRAMATICALLY CHANGING THIOL PRECURSOR LEVELS

L. Wilhelm de Almeida<sup>1,2</sup>, L. Torregrosa<sup>1,2</sup>, G. Dournes<sup>3</sup>, A. Pellegrino<sup>2</sup>, H. Ojeda<sup>1</sup> and A. Roland<sup>3</sup>

<sup>1</sup> Unité Expérimentale de Pech Rouge, INRAE, 11430 Gruissan, France

<sup>2</sup> UMR LEPSE, Montpellier Uni, CIRAD, INRAE, Institut Agro Montpellier, 2 Place Viala, 34060 Montpellier, France

<sup>3</sup> SPO, Univ Montpellier, INRAE, Institut Agro, Montpellier, France

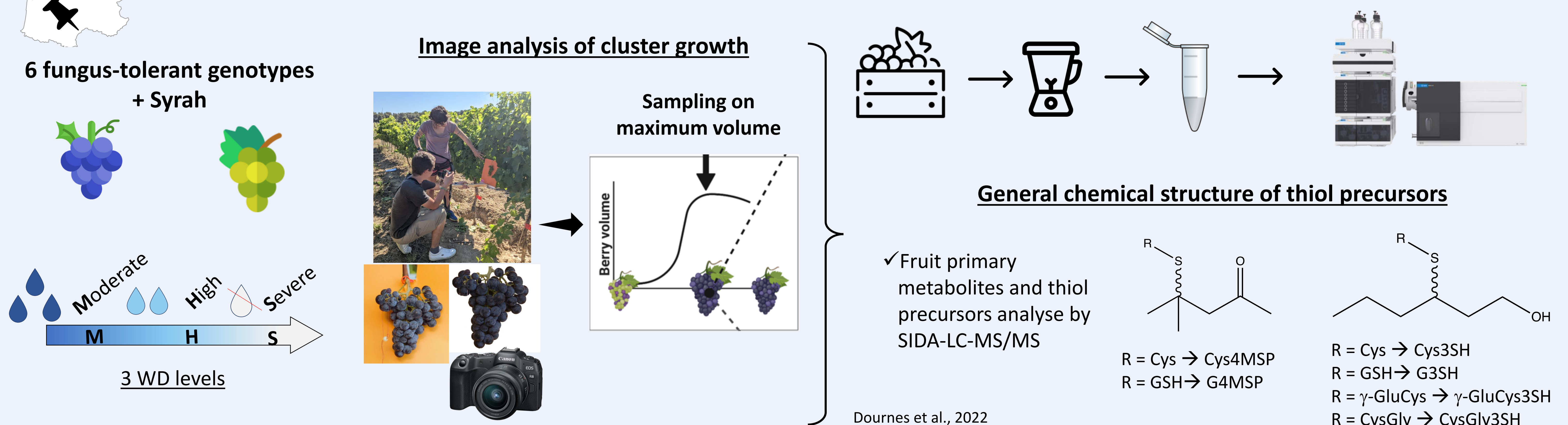
## Context

- New fungus-tolerant grapevine varieties appears as promising solution to reduce chemical input.
- They also constitute an option to adapt plant material to future climatic conditions, as water deficit (WD)
- WD is known to impact on the regulation of primary and secondary metabolites accumulation
- Thiols (3SH and 4MSP), are powerful aromatic compounds involved in the specificity of varietal wines.
- Yet, little is known about the effects of WD on the thiol aromatic potential of new varieties.

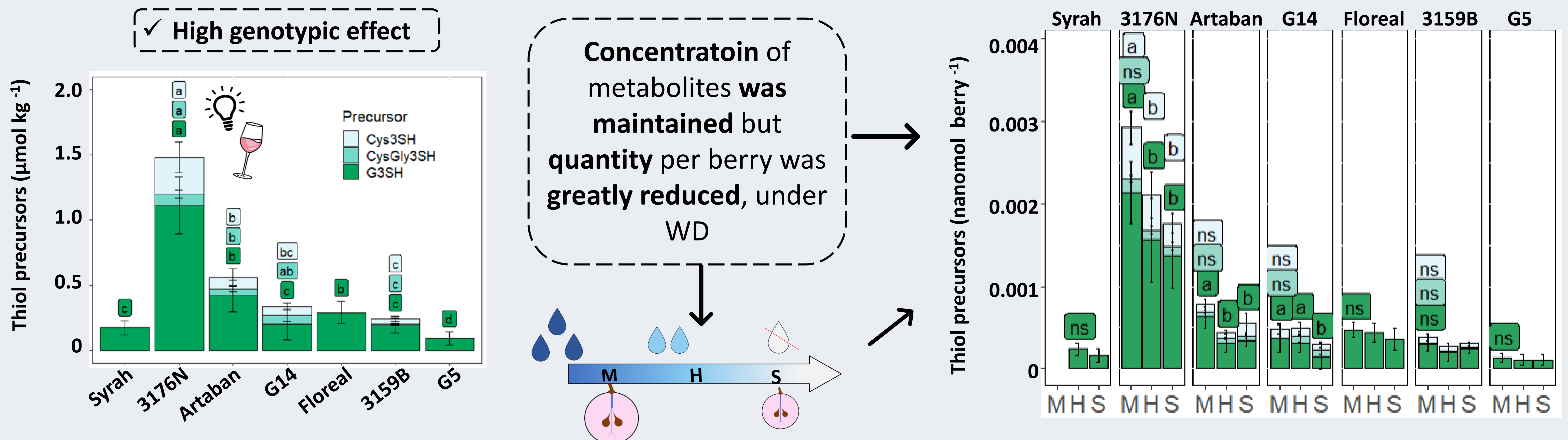
## Objectives

- Study the impact of drought on thiol precursors accumulation in fungus-tolerant genotypes' grapes
- Evaluate the metabolic trade-offs between thiol precursors and primary metabolites

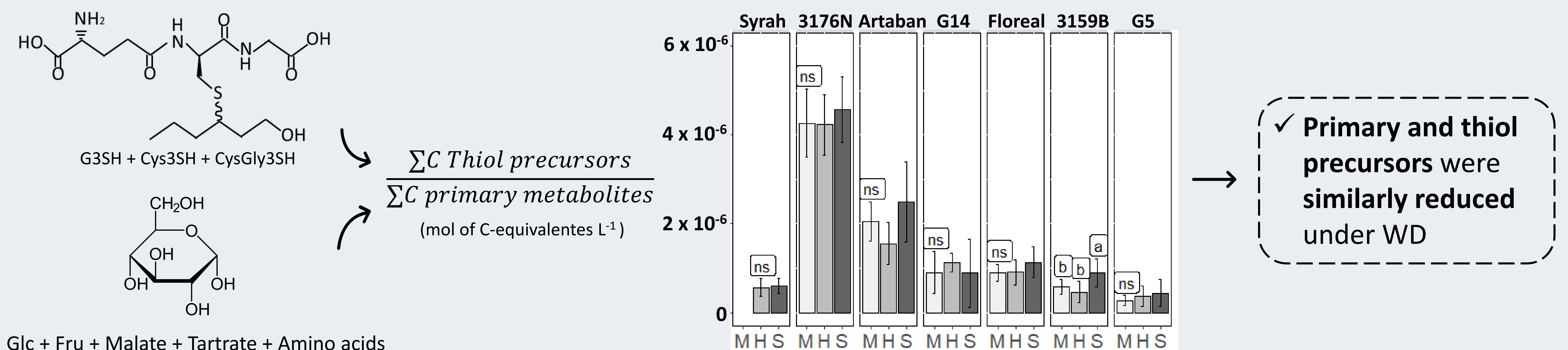
## Phenotyping thiols precursors at physiological maturity



## RESULTS: « THE SIZE OF THE BERRY MATTERS »



## “ Does WD modify the quantity of C allocated to primary and secondary metabolites? ”



Drought reduces the production of metabolites per fruit & plant without increasing thiol compounds in the grape

**Next steps:** Perform under controlled environment to target specific WD levels and study the response at the single berry level