

# PHENOLOGICAL CHARACTERIZATION OF A WIDE RANGE OF *VITIS VINIFERA* VARIETIES

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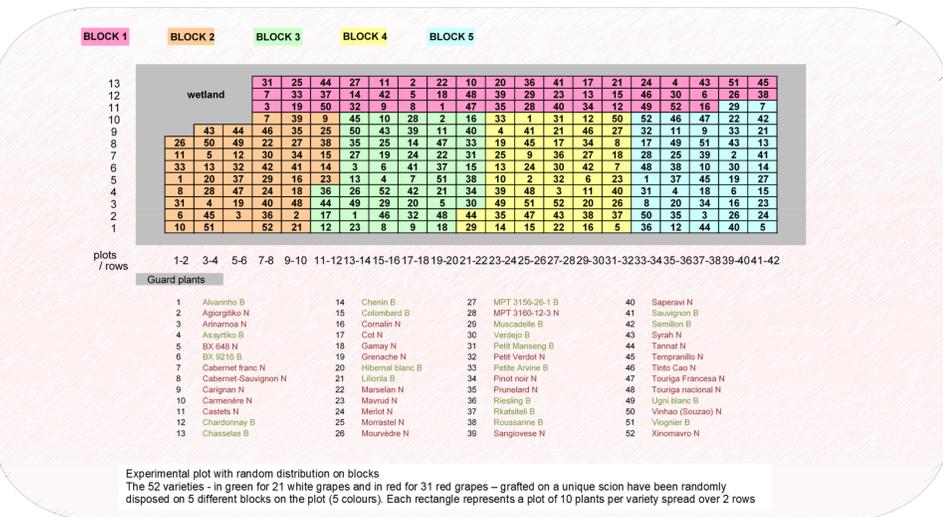
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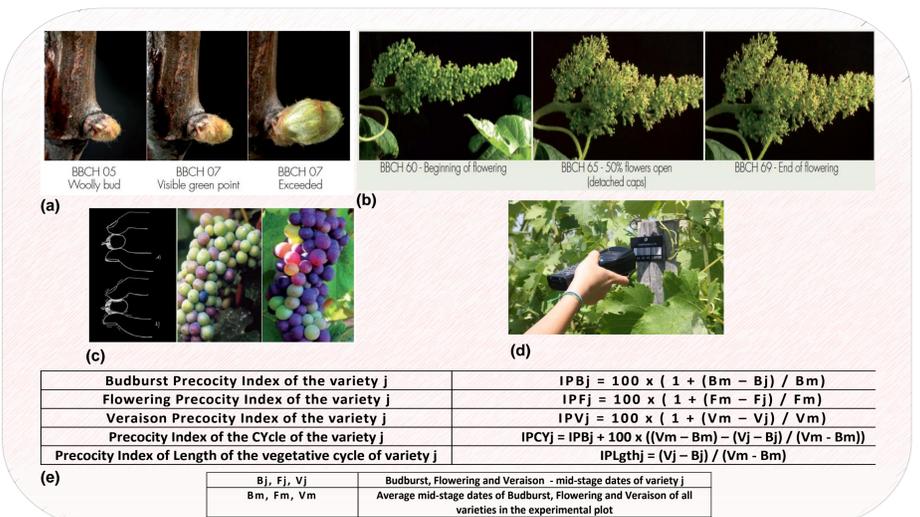
## INTRODUCTION

In order to study the impact of climate change on Bordeaux grape varieties and to assess their adaptation capacities to new climatic conditions in this wine region, an experimental common-garden vineyard composed of 52 grape varieties planted in a randomized block design was established in 2009 at the INRAE Bordeaux Aquitaine. Among many parameters, the three main phenological stages of budburst, flowering and veraison were closely monitored each year from 2012 to 2021 with each observation carried out on four independent replicate blocks in order to classify the varieties according their phenology.

### Experimental vineyard

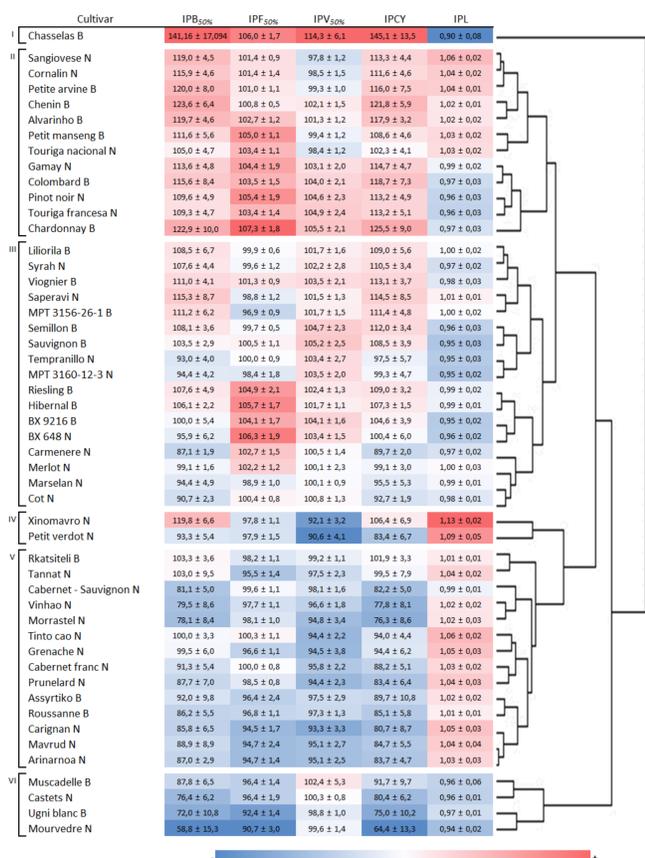


### Phenological stages and precocity indices



VitAdapt project, an experimental program to study the adaptation of a wide range of *Vitis vinifera* varieties to climate change in Bordeaux vineyards Destrac and Van Leeuwen (2016)

### Classification of varieties by phenological behavior

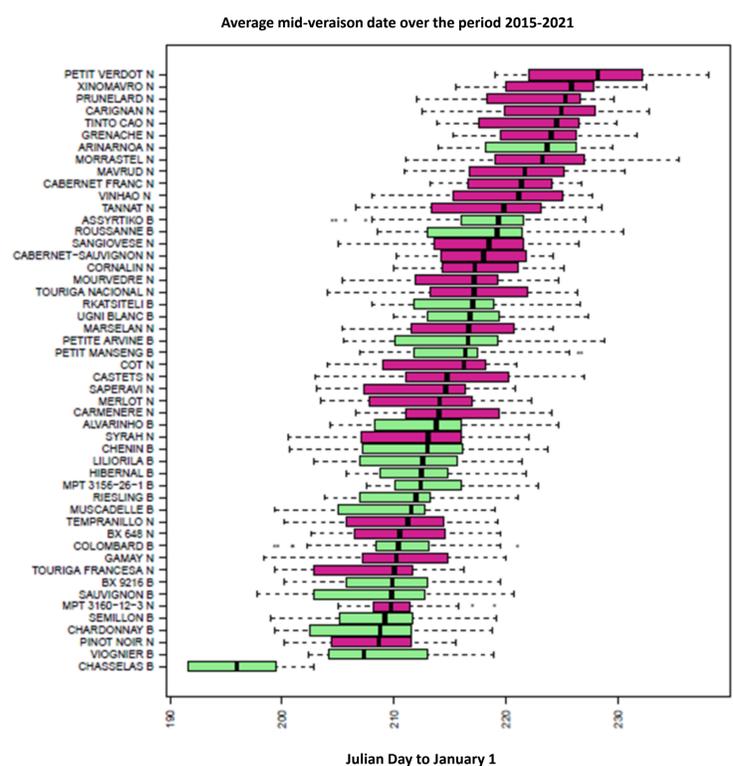


Six groups of varieties identified based on phenological behavior

- Difference of timing of the subsequent developmental stages
- Variability of the overall precocity of the cycle
- Total length of the cycle between budburst and veraison

- Three main phenological stages observed : (a) the budburst BBCH 07 (b) the flowering BBCH 65 and (c) the veraison BBCH 85 according to Destrac-Irvine *et al.* (2019)
- Phenology rating system by barcode for the studied stages (d) Assessment of phenology when 50% of the organs reach the studied stage on BBCH scale
- Precocity indices (e) calculated each year for all varieties using the method of Barbeau *et al.* (1998)

### Classification of varieties by date of mid-veraison



- Rankings of varieties according to dates of mid-veraison show great variability
- Dates of mid-veraison stretch over 40 days

### Conclusions and perspectives

- Statistically significant differences in phenology between the varieties
- Different varieties may help with adaptation to the new climatic conditions
- The study should be completed using additional phenological data from other Bordeaux terroirs

### References

- Destrac A. and Van Leeuwen C., 2016. Climwine, Full text proceedings, 165-171.
- Destrac-Irvine *et al.*, 2019. IVES TR <https://doi.org/10.20870/IVES-TR.2019.2586>
- Barbeau *et al.*, 1998. J. Int. Sci. Vigne Vin, 32, n°2, 69-81.

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BORDEAUX

