

# Impact of pre-fermentative mash cooling and heating on anthocyanin concentration and color of Teran wines

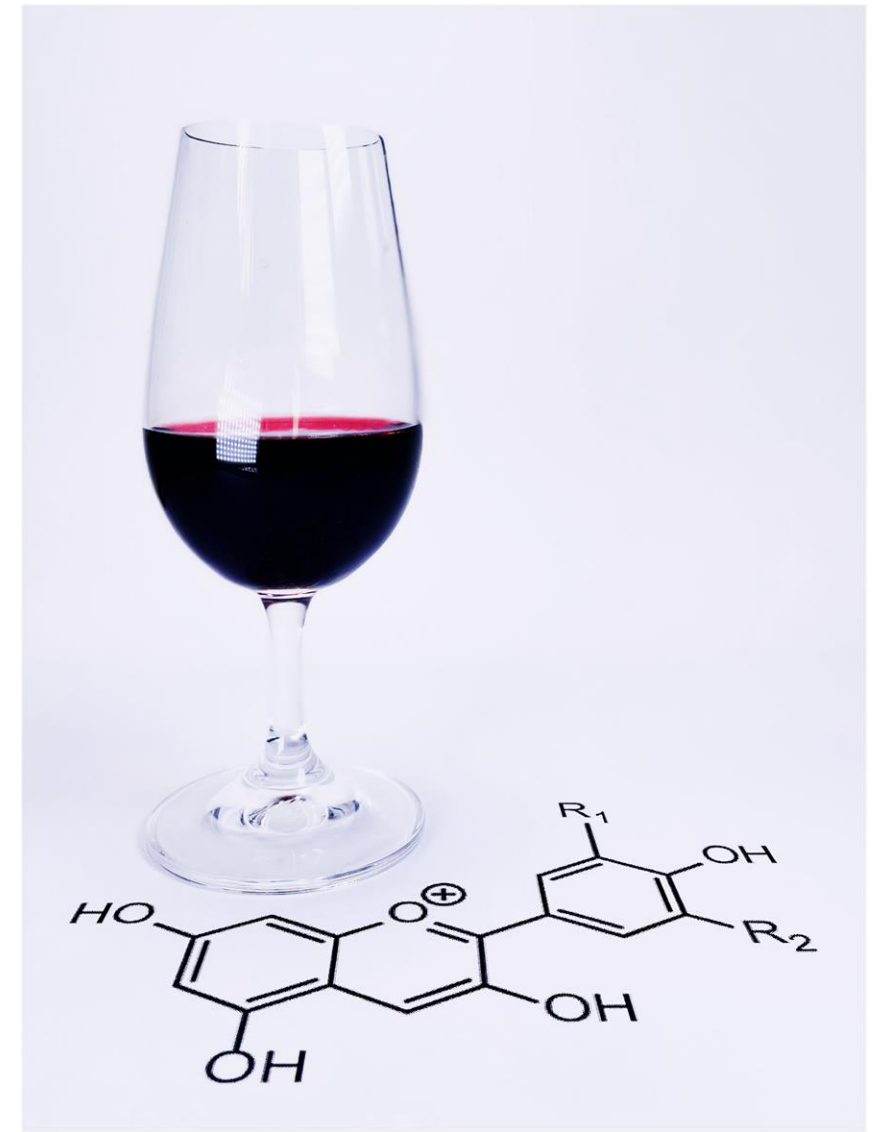
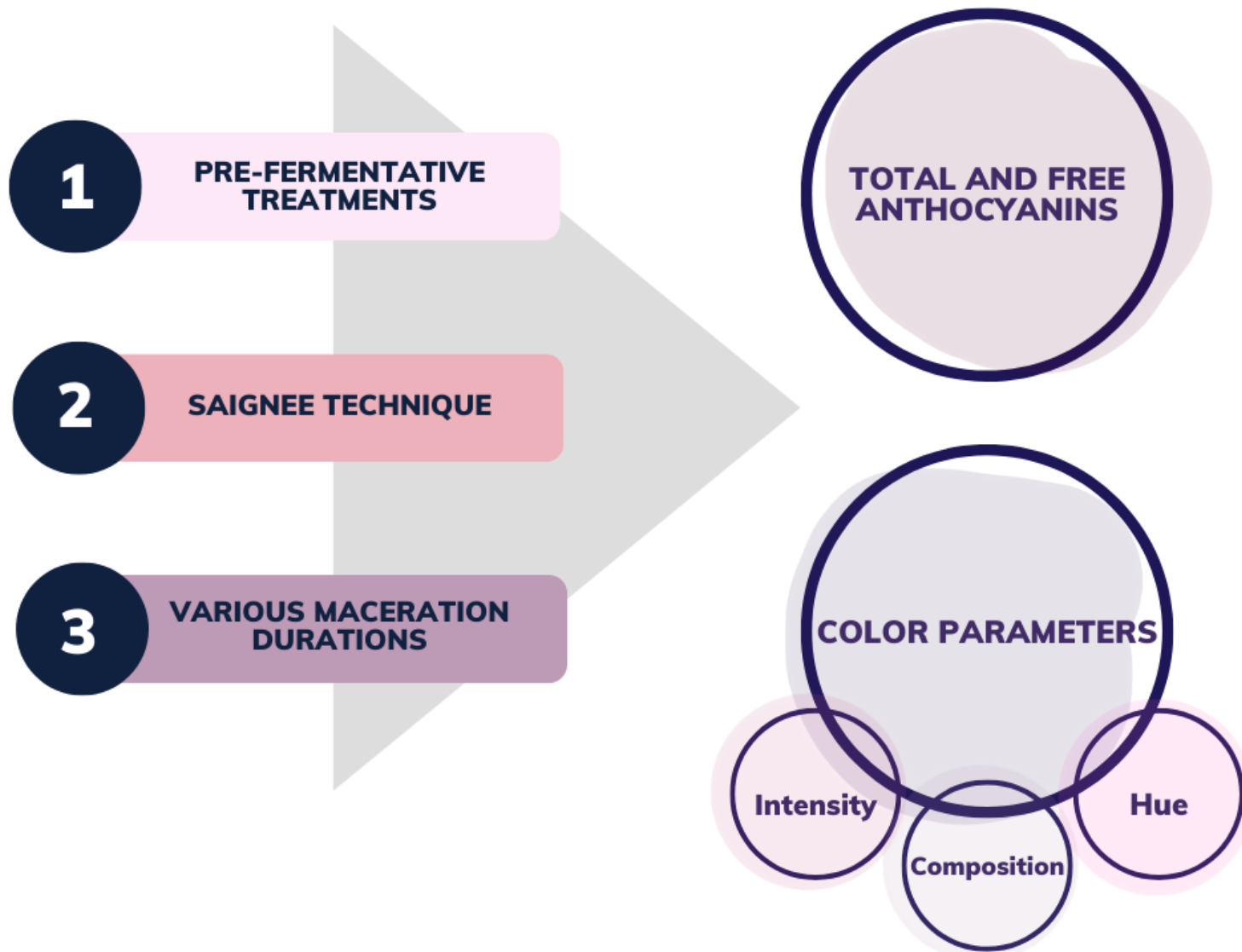
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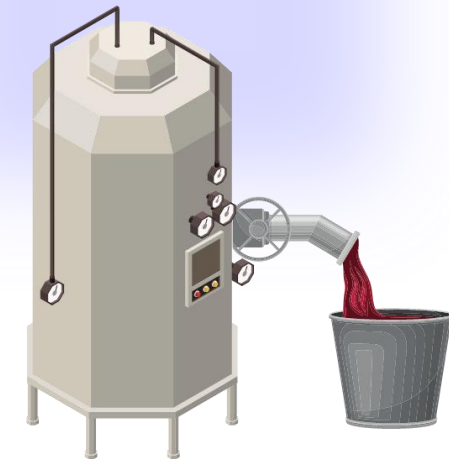


# AIM



# INTRODUCTION

- Pre-fermentative **mash cooling** ❄️
  - Cold maceration
  - Cryomaceration
  - Cold soaking
- Keeping crushed grapes at low temperatures
  - 5 – 10 °C
- Pre-fermentative **mash heating** 🔥
  - Up to 24 h of heating at the same temperature
  - 50 – 80 °C
- ***Saignée*** technique - pre-fermentative juice runoff
  - Increasing skin to juice ratio



# MATERIALS AND METHODS

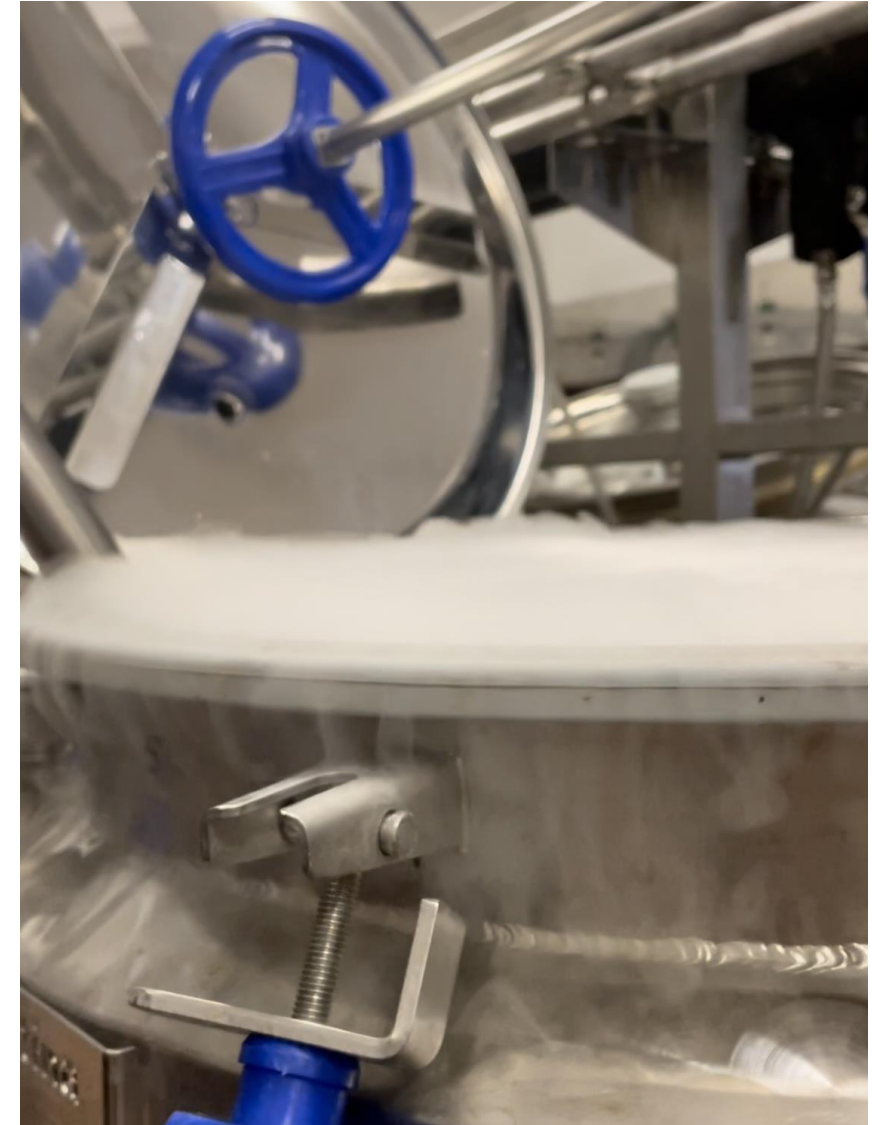
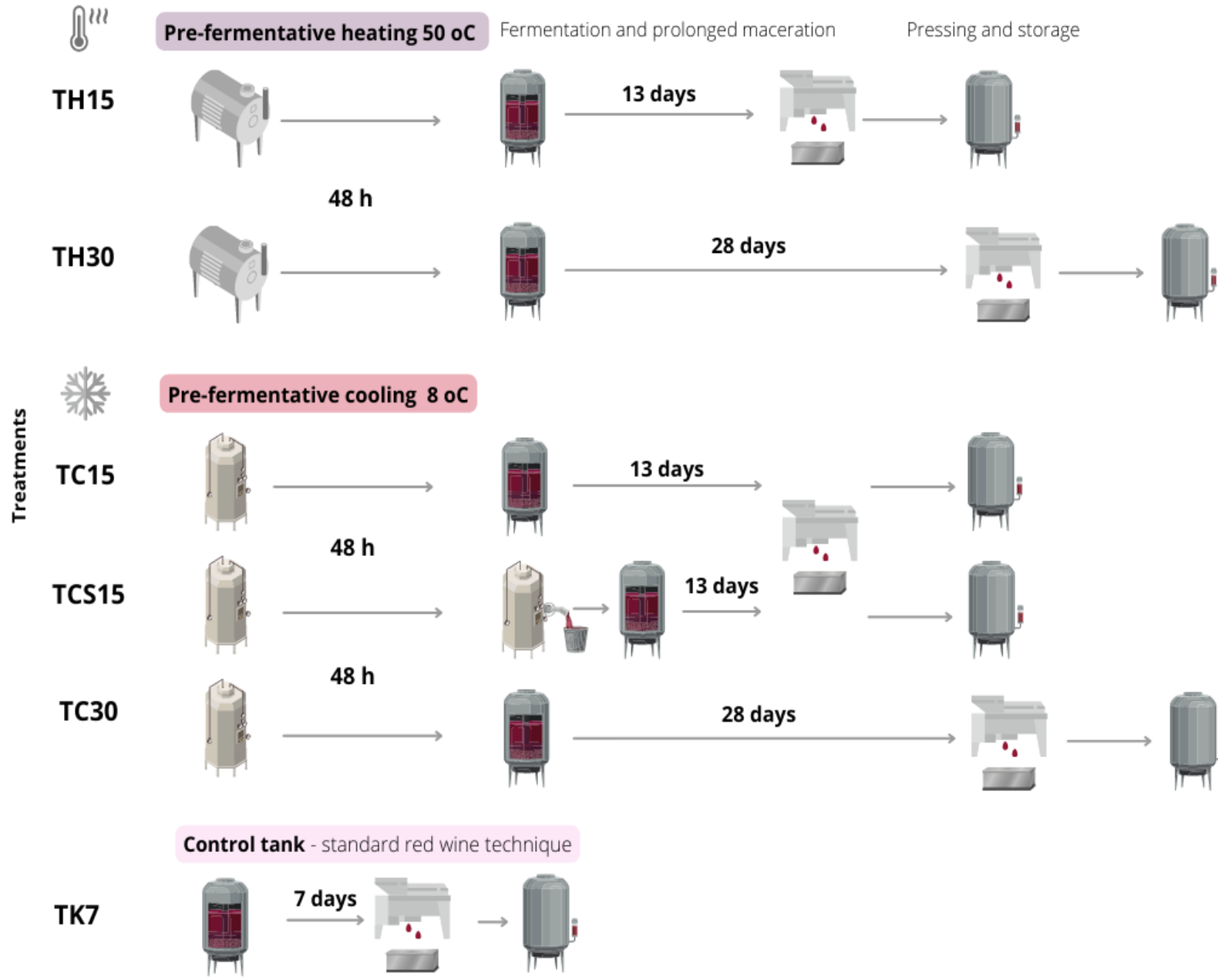


# HARVEST

- Grapes of cv. Teran (*Vitis vinifera* L.) were grown in Western Istria
- The harvest was held in 2020
- Grapes were destemmed, crushed and homogenized
- Grape mash was equally divided



# PLAN OF THE EXPERIMENT



# ANALYSIS

## SPECTROPHOTOMETER

**1** TOTAL ANTHOCYANINS

Di Stefano, 1989

**2** FREE ANTHOCYANINS

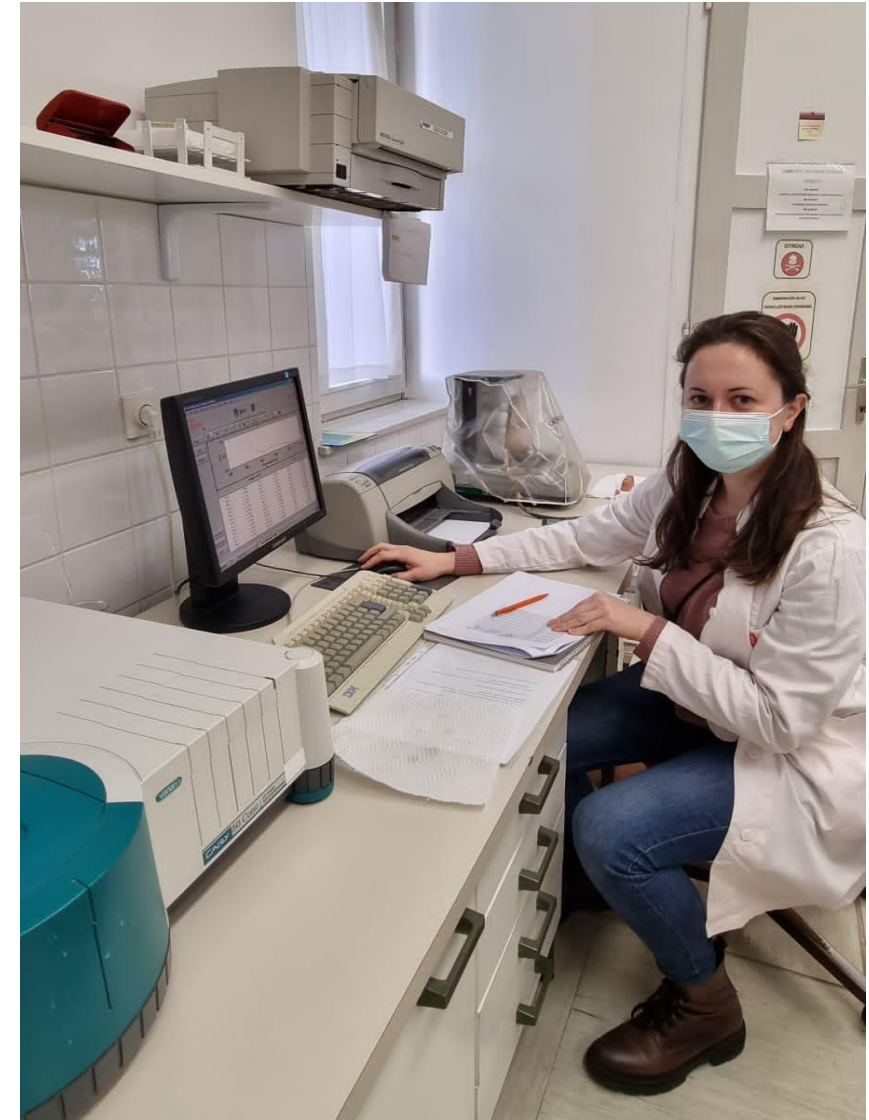
**3** COLOR INTENSITY

Glories, 1984

**4** COLOR COMPOSITION

**5** COLOR HUE

Sudraud, 1958

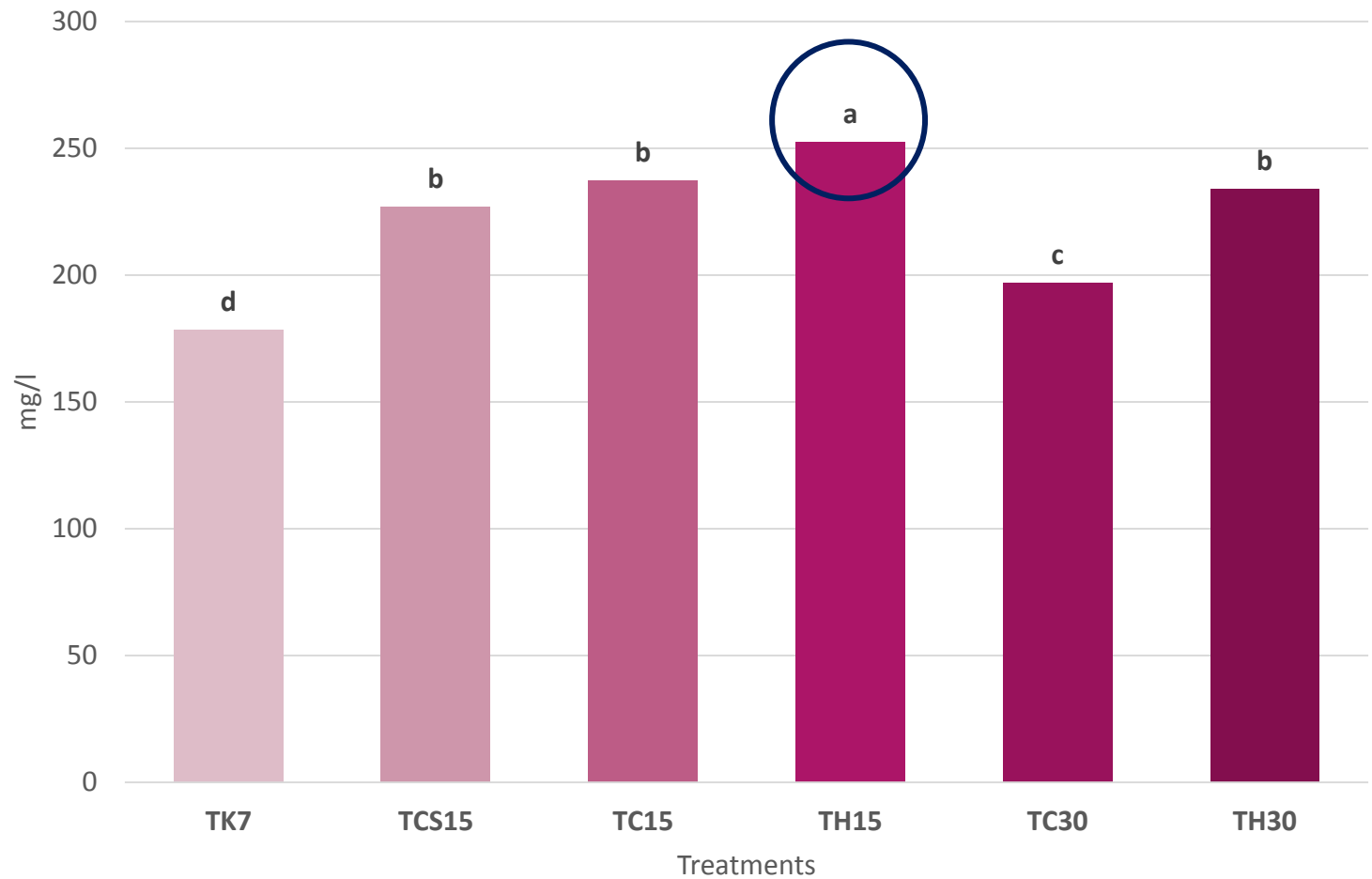


# RESULTS





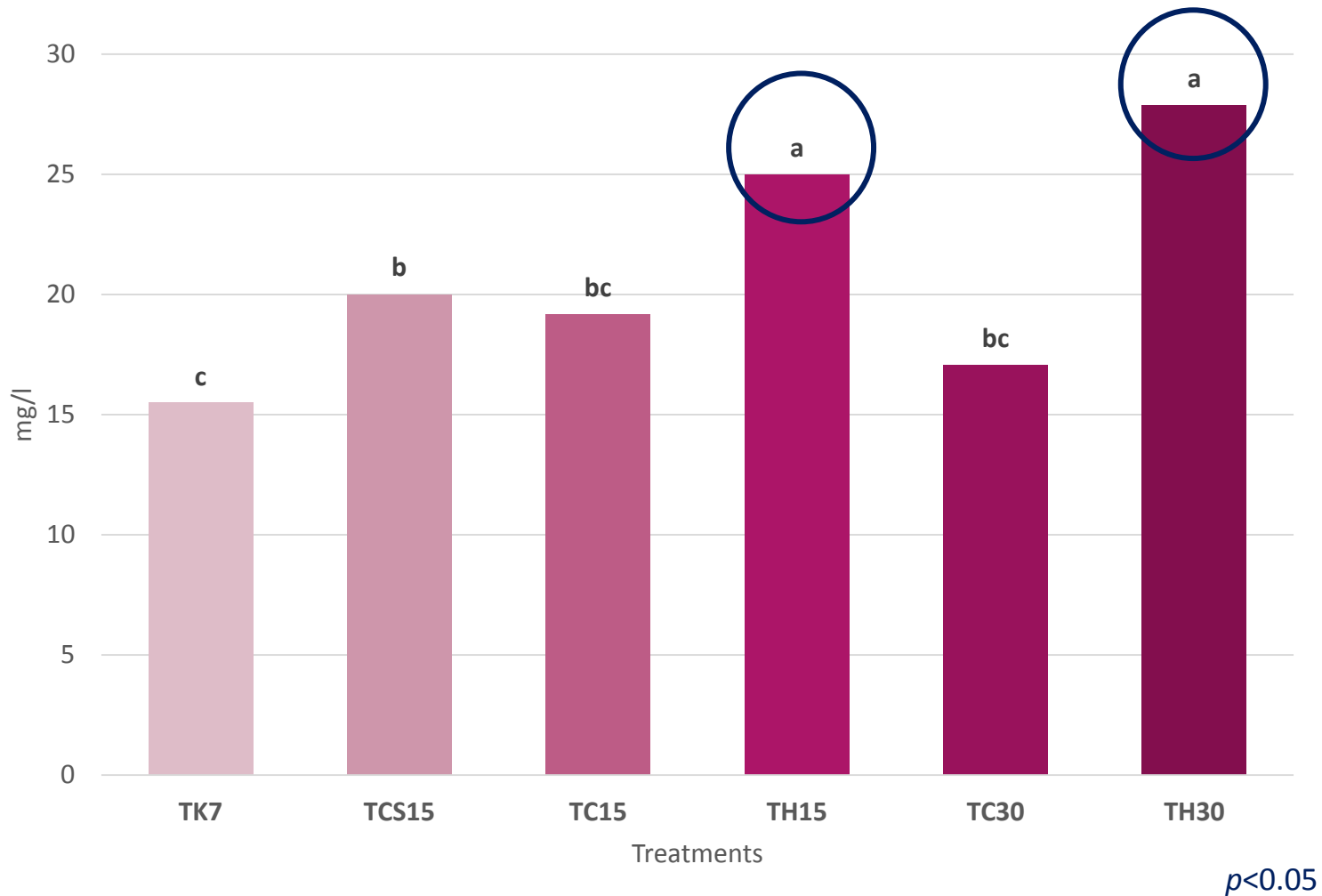
# TOTAL ANTHOCYANIN CONCENTRATION



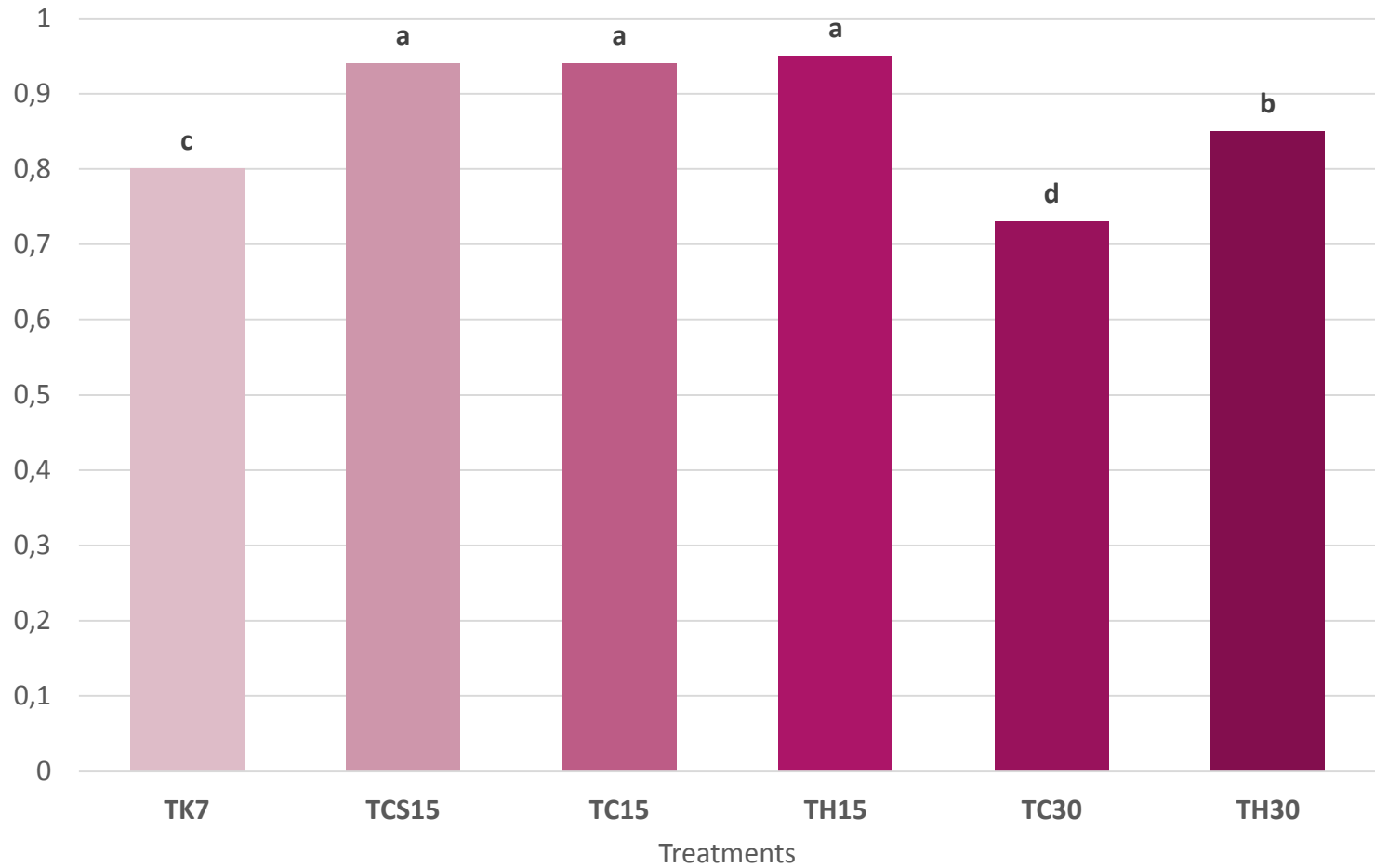
$p < 0.05$



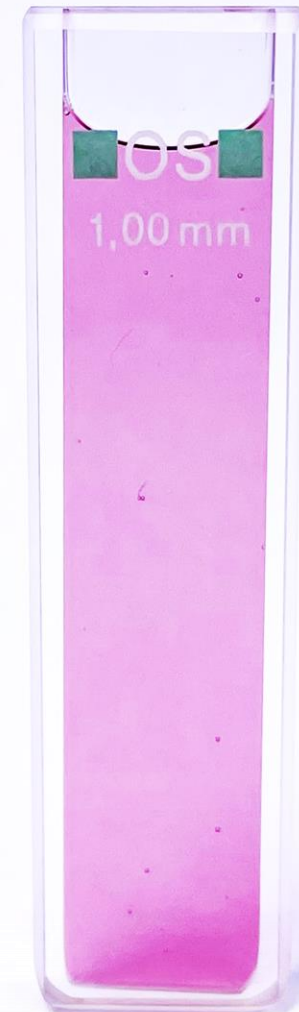
# FREE ANTHOCYANIN CONCENTRATION



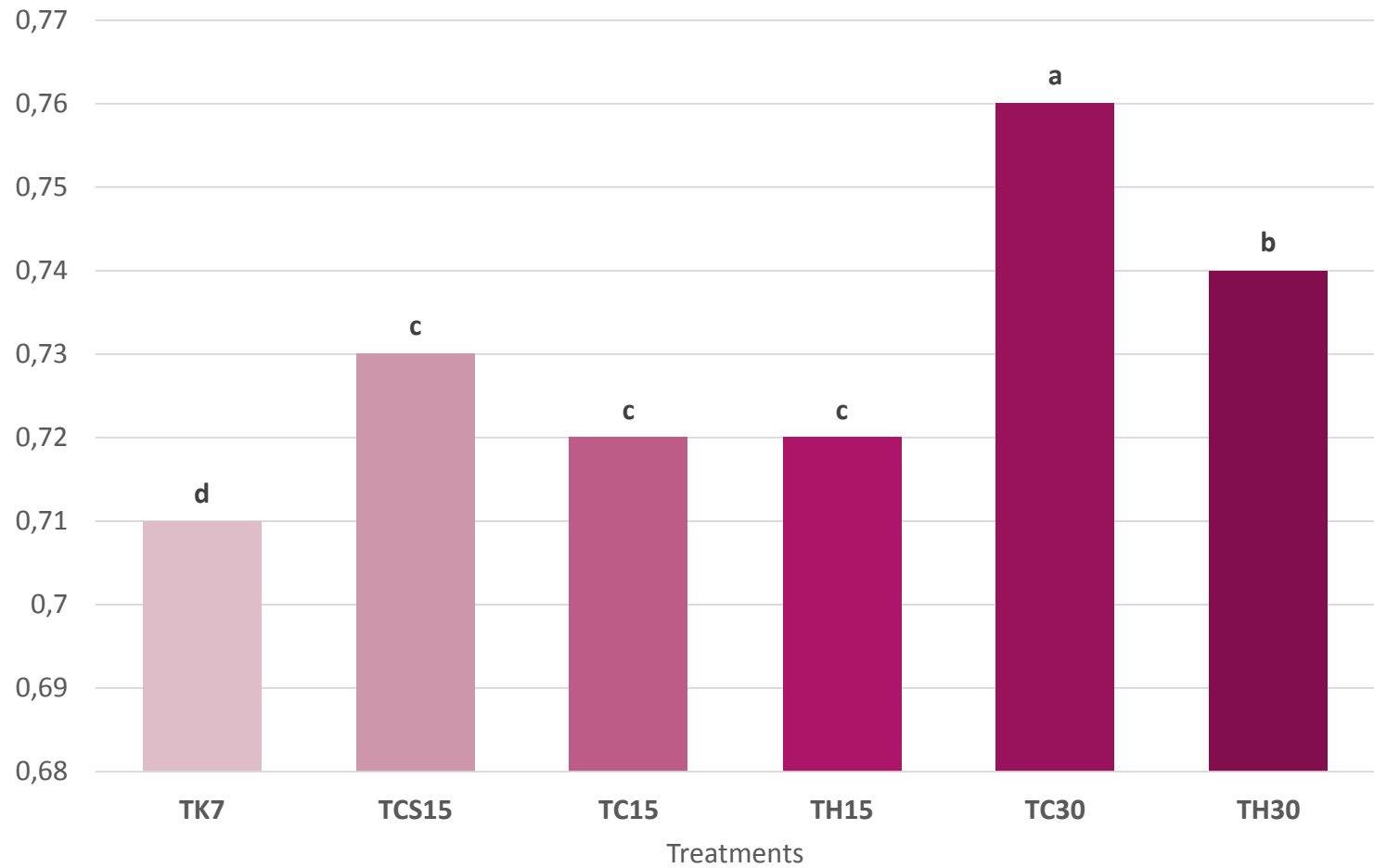
# COLOR INTENSITY



$p < 0.05$



# COLOR HUE



$p < 0.05$



# CONCLUSIONS

- Notable impact of both pre-fermentative mash cooling and heating together with prolonged macerations on analyzed parameters in comparison to control wine
  - Mash heating significantly enhanced total and free anthocyanin concentrations
  - Mash cooling affected color hue values in 30-d maceration treatments
  - Color intensity was influenced by maceration duration



# Thank you for your attention!

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