



# Developing a wood ageing protocol to mimic a barrel in experimental winemaking

**Student: Alethea Myburgh**  
**Supervisor: Prof Wessel du Toit**

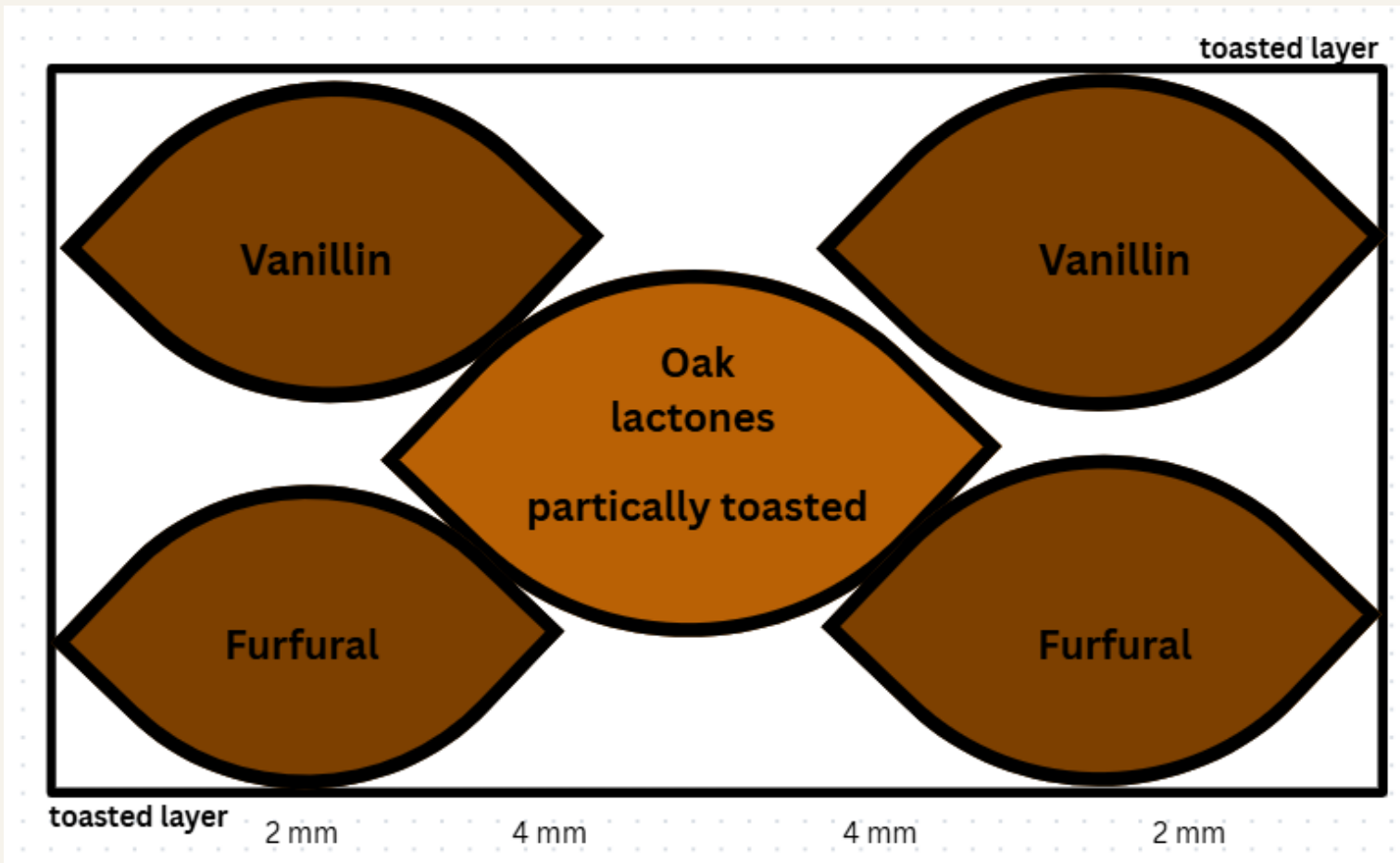
# Introduction

- **Why oak matters**
- **Traditional use**
- **Modern shift**



# Volatile compound extraction

## Where compounds are concentrated in staves



- Oak lactones, highest concentration halfway into the depth of the stave.
- Furfural compounds, highest concentration at the toasted surface and decrease rapidly into the depth of the stave.

# Aim and Objective

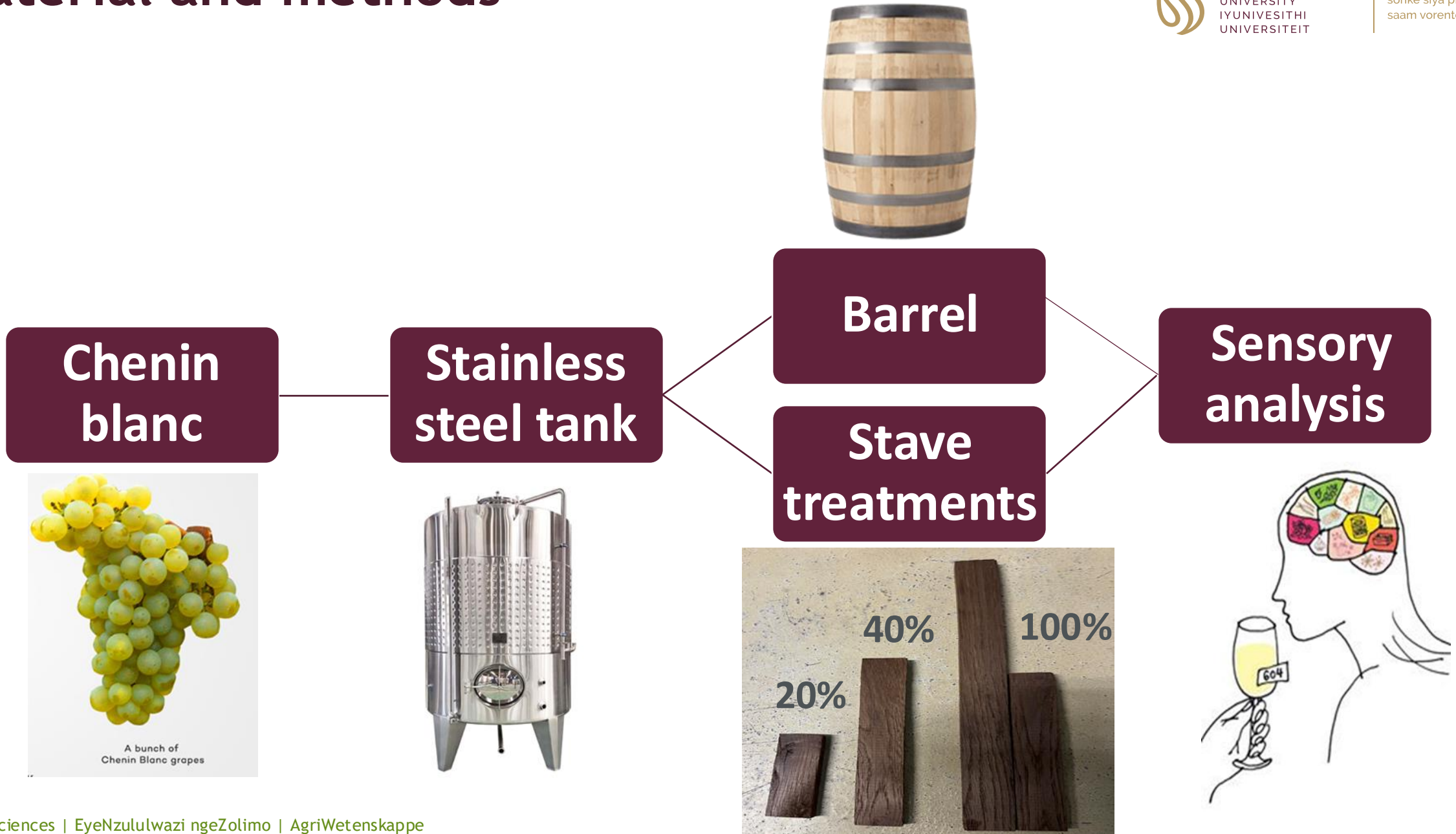
## Aim

- This study seeks to identify the best dosage of oak staves for simulating barrel aging in Chenin blanc
- Examine the extent of extraction that the exposed surface area of the stave has.

## Objective

1. Bottle wine with different stave dosages
2. Sensory analysis
3. Chemical analysis

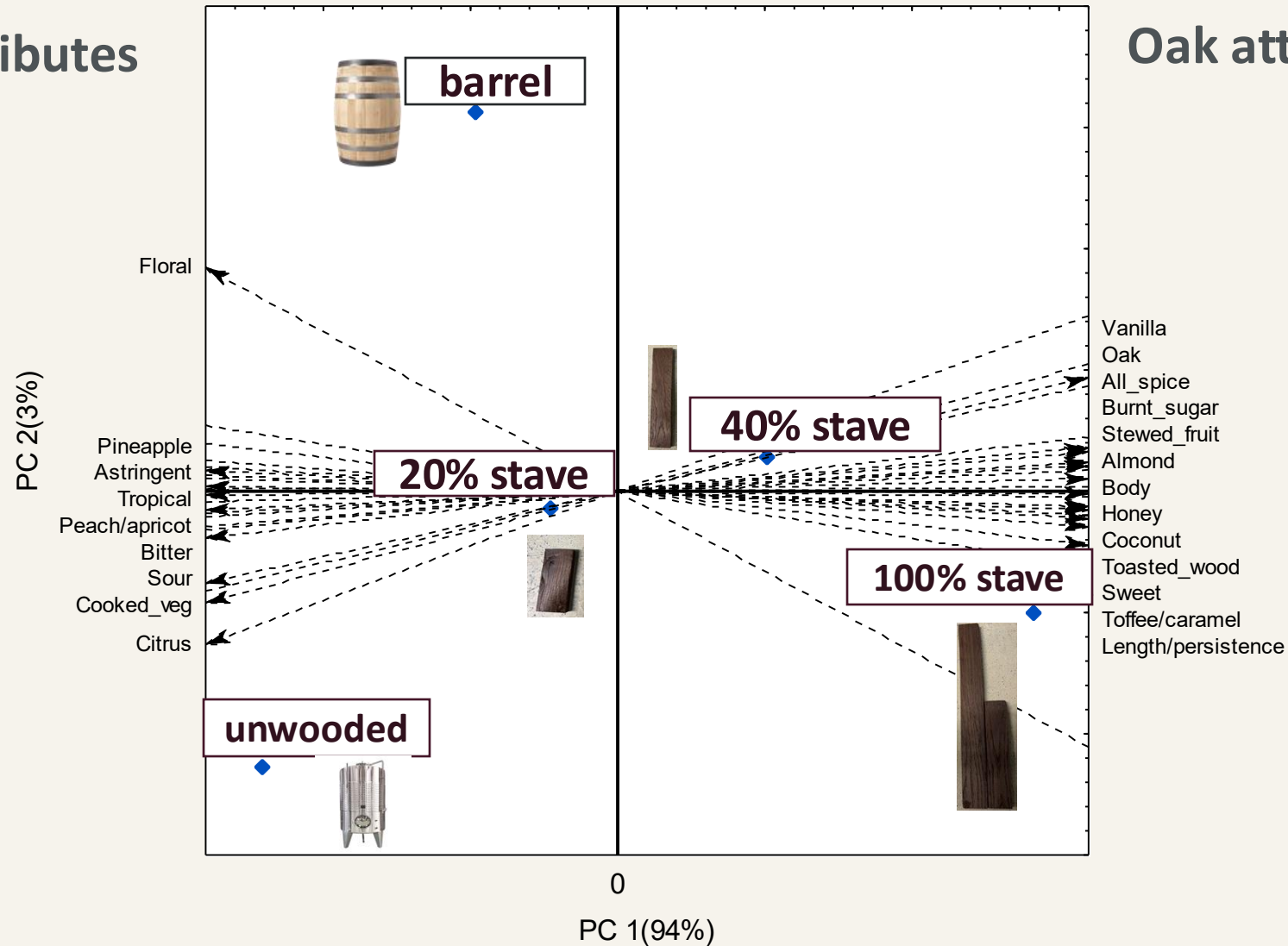
# Material and methods



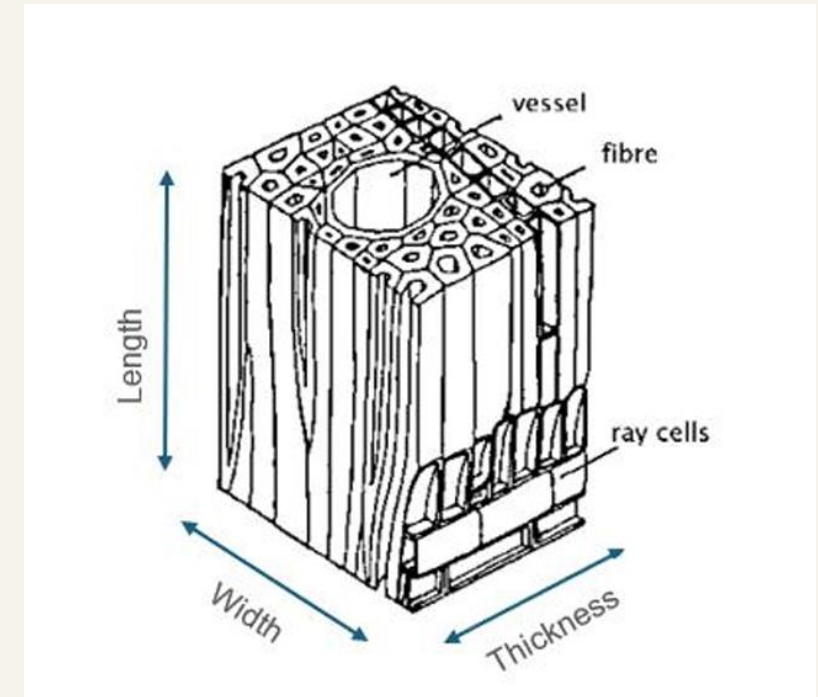
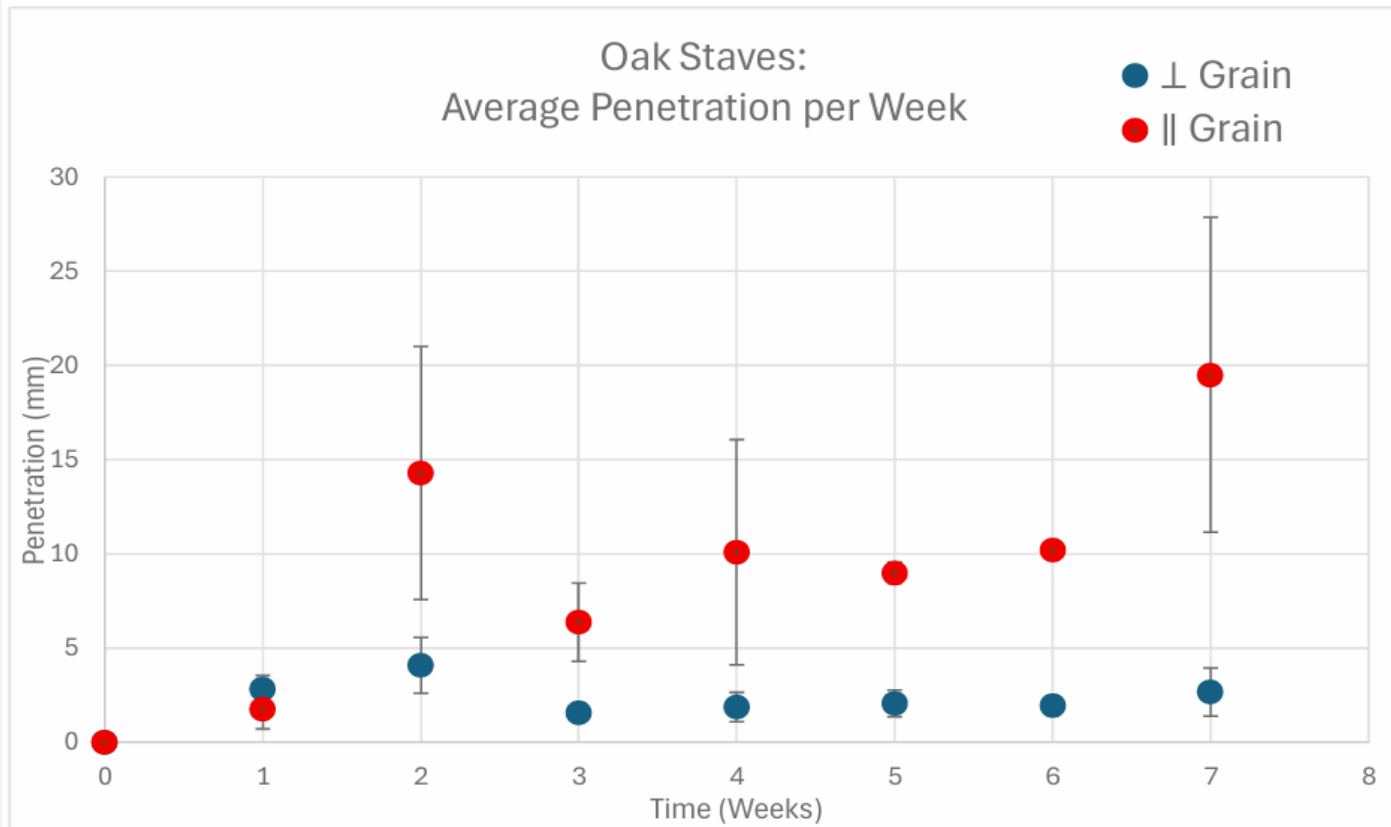
# Sensory results

## Fruity attributes

## Oak attributes



# Pattern of wine penetration depths



- Cut **parallel** to grain: Along length
- Cut **perpendicular** to grain: Across width

## Take away

- A lower oak dosage after 3 months, mimics a barrel better.
- A high oak dosage can mask the fruitiness of the wine.
- Staves have a faster extraction of oak compounds.

Thank you  
Enkosi  
Dankie



Photo by Stefan Els