# The sweeter side of things: sensory profiles of natural sweet Chenins

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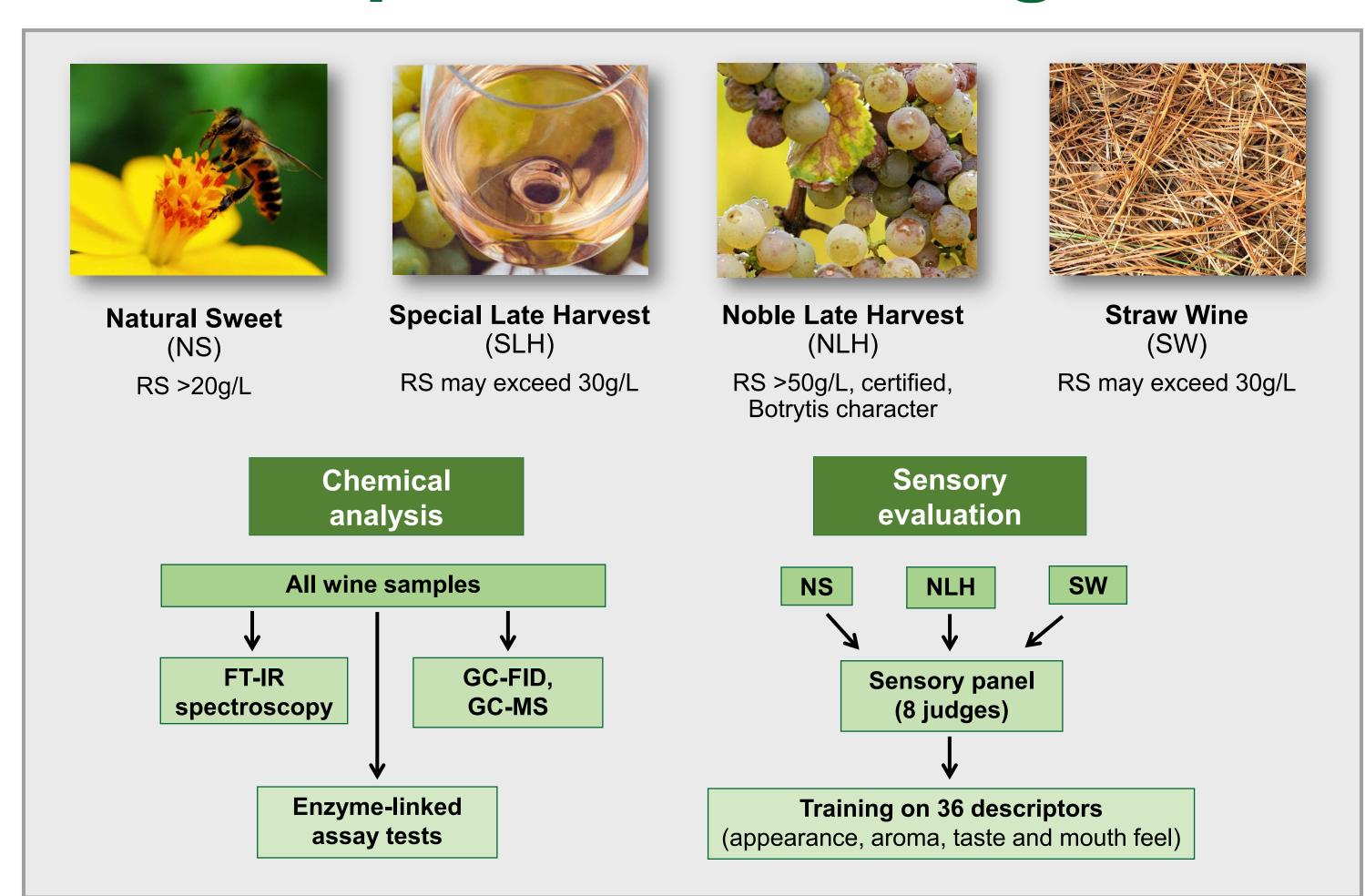
## Introduction

Chenin blanc is SA's most planted vine and with good reason. The brandy producers took advantage of its great yields, but its wide range of aroma profiles and good acidity leans itself to all styles of wine; from MCC, young fresh wines, rich and ripe wines (wooded and unwooded), all the way to **sweet dessert wines**. The latter is produced in a various creative natural ways, but essentially consists of squeezing "nectar" from the grapes. Very small quantities are produced as the weather plays a big role and the yields are small.

Top quality, award winning wines are produced in this sweet category; to name a few: Perdeberg Winery makes a *Natural Sweet* Chenin; Nederburg, Badsberg and Ken Forrester produce outstanding *Noble Late Harvests;* and De Trafford and Mullineux some beautiful *Straw Wines.*

Nonetheless, the market for these wines is small and the general consumer seems to be either oblivious to its existence or plainly does not understand it. This poses a risky situation and the question arises whether enough is done to promote these wines in its potential context?

Clearly more should be done to showcase this category and obtaining the chemical and sensory profiles, is step one.
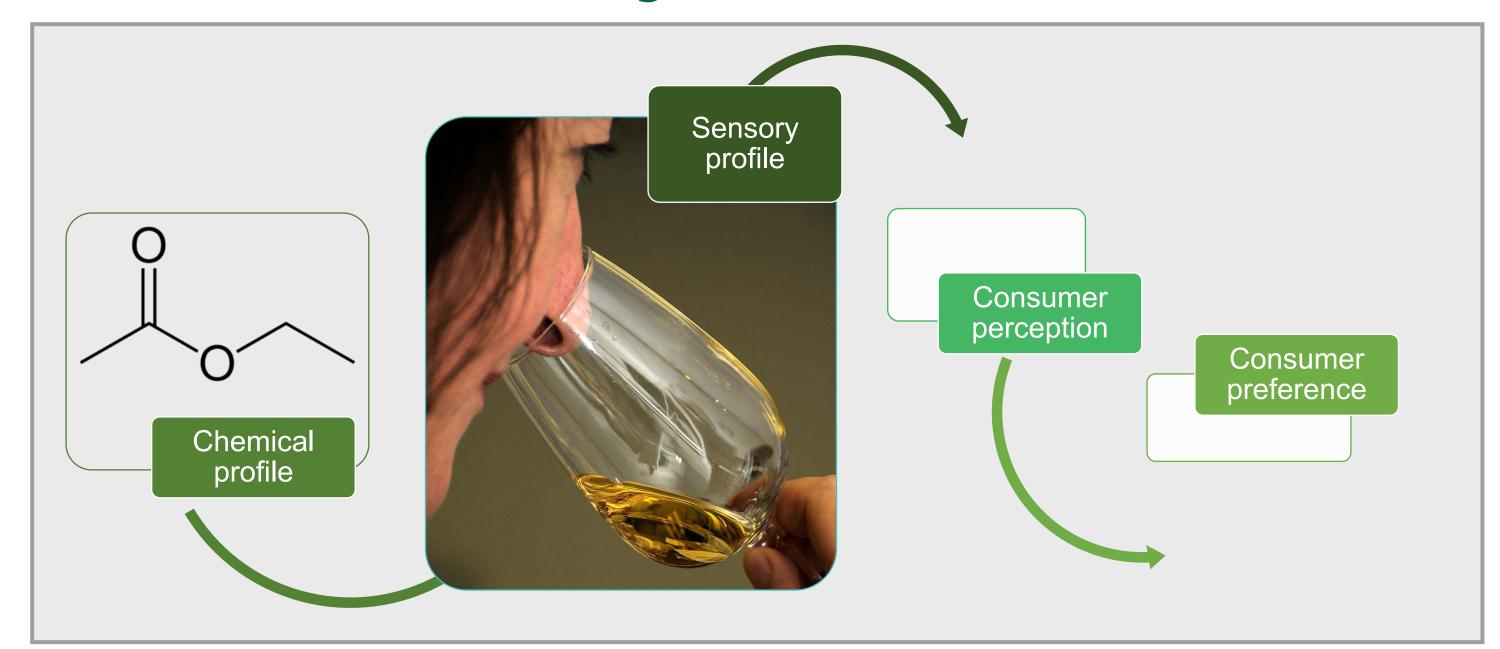
## Objectives



The objectives were to analyse natural sweet Chenin blanc wines on a chemical and sensory level. This is the first study in this category and thus laying the foundation. The consumer perception and preference is critical to the industry and studies on these subjects are in the pipeline.

## Experimental design



**Natural Sweet (NS)** RS >20g/L

**Special Late Harvest (SLH)** RS may exceed 30g/L

**Noble Late Harvest (NLH)** RS >50g/L, certified, Botrytis character

**Straw Wine (SW)** RS may exceed 30g/L

Chemical analysis → All wine samples → FT-IR spectroscopy / GC-FID, GC-MS → Enzyme-linked assay tests

Sensory evaluation → NS, NLH, SW → Sensory panel (8 judges) → Training on 36 descriptors (appearance, aroma, taste and mouth feel)

## Results

### Chemical profiling



A biplot of results obtained from enzyme-linked analyses for (Natural sweet wine), SLH (Special late harvest), NLH (Noble late harvest) and SW (Straw wine).

| Table 1: Chemical composition of natural sweet Chenin blanc wines | | | |
|---|---|---|---|
| Non-Volatile components | AVE[a] | MIN[c] | MAX[d] |
| Glycerol (g/L) | 1.67 | 0.33 | 5.66 |
| Gluconic acid (g/L) | 12.52 | 6.40 | 18.58 |
| Fructose (g/L) | 47.52 | 8.33 | 189.17 |
| Glucose (g/L) | 91.04 | 33.53 | 217.70 |
| Volatile components | | | |
| Higher Alcohols (mg/L) | 46.30 | 0.53 | 268.87 |
| Esters (mg/L) | 25.43 | 0.03 | 301.13 |
| Fatty Acids (mg/L) | 304.07 | 0.05 | 4835.64 |

[a] Average; [b] Standard Deviation; [c] Minimum value; [d] Maximum value

- Regarding the chemical analyses, the wines mainly separate due to variance in glucose, fructose, glycerol and gluconic acid.
- Higher levels of glycerol, as well as fructose and glucose are found in NLH and SW.
- NLH, even though the variance within the group is great, have the highest association with gluconic acid.

## Sensory evaluation

- The figure shows a clear sensory distinction between the different natural sweet Chenin styles.
- The wines differ in appearance (gold), ripe fruit and other aromas, taste (sweet, acidic) and mouth feel (smooth and viscous).
- An extensive list of descriptive terms associated with these sweet Chenin styles were compiled. A flavour wheel for sweet Chenins is in the pipeline.
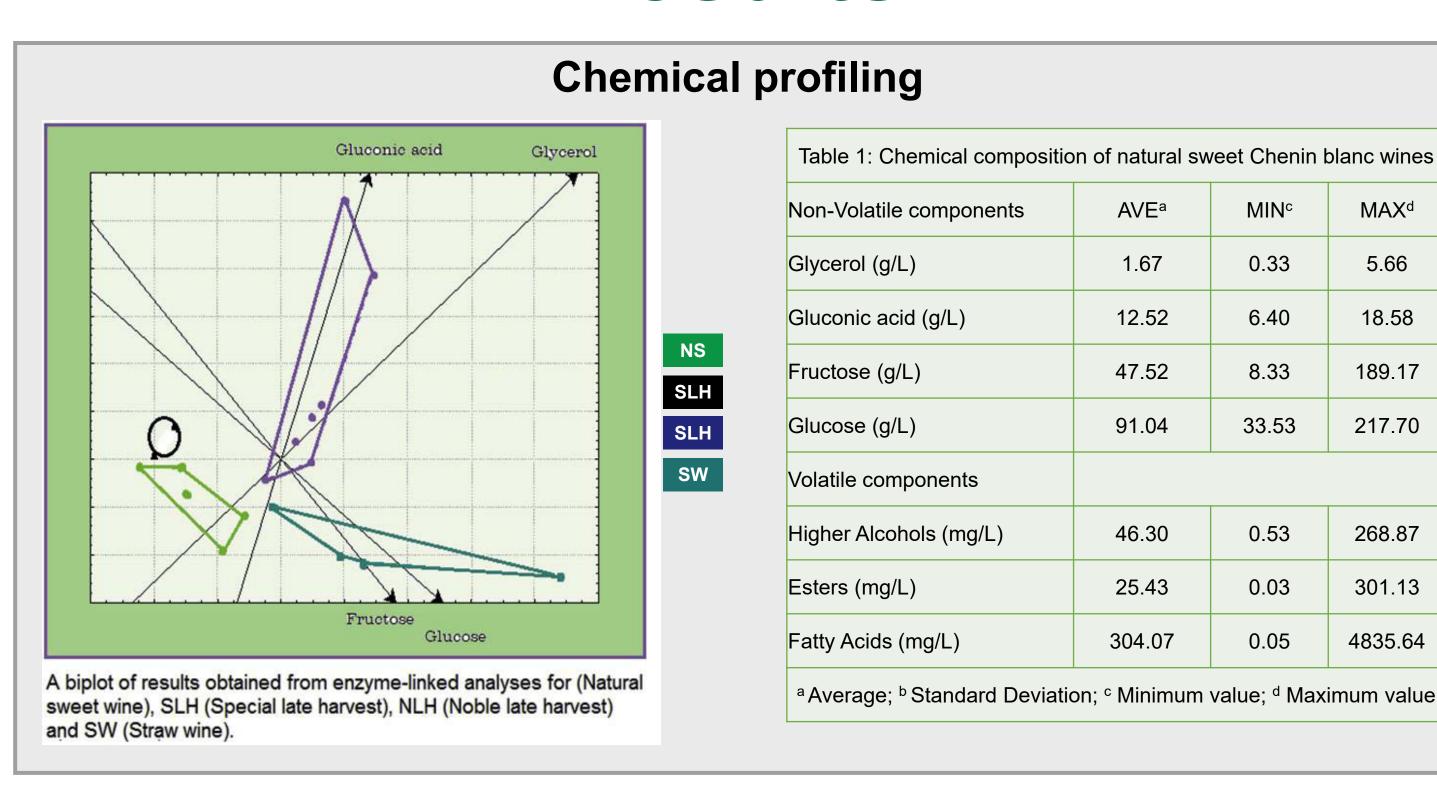


Principal component analysis of mean sensory scores for 6 natural sweet wines of the groups NS (Natural sweet wine), NLH (Noble late harvest) and SW (Straw wine).



## Conclusions

- The first sensory descriptor lexicon was generated for Natural Sweet Chenin blanc wines.
- Intensive sensory profiling of Natural Sweet Chenin blanc was initiated.
- Data towards chemical database for SA wines were generated.
- Extended data sets can be used for correlation analysis.
- Further studies on consumer perception and preference could give insight on marketing opportunities.