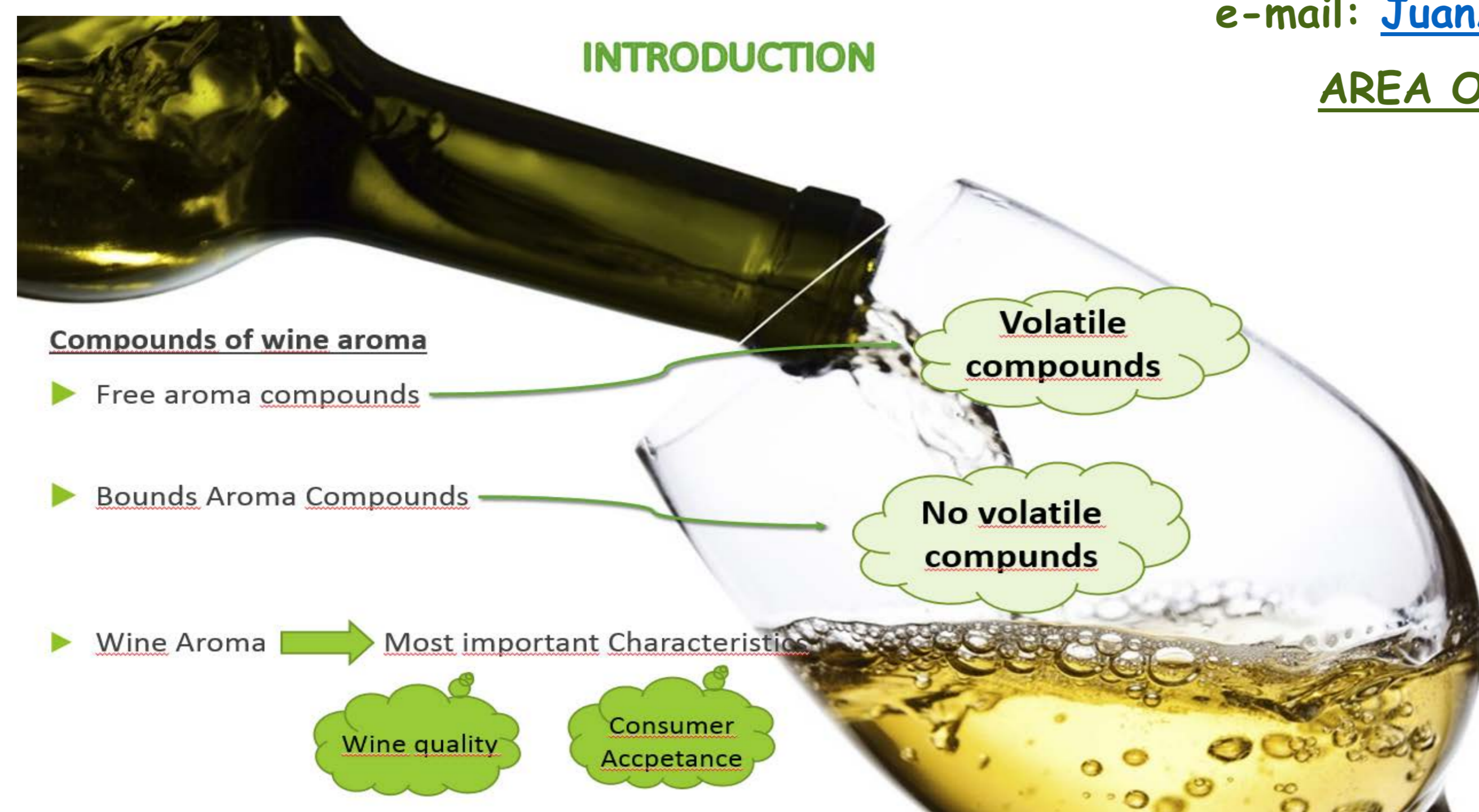
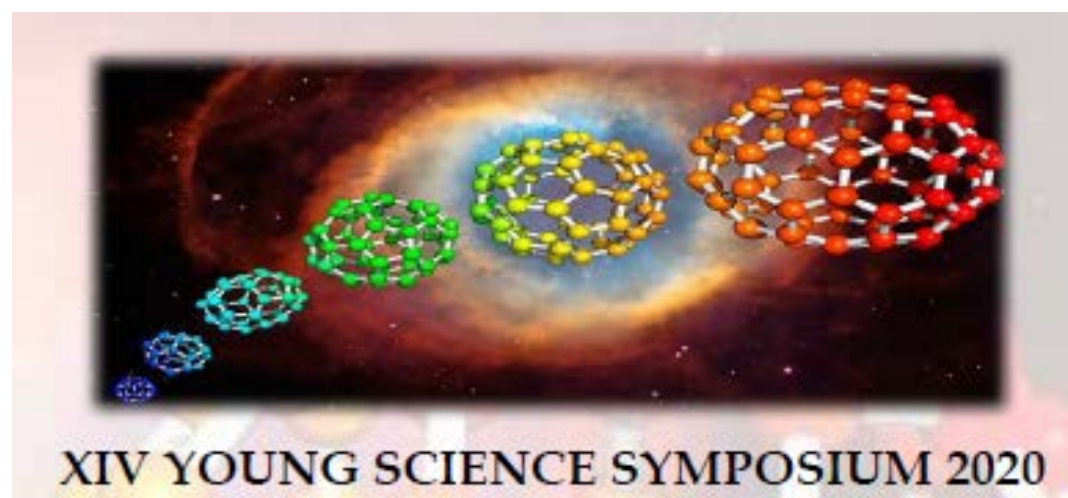


CHEMICAL CHARACTERIZATION OF LA MANCHA CHELVA WINES: INFLUENCE OF WINEMAKING TECHNIQUE

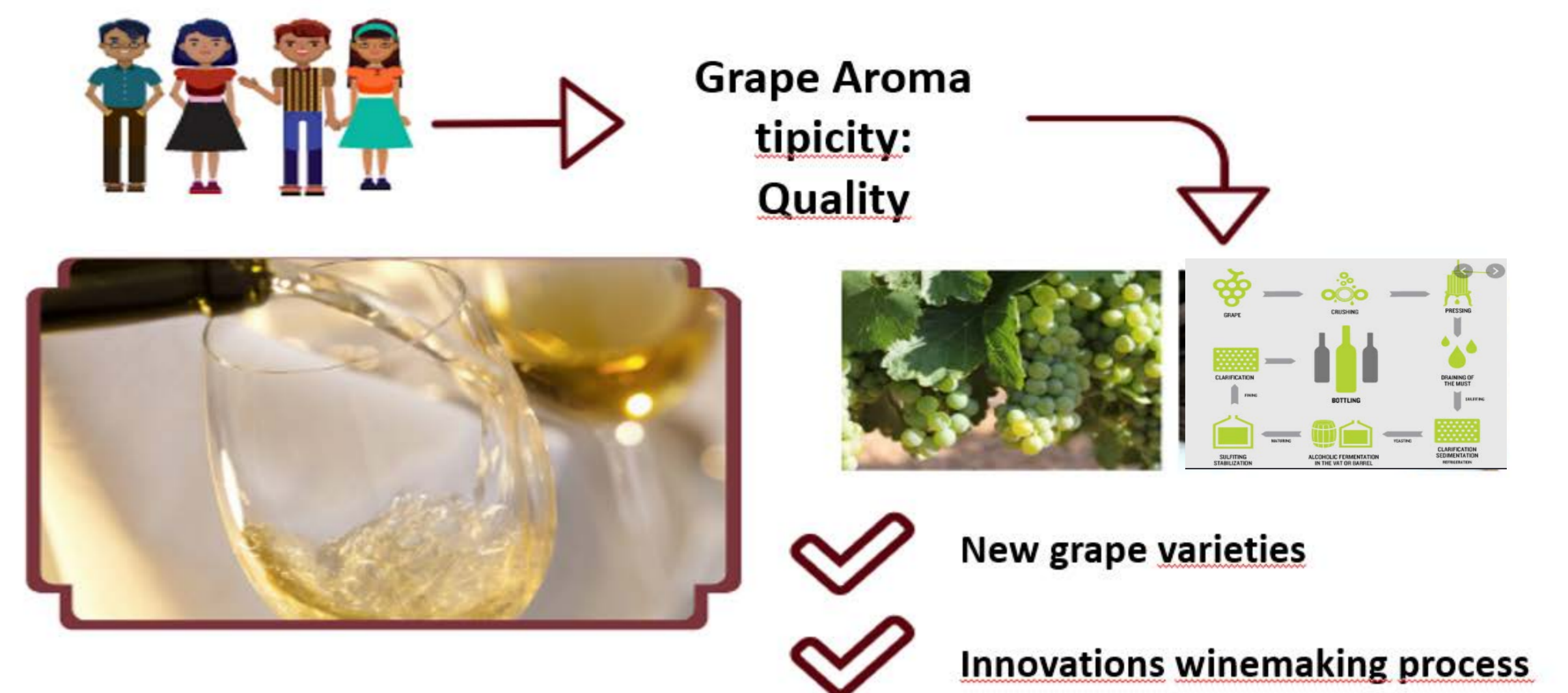
J.A. Delgado*; M.A. Ferrer Valverde; M. Osorio Alises; E. Sánchez-Palomo & M.A. González Viñas

Universidad de Castilla-La Mancha, Avda Camilo José Cela, 10, 13071 Ciudad-Real,

e-mail: JuanAntonio.Delgado@alu.uclm.es

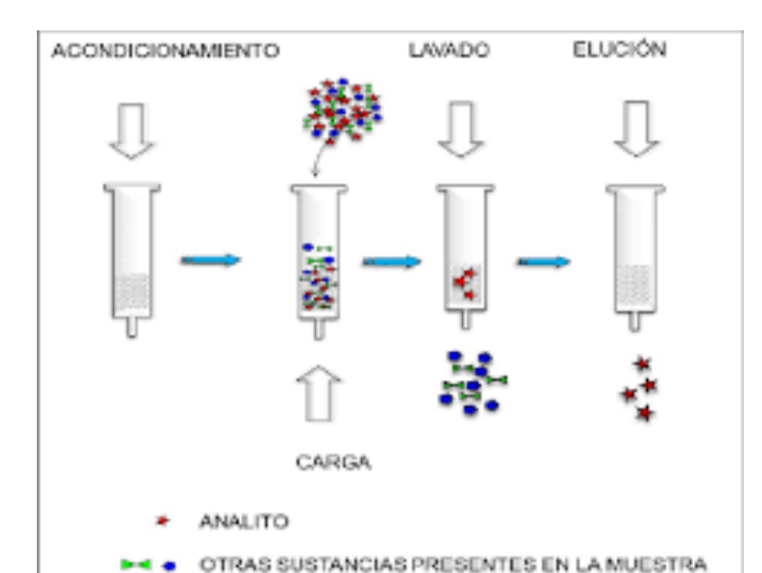


AREA OF FOOD TECHNOLOGY AIMS



- ▶ Volatile characterization of La Mancha Chelva Wines
- ▶ Influence of skin contact of must and enzyme treatment of wine

Principal aim



Materials & Methods.

WINES

Grapes from *Vitis vinifera* var. Chelva cultivated in La Mancha region (Spain) were harvested at the optimal maturity stage. Grapes were divided into three batches. Two batches were treated in the standard way with minimal skin contact, and the other two batches were used for the skin-contact experiment. One batch following fermentation, a commercial enzyme preparation (AR-2000, Gist Brocades) was added to. In order to make skin contact wines the grapes were destemmed and crushed. The pomace was mixed with 100 mg/kg of sulphur dioxide, kept at 18° C for 23 hours and then pressed.



CONVENTIONAL ANALYSIS:

- According to the method proposed by OIV 2015

VOLATILE COMPOUNDS:

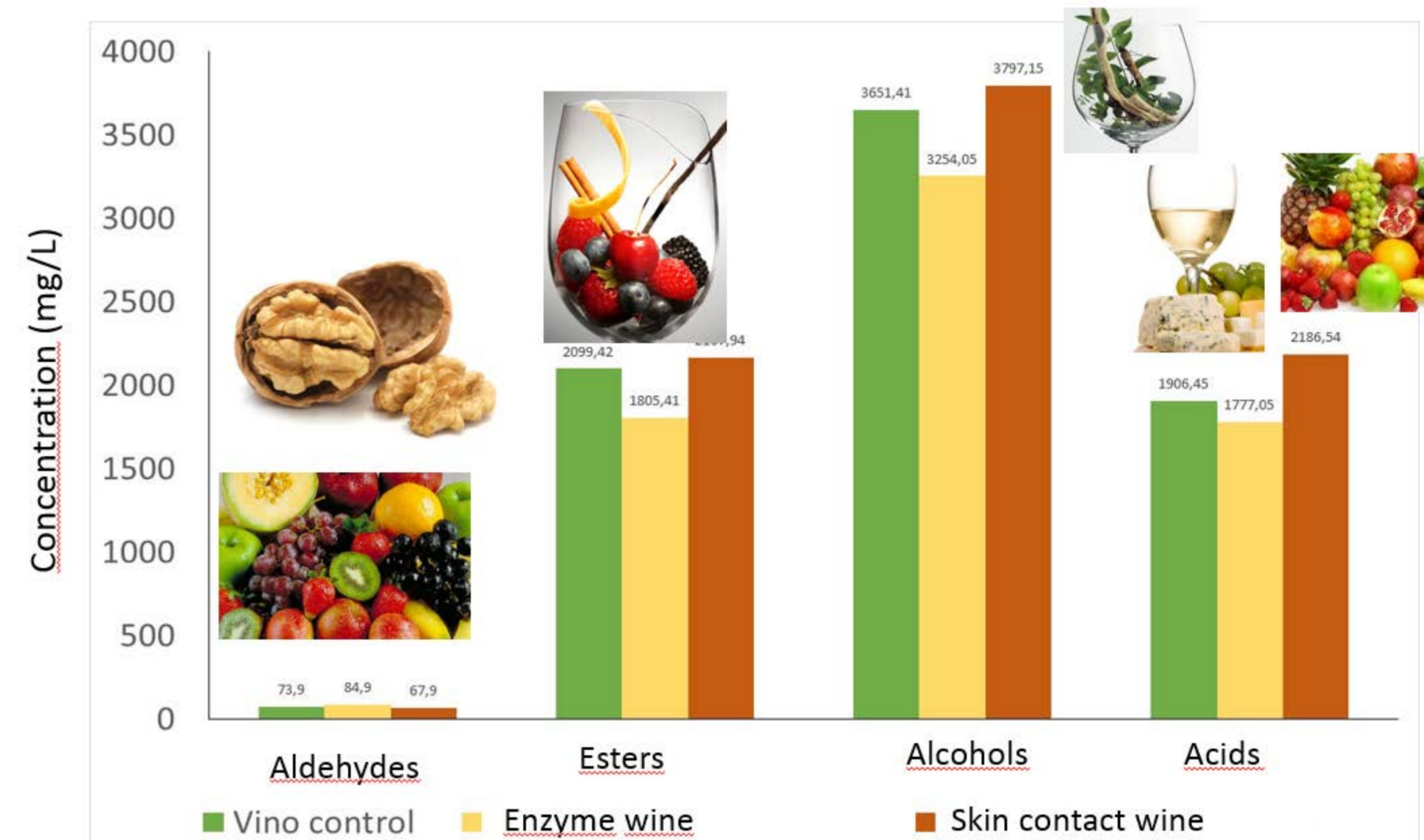
- Volatile compounds were determined by GC-MS.
- Extraction of volatile compounds was carried out according to the method proposed by Sánchez-Palomo et al., 2006 using styrene-divinylbenzene cartridges (LiChrolut EN, Merck, 0.5g of phase)
- Mayor volatiles: direct injection

Results & Discussion

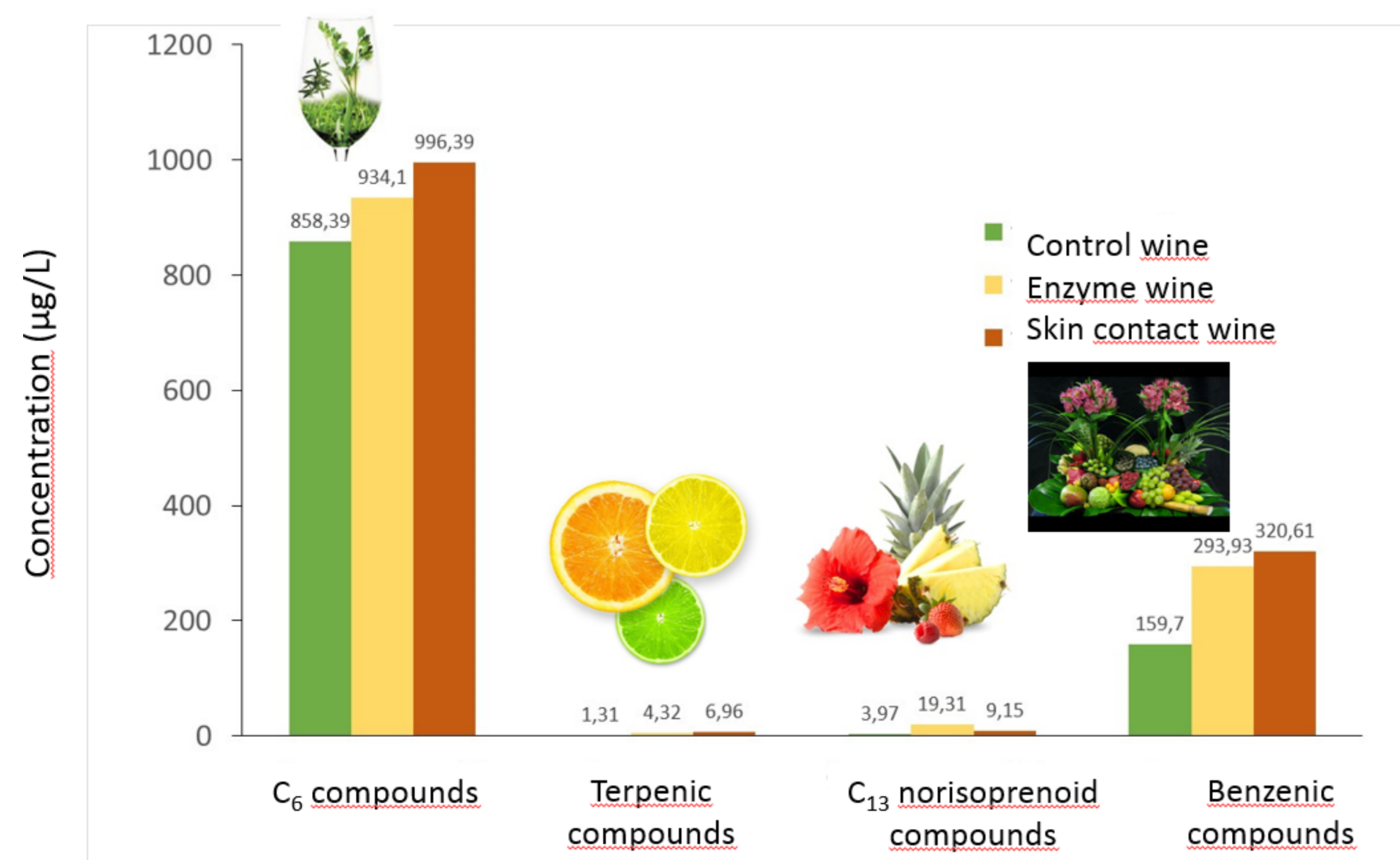
CONVENTIONAL ANALYSIS

| | Control Wine | Enzyme Wine | Skin contact wine |
|------------------------------------|--------------------------|--------------------------|--------------------------|
| pH | 3.55 ^a (0.11) | 3.55 ^a (0.21) | 3.69 ^a (2.45) |
| Volatile acidity (g acetic acid/L) | 4.64 ^a (1.72) | 4.49 ^a (4.22) | 4.32 ^a (4.15) |
| Free SO ₂ (mg/L) | 5.25 ^a (9.53) | 5.25 ^a (9.53) | 6.75 ^b (7.49) |
| Total SO ₂ (mg/L) | 52.3 ^a (1.84) | 57.8 ^a (3.01) | 47.5 ^b (1.26) |
| Total Acidity** (pH, T/L) | 4.25 ^a (1.71) | 4.29 ^a (0.81) | 4.02 ^b (0.94) |
| Ethanol (% v/v) | 12.9 ^a (1.34) | 12.7 ^a (0.42) | 12.8 ^a (0.08) |

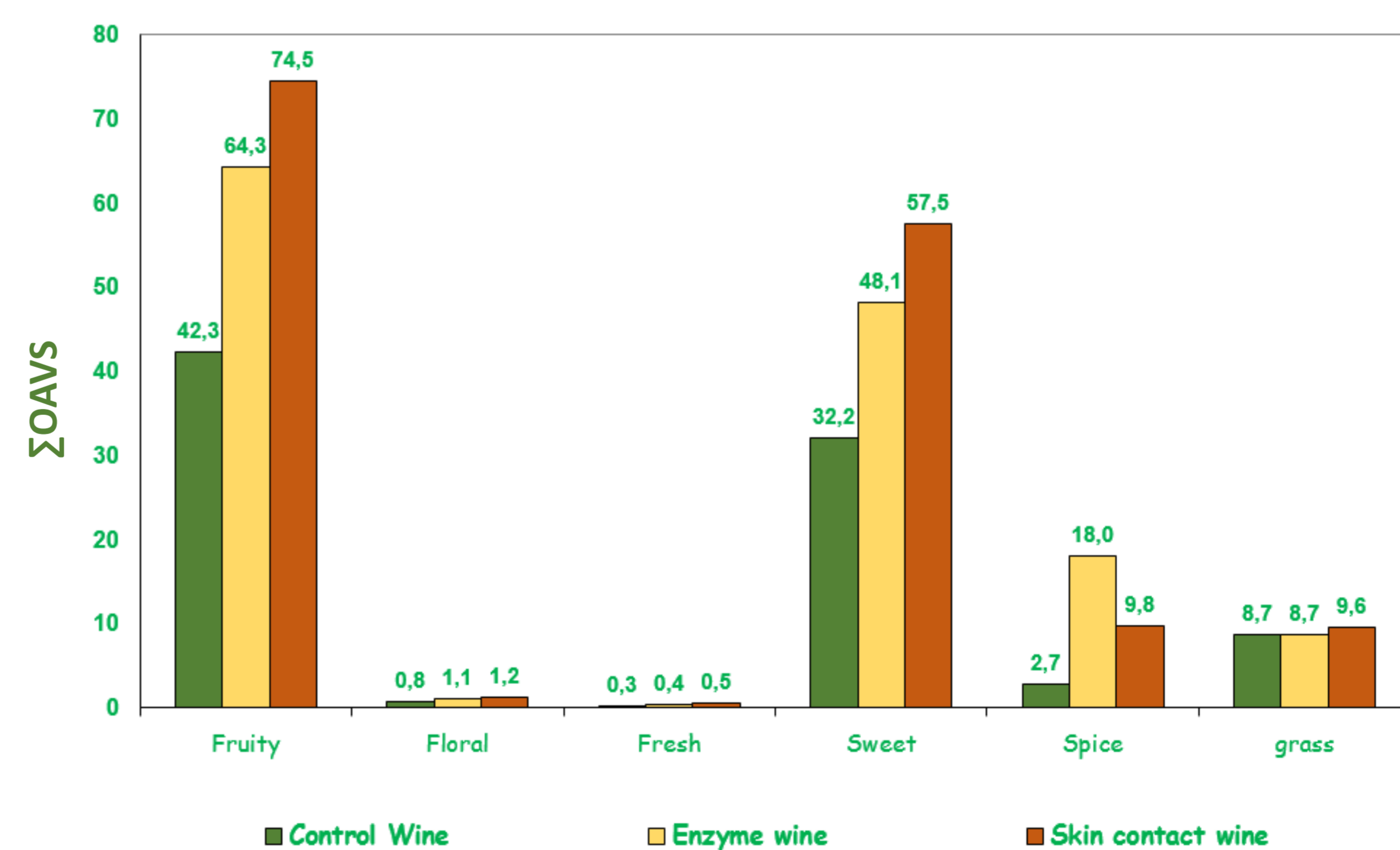
FERMENTATION AROMA COMPOUNDS



VARIETAL AROMA COMPOUNDS



ODOUR ACTIVITY VALUES: AROMATIC SERIES



CONCLUSIONS

- Control Chelva wines displayed high concentrations of C₆ compounds and benzene compounds, including vanillin and its derivatives, with lower values for terpene and C₁₃-norisoprenoids compounds.
- Higher concentrations of varietal compounds in the skin contact and enzyme wines suggest that these techniques may be two effective means of enhancing wine aroma.
- Pre-fermentation maceration of musts with grape skins, together with glycosidic-enzyme treatment of wines, provides a viable alternative to traditional methods for enhancing the varietal character of La Mancha Chelva wines.