

# Analysis Report

**Client:** MagicFlavor Investment Inc.

## Sample

Ernest & Julia Gallo, Sierra Valley, Shiraz (Red Wine)  
Remy Martin VSOP Fine Champagne Cognac Brandy (Brandy)

## Sample treatment

Both of the wines were treated with the magnetic ring (MagicFlavor Plug magnetizer) provided at the degree indicator marked at 7.5 just before the measurements were made and control experiments were performed on wines without treated by the magnetic ring.

## Instrumentation

<sup>13</sup>C Nuclear Magnetic Resonance (C-NMR), Electron Spin Resonance (ESR), UV-Vis spectroscopy, FT-IR spectroscopy and Raman spectroscopy were conducted for both of the treated and controlled samples.

C-NMR spectra were obtained on a Bruker DPX400 NMR spectrometer. ESR spectra were recorded on Bruker EMX EPR spectrometer. UV-vis spectra were recorded on a Hewlett-Packard 8453 diode array UV-Vis spectrometer, using cells of 1 cm path length at room temperature. FR-IR spectra were obtained on a Bio-Rad FTS 135 IR spectrometer, using 0.5 mm calcium fluoride (CaF<sub>2</sub>) solution cells. Raman spectra were record on a Renishaw Raman Spectroscopy System 2000 using a 1 cm diameter glass cell.

For ESR and Raman, the samples were measured directly without further treatments. While dilution (sample : water = 1 : 4) of the sample were done before the measurement of UV-Vis and FT-IR. A 1 : 1 ratio Deuterium oxides (D<sub>2</sub>O) were added to the samples for the C-NMR measurement.

## Results

### Red Wine

C-NMR and ESR were performed for both treated and untreated (control) red wine. The results are shown in the spectrum 1 to spectrum 4.

Both of the C-NMR and ESR spectra showed no significant differences when comparing the treated and the control sample.

### **Brandy**

C-NMR, ESR, UV-Vis, IR and Raman were performed for both treated and untreated (control) brandy. The results are shown in the spectrum 5 to spectrum 12.

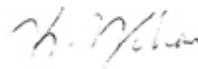
All of the measurements showed no significant differences when comparing treated and the control sample.

### **Conclusion**

No chemical differences were found for the treated samples (both red wine and brandy) as compared with the control samples.

Signed:

Professor W.T. Wong



Professor K.Y. Chan

**Date: 10<sup>th</sup> Feb., 2005**