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Rising alcohol levels in wine - is this a cause for concern?

A debate in July hosted by the International Wine and Spirit Competition, looked at the implications of increasing alcohol levels in wines, not only from the 'new world', but increasingly from European countries. The debate was sparked by a number of articles featuring the rising alcohol levels in table wines, and in turn a large number of wines entered into the competition with alcohol levels of 14% and above.

Many factors can be held accountable for the rise in alcohol, predominately in red wines from Australia, California and South Africa, these include:

In the vineyard

- Choice of rootstock,
- Variety and clones – Shiraz, Grenache and Zinfandel naturally accumulate more sugars for example,
- Virus free vines which can photosynthesise more efficiently,
- Leaving the grapes on the vines for longer leading to greater accumulation of sugars,
- Climate – a hotter climate will naturally lead to greater sugar accumulation, and the brix can rise very quickly
- Canopy management – removing leaves around fruit to expose it to more sunlight

In the winery increases in alcohol post picking can be due to:

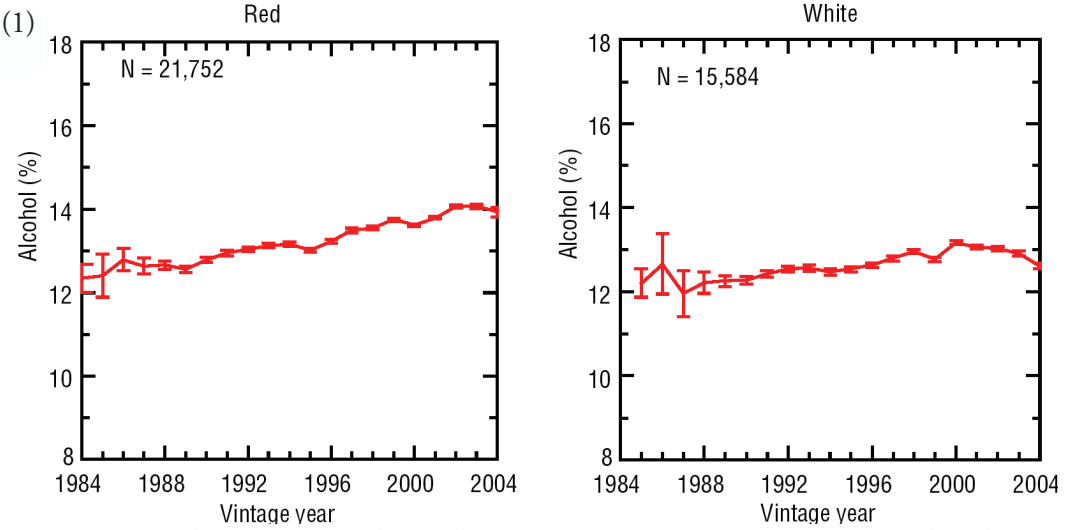
- more efficient yeasts which need less sugar to make one degree of alcohol
- yeasts that can survive a higher level of alcohol in the must

Added to the above equations and much debated were wine maker choice, perceived consumer taste and wines made to appeal to wine critics.

The Australian Wine Institute published comprehensive research (1) via analysis of 56,000 tests on 15,000 samples into the change in composition in Australian wines between 1984 and 2004. The trend has been for higher alcohol in white wines until 2000 and which point alcohol levels have begun to decline (12.2% in 1984, 13.2 in 2000 falling to 12.5% in 2004).

However, for red varietals there has been a consistent increase in alcohol and dry extract - with a sharp increase in fructose and glucose levels in Cabernet, Merlot and Shiraz. Alcohol levels have grown from 12.4% to 14% (Grenache and Shiraz average 15%) although PH in red wines has remained static. Similar statistics from California show that average alcohol levels have fluctuated between 12.5% in 1978 and 14% in the 1980's rising to a record 14.8% in 2001 (2).

(1)



Source: Trends in the composition of Australian wine 1984-2004 - Peter Godden and Mark Gishen

(2) ALCOHOL & SUGAR LEVELS IN CALIFORNIA
From CA Grape Crush Report District 4 – All varieties

Year	Alcohol
1971	12.5%
1973	12.7%
1975	13.2%
1976	13.7%
1978	14.0%
1981	13.7%
1983	13.1%
1986	13.3%
1990	13.5%
1992	13.8%
1997	14.4%
1999	14.6%
2001	14.8%

From a social aspects point of view, the implication of rises in alcohol levels in wines were analysed from the viewpoint of unit intake, potential increase in blood alcohol concentrations and size of pour (the issue of glass size).UK sensible drinking guidelines are 2-3 units of 8g for females and 3-4 units of 8g for males. Guidelines vary between 14 and 24g a day for women and 24g and 32g for males internationally. A 175ml glass of wine at 11% will contain 1.9 UK units (8g), rising to 2.7 units if at 15%. If the pour size increases to 250ml, as often offered in bars or restaurants a 250ml glass at 15% will contain 4 units – the top end for daily guidelines for males in one serving. In simple terms a bottle of wine at 15% contains 25% more alcohol than a bottle containing 12% (3).

(3) **No. of units per glass of wine (1 UK unit = 8g)**

175 ml glass	**11% = 1.9 units**
	12% = 2.1 units
	13% = 2.4 units
	15% 2.7 units
250 ml glass	**13% = 3 units**
	15% = 4 units

In terms of unit intake over a week for daily drinkers, the choice of a wine at 14.5% over a wine at 12.5% will increase an individuals alcohol intake by 50–60g a week.

As regards blood alcohol concentrations and the implications on drink- drive, the difference in alcohol levels in the blood after consumption of wine at different alcohol levels was clearly illustrated due to the research by David Craig of the Hobart and William Smith colleges New York (4).

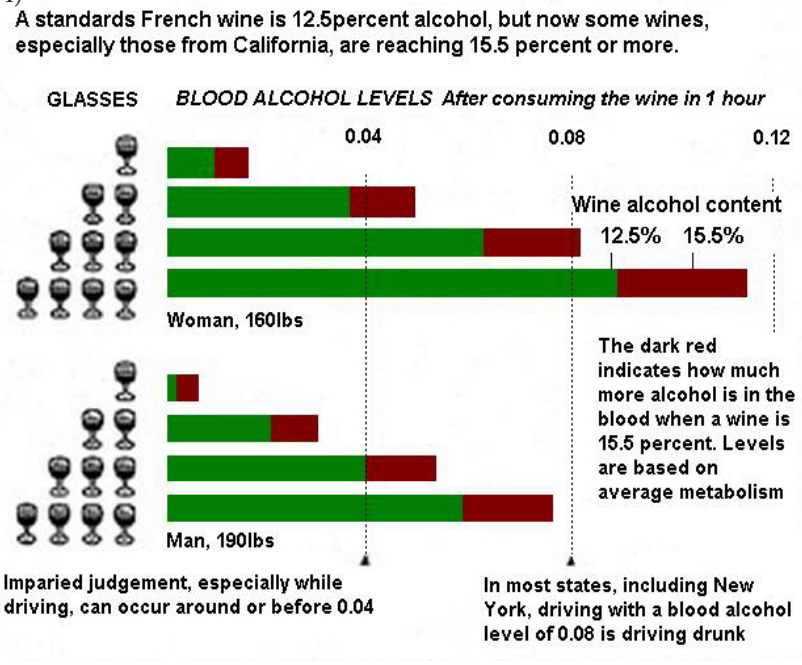
The second issue discussed was that of the length of time that alcohol stays in the blood, calculated on the liver's ability to break down one unit an hour for males and approximately 3/4 unit for females. In the light of an average drink drive BAC level in Europe of 0.05g per 100 ml of blood an elevated risk of exceeding drink driving levels exists for higher alcohol wines(5).

It was generally agreed that the audience would like to see a much greater and more interesting range of wines available for consumers, offering similar taste profiles to the full bodies 'jammy' higher alcohol wines on the market, but with a lower range of alcohol. Consumer research by Wine Intelligence suggests that consumers are currently wary of the quality of wines at below 13%. However, current offerings had a marketing bias towards the lower calorie levels in lower alcohol wines, which was considered unattractive for male consumers (but attractive for segments of the female market) or from less 'fashionable' regions.

Whilst emphasing that wines above a price point of £7 were more likely to be sipped and savoured and often with food, the lowering of alcohol levels to between 11 and 13% for lower price point wines could make a considerable contribution to lowering the unit intake of some consumers, especially young British women who tend to combine wine consumption with other alcoholic drinks 'on a night out'.

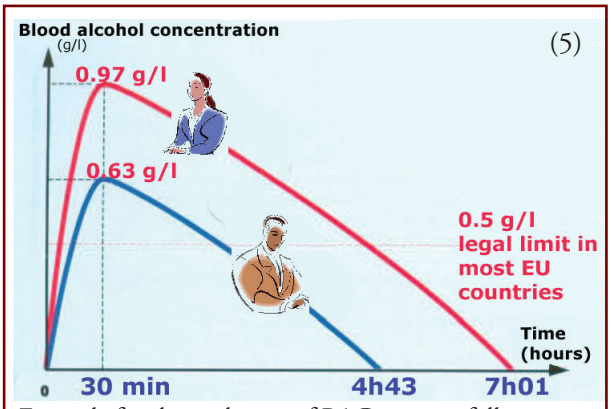
For further details or power point presentations, contact helena.conibear@aim-digest.com

(4)



Source: David Craig, Hobart and William Smith colleges New York

(5)



Example for the evolution of BAC in time, following consumption of three drinks (30 grams of pure alcohol) by a man of 70 Kg and a woman of 55 Kg. (Source: Entreprise & Prevention).