

INVESTING IN FLAVOUR

Winemakers and buyers must be careful that they don't assume that all consumers share their taste preferences. Dr Jamie Goode asks whether understanding the variation in taste among individuals could be useful for the wine trade.

People buy wines for many reasons. Brand choice is influenced by factors such as packaging, price, label design, country or regional origin and familiarity. But it's the way the wine tastes that will influence whether or not a repeat purchase is made.

So it would seem good sense for brand developers to use consumer sensory panels to see what flavours are preferred, and then deliver wines that match these preferences. However, there's a problem with this approach. Peoples' tastes differ, and by aiming at the 'average' consumer, you could end up with a wine that no one really likes all that much. It's likely that some of these taste preferences are cultural or national, while others have their roots in biology, and as such are more hard-wired. Some preferences are innate; others are learned. Tastes change with time and age, and even fashion can influence preferred styles of wines. An example of this is where consumers actually prefer their wines to have some sweetness, but feel pressured into buying dry wines because liking sweet wine is seen as rather unsophisticated.

For this reason, wine companies have made attempts to segment the marketplace and target particular brands at particular groups of consumers. In 2006, Constellation carried out a widely publicised consumer segmentation exercise in the British marketplace in conjunction with research firm Wine Intelligence. Called 'Wine Nation', it involved surveying 3,000 wine drinkers, and the results were used to define seven wine consumer types, according to their level of knowledge about wine, how often they drink, the type of wine that they buy, what they look for when choosing a wine and where they buy it. The segments are also defined by age,

sex, life stage and lifestyle, location and average spend. The seven categories were titled: High Potentials, Routiners, Engaged Explorers, Experts, Newbies, Occasionals and Economisers.

But what this and similar segmentation exercises typically don't include is study of how consumers actually respond to the taste of wines. A different, and perhaps more practical approach to understanding the market is for brand owners to use consumer sensory panels as a way to fine-tune existing brands and to guide new brand development. Sensory science, coupled with a thorough understanding of the nature of taste variation in consumers has great potential for helping develop brands that resonate strongly with consumers.

Sensory science

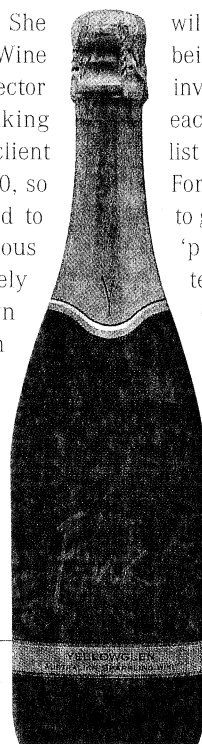
Jane Robichaud of Tragon Corporation is one of the leaders in this field. Robichaud, who is a trained winemaker as well as a sensory scientist, was one of the authors of the celebrated wine aroma wheel during her time at University of California Davis. She then worked at Beringer Blass Wine Estates, where she became director of consumer and winemaking insights. Beringer was a major client of Tragon Corporation from 1990, so when it was time for Robichaud to move on, Tragon was an obvious choice. Her current work largely involves using a process known as Product Optimization, which consists of quantitative consumer sensory research that provides winemakers with practical information that can help them make 'consumer-defined' wines.

"There are a couple of stages to what we do," says Robichaud.

"In the first stage, we use a group of trained consumers who effectively act as sensory measuring devices, and who do objective analysis of the wines we present to them to give the sensory attributes." The trained panellists use a method called 'Quantitative Descriptive Analysis'. Attributes that describe the sensory characteristics of the wines are first generated in group 'language development' sessions, and after the panel have developed their scorecard they go into a series of individual data collection sessions, each one carried out in a formal tasting booth.

At Beringer, for example, Robichaud had a pool of 300 people she used for this purpose; at Tragon, they recruit members of the public and put them through a two-day sensory analysis boot camp. "They don't need to be connoisseurs, but they need to be regular consumers who are good at group dynamics," she says. Typically, 70% of these people will pass and 30% will drop out. The job of this panel is to come up

with the descriptive language that will be used to describe the wines being examined, and this usually involves five sessions of two hours each. "For every attribute, there is a list of definitions," says Robichaud. For example, the panel might decide to group the descriptors 'mango' and 'pineapple' under the umbrella term 'tropical fruit'. The panel also decide on the anchor words for the intensity scales that are used in conjunction with descriptors: 'thick and creamy' might be at one end of the scale for texture, with 'thin and watery' at the



Yellowglen Pink is a successful wine created with the help of sensory science.

other. These trained consumers are familiar with the wines by the time it comes to scoring them, and do three or four replications per wine. "We use multivariate statistics to define the differences between the wines," says Robichaud, "with principle component analysis and spider plots to map the wines in sensory space."

The second stage is known as the Optimization Phase, and for this typically 150 to 200 or more of the 'target' consumers are recruited, although sometimes people who are considered the 'opportunity target' are included as well. "We might look at different markets, but make sure we have at least 75 consumers per market," explains Robichaud. "With Beringer we did this globally. Interestingly, we find that people are wired quite differently such that they like different things. Taking coffee as an example, some people like it strong, dark and rich, some like it medium and coffee-ish, and some like brown water."

Robichaud explains that it is possible to find discrete 'preference segments', defined as groups of consumers exhibiting similar and distinct likes for specific combinations of attributes. Interestingly, preference segments don't relate very well to demographics, such as location, age or gender. "These segments also exist worldwide," says Robichaud, "although the relative size of the segments might differ from market to market." The conclusions from this work are that wine producers need different styles to satisfy the marketplace. "Often companies put all their eggs in one basket, but we can see that they might be targeting just 60% of the marketplace," says Robichaud.

But there's more. The second consumer panel gives a 'like it/don't like it' response to the wines. When this is modelled with the data from the first sensory descriptive panel, Tragon can find out what is driving preferences. They can then go back to the winemakers with consumer preferences articulated in terms that winemakers can use for development purposes. This sensory work is practical: "we help companies generate repeat sales," says Robichaud.

"Product Optimization is quantitative consumer sensory research that provides winemakers with practical information to make 'consumer-defined' wines... We help companies generate repeat sales."



Jane Robichaud of Tragon Corporation is one of the leaders in sensory science

In addition, such work shows consumers have different taste sensitivities. "About 30% of the population are not good measuring devices," she concludes.

Three significant implications of this work are that: (1) consumer segmentation that doesn't involve sensory work is only going to be of limited value, because preference segments don't relate all that well to demographics or perceived national differences in taste preference; (2) market gatekeepers such as wine buyers and key journalists would be advised to be aware of the existence of preference groups and not assume that everyone shares their palate; and (3) you don't want your chief winemaker or buyer to be one of the 30% population segment who can't taste well.

Global insights

A similar approach to Tragon has been adopted by Foster's Wine Estates. Between 2005 and 2007, their Global Insights team completed three lots of consumer sensory analysis, involving white wine, red wine and aromatic light white wines, using the first two for insight into consumer preferences and the third to give an idea of possible future developments. Consumer research was carried out in Australia, the US and the UK to take account of national differences, in conjunction with Australian company Colmar Brunton, who specialise in this sort of work.

The rationale behind the studies was that most wine manufacturers have relied on a production-driven approach to making wines they believe consumers will like, and it is only sensory research that will reveal the attributes in wine that actually drive taste appeal. For the white wine program, the research objectives were:

- To determine consumer preference for different white wine varieties and styles
- To determine how well liked the taste of key Foster's and competitor wines are
- To map consumer taste preference and identify segments
- To construct a model to predict consumer liking for wines on the basis of taste.

The study itself followed a similar pattern to the Tragon research. First, Colmar Brunton's trained panel evaluated products to establish the attributes that best described them, and then a sample of consumers representing the likely target market were recruited to evaluate the same products for overall liking. Combining the trained panel data and the consumer liking data on a map then revealed which attributes drive consumer liking.

As with the Tragon studies, the data defined clusters of consumers who like the same products, and this cluster preference mapping provided an opportunity for tailoring different product offerings to different clusters (or segments) within a category.

"We got really useful results," explains James Craig-Wood, Foster's communications manager, "and this has helped us understand how to tailor wines for different markets, as well as understanding likely future trends. The research has also helped us to tweak certain wines in our portfolio in order to segment better."

Of course, no company spends this sort of time and effort on research and then shares their results with potential competitors; both Fosters and Tragon were unwilling to give specific details about their findings from these studies.

But they are emphatic that this sort of work has a practical application that has the potential to affect sales.

Pink success

One specific example of a successful approach using consumer sensory teams is Yellowglen's 'Pink' sparkling wine. "Yellowglen's chief sparkling wine-maker, Charles Hargrave, worked extensively with the sensory team to produce a premium sparkling rosé style in 'Pink', backed by consumer insights that showed there was a gap in the market for a sparkling wine that appealed to a fruitier palate," says Amanda Pritchard, who is brand communications manager for Fosters' sparkling portfolio.

The consumer research showed that women liked the sophisticated image of sparkling wine, but had problems with the high acidity. As a result of this, the winemaking team softened the acidity and made the wine fruitier, and as a result, this consumer-calibrated wine was a phenomenal success when it was released in July 2003.

"Yellowglen continue to innovate in the sparkling category, driven by consumer insights and trends," claims Pritchard. "In April 2007 Yellowglen Jewel Pink was launched in Australia to great success, tapping into the consumer trend towards health and well-being and for 'better-for-you' products. Jewel is a lower alcohol, lower calorie sparkling wine and already has 2.4% share of the total sparkling wine market."

While this sort of sensory panel work is able to define clusters of taste preference, other ongoing work is looking at the nature of taste variation at a more fundamental level, through attempts to understand better the biology of taste and smell. A recent article in the scientific journal *Nature* used human genome data to show that people have rather different sets of olfactory receptor genes, which explains why some people perceive the same odour differently. And genetic differences in the ability to taste certain bitter compounds have been known for some time: it's possible to separate populations into three discrete groups on their ability to taste a bitter

"In the sensory research community, panel facilitators are just starting to consider, and in some cases screen, panellists for their PROP status so their data can be interpreted in light of their PROP status."



Gary Pickering, Brock University in Ontario, Canada, sensory scientist

compound called propylthiouracil (PROP). Those who are very sensitive to PROP are called 'supertasters', and they are thought to live in a taste world where all sensations are enhanced.

One researcher who has tried to link this work on PROP taster groups with wine is Gary Pickering from Brock University in Ontario, Canada. I asked him whether he has ever used PROP taster status as a sort of first-pass filter in panels of individuals, as a way of making the results from sensory panels less 'noisy'. "In the sensory research community, panel facilitators are just starting to consider and in some cases screen panellists for their PROP status", he replied. "This is being done less to 'filter out' people than simply to know their PROP status so their data - intensity ratings, preference scores and the like - can be interpreted in light of their PROP status."

Pickering points out that there is currently a lot of interest in the PROP sensitivity work because PROP status does affect consumer behaviour. "For instance, I have just been asked to give a talk in Washington next summer at the Research Society on Alcoholism conference, reinforcing the interest in how differences in taste perception between people (as indexed by PROP status), can affect consumer behaviour (in this case predisposition to alcoholism)." Pickering agrees that if populations can be split into discrete tasting groups, then an attempt to make wines appealing to the 'average' consumer might be misguided. "This is exactly where one part of our research is headed," he adds.

But others seem less convinced that the PROP story is as significant as it currently sounds, suggesting that it's just one part of a broader picture of inter-

individual variation. I asked Dr Hildegard Heymann of the University of California Davis whether any of the sensory panels that she had been involved with took into account the individual differences that the PROP taste/non-taster work suggests exist.

"Most do not," she replied. "PROP status is not the only individual difference that exists. It is well studied, maybe due to the 'supertaster' name, which I strongly believe a misnomer. 'Hyper-taster' sounds more real. So companies base their studies on large numbers to account for many, many diversities."

And Jane Robichaud doesn't think that PROP status is all that useful a measure. "We did a bit of PROP testing at Beringer and it didn't work very well: it bore no relation to who was a good bitterness taster." The problem here seems to be that there are many compounds that elicit bitter tastes, with quite different structures, and PROP is just one of them. However, Robichaud does think that about one-third of people don't seem to get bitterness in wines at all.

In conclusion, it seems fairly clear that people are not all living in the same taste preference worlds. Understanding the nature of inter-individual taste variation and then characterising this in ways that can be applied practically should lead to wines that are better targeted to consumers. While the picture that is emerging is complex, it is likely that an enhanced understanding of how consumers actually perceive wines will pay dividends for the wine industry.

In addition, winemakers or buyers should be careful not to assume that all consumers share their tastes, and time and money spent trying to understand the real preferences of consumers will be a good investment for the trade. ■