

Assuring brand integrity

Counterfeiting issues in the spirits industry

Brand ownership contributes significantly to the value of many modern businesses, particularly in the beverage sector. A brand's value is based upon many factors that include its reputation with consumers and its ability to generate repeat sales. While brand owners and manufacturers go to great lengths to ensure the quality and consistency of their products, counterfeiters often take illegal advantage.

by **Ross Aylott**
Aylott Scientific

The integrity of high-value distilled spirits is safeguarded throughout the business. Innovators and marketers carefully design their brands. Lawyers protect trademarks and intellectual property. Distillers, blenders and quality assurance specialists ensure that the resulting liquid is manufactured according to definition, formulation and tight quality standards. Finally, packaging specialists ensure that right materials protect the liquid and that labels correctly describe it so that fully compliant products are sold to satisfied consumers.

The regulations that define spirit drinks are the foundation stones on which brand protection is built. Spirit category definitions in the EU may be found in Regulation 110/2008 and its 46 category definitions describe the processes by which rum, whisky, brandy, gin, vodka, liqueurs and other spirit drinks are made. In the case of whiskies, the EU regulation works in parallel with the UK Scotch Whisky Act 1988 and Order 1990 and the Irish Whiskey Act 1980. Scotch whisky legislation was recently updated and The Scotch Whisky Regulations 2009 came into force last November. However, the EU definitions do not describe the analytical profiles associated with these spirit drink categories; this remains a challenge for the analytical chemist working on brand and generic protection.

Counterfeiting is a major issue

The counterfeiting of manufactured goods is a global problem. Estimates for the market in fake goods reach as much as 10% of world trade. A recent study by the OECD estimated that the value of fakes seized at borders amounts to \$200 billion per year. The



How do you know that you are buying what you think you are buying?

International Chamber of Commerce reckoned that the annual value of fakes worldwide is at least \$600 billion, the World Customs Organisation 2005 estimate was \$624 billion and 2006 EU Customs statistics showed that cross border trade in fake goods had trebled compared to 2005. Whatever the accurate figure, counterfeiting is a major issue.

The distilled spirits industry is a major global exporter; over 80% of Scotch whisky production is exported. However, counterfeiting in certain markets leads to consumers being deceived, governments losing tax revenue and producers losing business. Consumer health can also be put at risk if a counterfeiter uses dangerous liquids like denatured alcohols or methanol. In order to combat these risks, the drinks industry has responded by enhancing its packaging security and engaging with consumer protection officers in key markets. Counterfeiting of spirit drinks occurs in two distinct forms: organised criminal counterfeiting and bar substitution.

Organised counterfeiting involves the

production, distribution and sale of fake spirits. These counterfeiters like to minimise their production costs by recovering as many original packaging components as possible from bars and even domestic waste. They give their goods false authenticity by using combinations of fake closures, labels, cartons and shipping cases and, of course, fake liquids. Sometimes counterfeiters even have fake bottles manufactured. The fake liquids take many forms depending on availability and the sophistication of the counterfeiter.

Organised counterfeiting was historically seen as an issue in Asia, Latin America and Eastern Europe. However, counterfeiters' methods are increasingly sophisticated with fake packaging components now sourced internationally. Whilst the incidence in the well-regulated EU countries is relatively low, illegal products can now be encountered almost anywhere. In recent times Europe has seen the frequent counterfeiting of vodka employing fake closures, labels and even bottles. Fake Scotch whisky has even been found in the UK, although its poor quality meant that it was readily detectable by both

consumers and trading standards.

When there are risks to public health, it is essential that brand owners and government agencies share their knowledge: which in the UK involves the Food Standards Agency, local authority trading standards departments, HM Revenue & Customs, police, industry trade associations and brand owners.

On-trade bar substitution takes place, as the words suggest, in pubs, clubs and hotel bars. Genuine branded bottles, once their bottles are empty, are simply refilled by bar staff using cheaper inferior product of the same generic category. Bar substitution is encountered globally.

All types of distilled spirits may be counterfeited. Premium spirit categories such as Scotch whisky and cognac are the main targets due to the high profit margins. Gin and vodka are also targets in the bar trade. The fake liquids themselves are invariably cheaper products, often extended with locally obtained alcohol. The second bottle may then be reused providing base packaging materials for another counterfeit that uses inferior liquids and so on. Nothing goes to waste.

Protecting the brand

The most effective way to take action against counterfeiters in a particular country is dependent upon the availability of appropriate laws, enforcement agencies and capability in brand authenticity analysis. The appropriate law to employ can vary from country to country, as does the enforcement agency to engage. Deceiving the consumer is an illegal act in many jurisdictions, contravening for example UK consumer protection and food safety laws. The loss of excise tax revenue has also proved to be a good motivator of enforcement agencies in other countries. Counterfeit cases invariably involve tax evasion, trademark infringement and consumer deception.

Some enforcement agencies operate in relatively small geographical areas, whereas counterfeiters move their goods rapidly across country and increasingly across international



Problems of spirit counterfeiting and the harmful effects of illicit hooch production in headlines from around the world.

borders. There are times when enforcement agencies have solely focused on their own area of responsibility (such as duty evasion) to the detriment of the wider investigation. More coordinated thinking by enforcement agencies is to be encouraged nationally and across borders.

Counterfeit investigations invariably require forensic support in the form of authenticity analysis of both the liquid and its package. Firstly, checking packaging authenticity involves careful examination of the suspect sample in comparison with the genuine article. Starting with the bottle, the investigator will examine the “punt mark” that identifies the glassworks that made the bottle, the number and shape of the mould and the thickness of the glass. The bottle closure will be examined to see if the pilfer-proof ring is intact and its design and print compared to the genuine article. Labels will be examined for paper quality, print detail and adhesives. The manufacturer’s lot code can be used to identify the date and place of bottling and to associate the liquid with a brand and specific production batch. This examination enables investigators to build up a picture of the counterfeiter’s mode of operation.

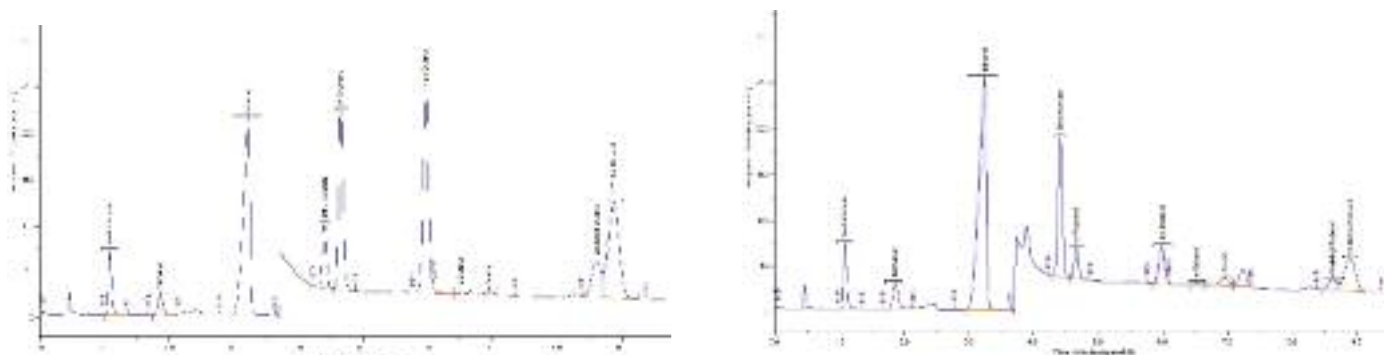
Secondly, the investigator calls upon the chemist to determine liquid authenticity. Congener rich spirits such as Scotch whisky have long been analysed by gas

chromatographic methods. The analyst determines alcoholic strength and major volatile congeners in a suspect sample and compares results with the normal ranges for the genuine brand. The results allow the analyst to understand the nature of a fake liquid – is it another Scotch whisky, another generic whisky, is it diluted with a cheaper alcohol from another category or indeed does it contain a dangerous component such as methanol? This information further helps investigation by elucidating the counterfeiter’s method of operation.

Authenticity analysis can be conducted at most brand owners’ laboratories, at public analysts and at enforcement agency laboratories in many countries. Various distilled spirits producers make available their authenticity expertise by collaborating with enforcement laboratories.

Recent developments in field-testing

However, these chromatographic methods can be expensive and time consuming. One major producer responded by developing a fast and reliable field test that can pre-screen whisky samples and thus eliminate many samples from the chromatographic procedures. The characteristic UV/visible spectra of Scotch whisky brands are used to authenticate test samples on a small hand-held instrument called the “brand authenticator”. A 2ml sample is introduced into the flow cell; its spectra recorded between 200 and 460nm and compared against known brand data. Field test samples whose authenticity is deemed pass (showing a green light) are considered authentic. Samples whose authenticity is deemed fail (red light) or suspect (yellow light) are retained and returned to the laboratory for their authenticity to be confirmed by gas chromatography. It is a simple operation to load the instrument’s memory with spectral data covering many individual brands and to call this information forward as field tests require. These field tests enable investigators and consumer protection officers to screen relatively large numbers of



Major volatile congener gas chromatogram for a blended Scotch whisky (left) and a counterfeit example (right). Note the differences in ethyl acetate, propanol and butanol.



The SAD Brand Authenticator®, a small-hand held UV/visible spectrophotometer designed for investigators to use in the field.



Above left: This vodka found on sale in Scotland in 2003 contained 5.7% methanol, the upper limit at 40%ABV is 200ppm.

Above: The counterfeit Imperial bottle on the left had no batch jetting, the duty stamp did not fluoresce under UV light and it was in a Quinn bottle where the real supplier uses Rockware.

samples quickly and at low cost.

Checking the authenticity of white spirits such as gin and vodka is more problematic. The volatile botanical congeners in gin exhibit wide congener ranges and have negligible UV/visible spectra. Similarly, most vodka brands contain few analytical attributes that may be used in authenticity analysis. Therefore, the industry took an alternative approach for white spirit brand authenticity by using authenticity indicators, unique components in a product whose detection shows that the product is what it purports to be. The indicator can be a unique flavouring or simply a trace additive used solely for authenticity purposes.

Authenticity indicators may be proprietary products from a specialist supplier or may be invented in-house. Indicators should enable enforcement officers working in the field to decide whether a test sample is either genuine or suspect in the same way as the brand authenticator. The best authenticity indicators enable both field and confirmatory tests with a combination of primary and secondary indicators. The primary indicator triggers a response in a coloured dipstick used by the enforcement officer in the field. The secondary indicator enables a confirmatory test in a laboratory. Various spirits companies now have their own versions of authenticity indicator. Brand owners often make their dipsticks available to trading standards officers and their role in regulatory enforcement is now well established.

Ingredients selected for use in authenticity indicators must obviously be permitted for use in foodstuffs, must be permitted in the chosen distilled spirit and must not cause any change to the organoleptic properties of the product. Indicators should be covert, yet easily and cheaply detectable in the host product by field operators following basic training. When designing brand authenticity indicators, careful reference to definitions and regulations is required, as some spirit

categories like Scotch whisky do not allow additives.

Whilst the formulation of each authenticity indicator should be unique and confidential to the brand owner, it is desirable that details of its composition be made available to enforcement laboratories for analytical and evidential purposes. In a similar way, it is desirable that precise indicator formulations are not released during court proceedings. Courts are usually sympathetic to this need when an expert witness is called to speak on behalf of the brand owner. In a similar vein, where ingredient listing is under consideration, it is important that authenticity indicator formulations are not revealed in ingredients' lists, a position well understood at government level.

When the EU updated its spirit drink definitions within Regulation 110/2008, the industry took the opportunity to propose wording that takes account of the use of authenticity indicators in certain spirit categories. For example, the new London Gin definition contains a clause that covers the use of authenticity indicators based on sweetening.

Generic authenticity

Finally, distilled spirits can be subject to generic counterfeiting as well as brand counterfeiting. Counterfeiters take advantage of the good reputation of a spirits category and create their own brands that claim to be genuine products. Generic counterfeiting is primarily a concern in the less regulated markets where there may be less clarity on definitions and consumer protection law.

Generic counterfeiting presents a further challenge to the industry chemists because the analytical data employed must encompass all spirits possible within the category, rather than the narrower analytical fingerprints associated with specific brands. Chromatography can help the analyst check for the presence of foreign components or the

absence of key congeners. Trade associations that represent the companies operating in each spirits sector, usually lead action against generic counterfeiters. In cases where such products imitate the trademarks and packaging genuine brands, the lawyers of the brand owner will take action.

In conclusion, it is in consumer, enforcement agency and brand owner's interests to ensure that incidences of counterfeiting are minimised. Scientific tools for the determination of brand authenticity have significantly advanced in recent years and delivered faster cost effective field tests. The majorities of brand owners are keen to cooperate with enforcement agencies in their work against offenders. Their ongoing advice, authenticity techniques and prosecution witness statements demonstrate this commitment. ■

■ This article is based upon a lecture presented to the 5th Annual Meeting and Conference of TRACE, a project funded by the European Commission, at Freising, Germany on 2 April 2009.

The author



Ross Aylott is a chemist and his beverage experience covered 28 years based at Diageo Technical Centre Europe where he specialised in quality, process, regulatory, risk management, anti-counterfeiting and trade representation. Following recent retirement Ross set up Aylott Scientific, a consultancy providing

specialist technical expertise and technical training to the beverage industry. Key areas of activity include brand protection, product regulatory compliance and science and technology. You can reach Ross at tillyrie@hotmail.co.uk