

## Wine smell like wet dog? Then you might want to check your bottle

Researchers shed light into why some tipples end up with more tainted aromas than others – and it's all to do with bottle types

By Sarah Knapton, SCIENCE EDITOR

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When concocting an enticing wine bouquet, few vineyards would aim for the aroma of “wet dog” or “boiled cabbage”.

Yet many winemakers are inadvertently infusing such unpalatable scents into their vintages simply by using [clear glass bottles](#), scientists have found.

The reason is a curious phenomenon known as “gout de lumiere” or “lightstrike”, in which sunlight or fluorescent shop lighting reacts with unstable compounds in the wine, bringing deeply malodorous results.

Italian researchers found that within just seven days of storing [white wine in glass bottles](#), the amount of terpenes – compounds which add pleasing floral and fruity notes such as lilac and blueberry – diminished by up to 30 per cent.

Likewise, there was up to a 70 per cent loss of norisoprenoids in the same time period, which are responsible for complex woody notes of eucalyptus and even the slight petrol scent found in riesling.

In contrast, the same wines kept in dark bottles for 50 days – when the trial ended –

showed no such deterioration.

Wine in clear bottles were also found to contain greater quantities of a nose-wrinkling compound called “4-hepten-1-ol” - which has a smell evoking rancid oil.



Italian researchers found that within just seven days of storing white wine in glass bottles, the quality of the aroma dropped considerably compared to those stored in darker bottles | CREDIT: Steve Cukrov/Alamy Stock Photo

In recent years, it has become popular for vineyards to choose clear flint glass bottles for white wines to showcase the depth of colour of the liquid within. But researchers warn that the practice is stripping the wine of the pleasant aromas which often are key to its identity and may impact overall taste.

Writing in the Proceedings of the National Academy of Sciences journal, researchers from the University of Trento in Italy concluded that bottling white wine in clear glass has “tremendous consequences”.

They said: “Years of extensive and hard work from the vine to the bottle, to deliver sensorially identifiable quality products, in terms of grape cultivar used, can be lost in a few days.

“Flint glass bottles bring no benefit to the wines, while the multiples changes in the

aroma composition can jeopardise the quality, depriving the wine of the identity of the variety and terroir. In other words, the wine is naked.

“It is of paramount importance for the scientific community to study the depth and length of this problem in all foodstuff and provide valuable knowledge to the food industry, in order to redesign packaging and shelf-life recommendations and rules.”



Red wines have a natural protection in the form of tannins | CREDIT: Peter Dazeley/The Image Bank RF

Lightstrike is a known problem for winemakers and occurs when bottles are exposed to the blue to ultraviolet wavelengths at about 350-450 nanometres. It is one of the reasons for cellaring wines in the dark.

Red wines have a natural protection in the form of tannins and are also more likely to be bottled in darker glass.

However, many retailers and restaurants are unfamiliar with the concept, often allowing white wine to chill in brightly lit, or glass-fronted, fridges.

Experts believe that even an hour's exposure to the wrong kind of light can release unpleasant compounds in wine leading to smells that have been likened to rotten eggs.

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smelly cheese or sewage.

The effect of sunlight on wine can even be detected while sipping champagne outside, when a strange odour can quickly appear in the glass on a bright day.

## Wrapping for protection

Some producers have started to take action, with English winemaker Nyetimber opting for dark amber glass for its sparkling wines to get around the issue.

Likewise, Slovenian winery Radgonske Gorice released an Untouched By Light sparkling wine in 2020, which comes in a black bottle and is made and marketed in complete darkness with staff wearing night-vision goggles.

More expensive tipples, such as Louis Roederer's Cristal Champagne, are often packaged in dark cellophane wrapping to filter out harmful rays of light. It is estimated that the orange wrapping on Cristal stops 98 per cent of light getting through.

However, many people do not realise what the wrapping is for and remove it soon after purchasing.

For the latest study, scientists examined the effects of light exposure under simulated supermarket shelf conditions on 1,052 bottles of 24 white wines from four cultivars: pinot gris, chardonnay, müller-thurgau, and gewurztraminer.

According to the authors, the findings suggest the need to reassess bottling and storage recommendations for white wines, which rely to a greater extent on aroma for individual identity than do red wines.

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