

# Grape expectations for healthier wine

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A new technique that uses ozone to preserve grapes could help prevent allergies and boost healthy compounds at the same time, reports Jennifer Rohn in *Chemistry & Industry*, the magazine of the SCI. The same technique could be used in the wine-making process to produce healthier wines without the added sulphites that can cause asthma and other conditions in some people.

Mass-marketed grapes can remain in storage for months and are usually treated with sulphur dioxide to prevent decay. Although the sulphur dioxide is effective, it is corrosive and can cause severe allergic reactions in some people. Wine-makers have a similar problem in that the sulphites added to wines to prolong their shelf-life and allow them to age can make their wines unpalatable to some drinkers.

Francisco Artes-Hernandez and his team at the Technical University of Cartagena in Spain compared several different preservative methods with a new technique that involves exposing macroperforated packages of grapes at 0 degrees C to cycles of 0.1 micro liters per liter of ozone. They found that ozone treatment was 90% as effective as SO<sub>2</sub> at preventing decay. In addition, ozone-treated grapes had up to four times more antioxidants than untreated grapes (*Journal of the Science of Food and Agriculture*, doi 10.1002/jsfa.2780).

It is not yet known why antioxidant levels increase, but because these compounds are up-regulated in response to environmental stress in plant cells, it could be that the ozone is perceived as a biochemical insult.

Andrew Waterhouse, Chair of the Department of Viticulture at University of California, Davis, said that because wine growers don't store grapes for prolonged periods, they are unlikely to use ozone in any preservation process. He agreed, however that the ozone process could be tweaked to replace problematic sulphites added to wine during the liquification process, presenting the possibility of healthier more hypoallergenic wines.

Antioxidants, natural compounds found in red wine, chocolate, coffee and many fruits, are believed to help prevent a variety of diseases including cancer and neurodegeneration.

Source: Society of Chemical Industry

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