



ROSA SHOWS PROMISE

Amorim is in the final stages of testing a new treatment process that promises to substantially reduce 2,4,6-trichloroanisole (TCA) contamination in wine corks.

Known as ROSA, the proprietary process developed by Amorim researchers has already been introduced into two Amorim plants that make technical corks. Four other plants are scheduled to begin using the ROSA process by year's end.

Initially, Amorim is using ROSA in processing the cork granules that form the shanks in technical corks, such as Twin Top® and champagne corks.

The Geisenheim Research Institute in Germany and the Campden & Chorleywood Food Research Association in the United Kingdom recently completed a series of independent validation tests on ROSA-treated granules.

According to Amorim's head of research and development, Professor Miguel Cabral, these two leading laboratories have verified that ROSA could reduce TCA contamination in granules by 75 to 80 per cent.

Geisenheim is also undertaking experiments using ROSA-treated agglomerate corks to measure the incidence of TCA in bottled wine under typical storage conditions.

Depending on the outcome of further internal production trials, Amorim plans to introduce the ROSA process into the industrial manufacture of its cork discs (also used in technical corks) and whole natural stoppers.

Following the completion of Amorim's internal testing, both the Geisenheim and Campden & Chorleywood laboratories will be asked to validate the results for ROSA-treated discs and whole natural stoppers.

Amorim has also approached wine research institutes in Australia and the United States to validate the ROSA process.

Prof. Cabral was unable to indicate whether ROSA was the long-awaited solution to TCA or when ROSA-treated discs and stoppers would be commercially available.



→ Initially, Amorim is using ROSA when processing the cork granules that form the shanks in technical corks.

"A long period of very demanding scientific research and industrial-scale developmental work has got us to what I would describe as an advanced experimental stage," he said.

"We have had outstanding results with this technology in the laboratory and in semi-industrial prototypes, but there are some engineering issues to resolve in relation to discs and stoppers and it remains to be seen how the process can be incorporated throughout our entire cork product range."

The chairman of Corticeira Amorim, António Amorim, said that, while he believed the ROSA process offered great

promise, his company would not rely on it solely in the fight against TCA contamination of cork.

"We believe we are on the right track with ROSA and it will add to existing processes such as INOS and CONVEX," Mr Amorim said.

"However, Amorim's philosophy is based on the need to eliminate or avoid contaminants at each critical point in the production of corks — from harvest right through to delivery.

"At that final stage, it then becomes important for the wine industry to understand and follow correct cork storage and handling procedures."



→ From left: Amorim Academy members Joaquim Amorim, Robert Tinlot and Professor Pascal Ribereau-Gayon at the 2002 awards ceremony.



ACADEMY NEWS

GRAND PRIX PRIZE AWARDED

The Amorim Academy awarded its 2002 Grand Prix prize to Catherine Peyrot des Gachons (University of Bordeaux 2) in December for her thesis titled *Research into the aromatic potential of Vitis vinifera L.cv Sauvignon grapes*.

Dr Peyrot des Gachons's work has extended knowledge of the characteristic components of the white sauvignon grape in Bordeaux.

Her study produced a precise method for measuring aroma precursors in sauvignon grapes, their distribution throughout the berry and their evolution during maturation and the winemaking process.

Dr Peyrot des Gachons found that alcoholic fermentation has a profound influence on the release of aromatic compounds derived from these precursors.

New compounds were also identified, making it possible to interpret the mechanism by which the aroma precursors are formed.

INDUSTRY DEBATE CONTINUES

The Amorim Academy will continue its role of facilitating debate on issues affecting the global wine industry with a forum at Vinexpo 2003 in Bordeaux.

To be staged on 25 June, the debate is titled *Consumption: what will drive growth?*

According to Amorim Academy president, Robert Tinlot, some of the issues that will be covered include:

- How are markets to be widened in response to increased production?
- Is the consumer trend favouring quality wines, to the detriment of ordinary table wines, a deeper sign of a complete change in mentalities?
- What position is to be taken on emerging markets?

The forum will bring together wine experts from the media, marketing, production and wine institutions.

Further information about the Amorim Academy can be obtained at www.academie-amorim.com.

NOT SO RANDOM OXIDATION

The wine fault known as 'random oxidation' costs the wine industry dearly but the chemistry underlying the process is, as yet, unclear and solutions to the problem are not well appreciated.

Recent research that is beginning to reveal the factors that contribute to random oxidation may help winemakers avoid the problem.

Random oxidation describes the phenomenon where a bottle of white wine turns brownish, losing flavour and bouquet six to 18 months after bottling. The acknowledged incidence ranges from one in 100 to one in 25 bottles.

Many winemakers blame random oxidation on the closure, citing variations in cork quality. To complicate matters, the fault is often confused with 2,4,6-trichloroanisole (TCA) contamination.

Winemakers typically add sulfur dioxide to wine to prevent oxidation. However, if the sulfur dioxide content drops below a certain concentration, browning may commence suddenly.

Ascorbic acid, a well-known antioxidant, is sometimes also added to wine to 'brighten' the fruit quality and scavenge oxygen.

According to Professor Geoff Scollary, director of the National Wine and Grape Industry Centre (NWGIC) at Charles Sturt University in Australia, solving the riddle of random oxidation may depend on the interaction between ascorbic acid and sulfur dioxide.

Ascorbic acid itself acts as an antioxidant, but it breaks down into chemicals that can promote oxidation. One of these is hydrogen peroxide but NWGIC researchers have shown that there is another, as-yet-unknown, breakdown product of ascorbic acid that also promotes oxidation.

Scollary's team has established that when ascorbic acid and sulfur dioxide are present in similar quantities, the onset of oxidation is delayed, but not prevented, providing a possible explanation for the six to 12 months lag before oxidation begins.

Contrary to the advice in some winemaking texts, his team found that the addition of ascorbic acid required more sulfur dioxide to prevent oxidation than would be required if no ascorbic acid were present.

The use of ascorbic acid is a controversial practice and researchers recommend its addition at bottling time only. However, some wineries continue to add ascorbic acid at the crusher.

Research also indicates that the wine cork may not be as significant a factor in random oxidation as many believe.

The search for chemical residues within corks that might oxidise wine has proved largely fruitless, while experiments on the oxygen permeability of cork stoppers have been inconclusive.

Retired wine chemist John Casey says the oxygen and oxidants that initiate random oxidation are likely to be introduced during wine transfer and during bottle filling and corking. Small amounts may also diffuse from the cork.

"Excluding air during wine transfer and bottling and ensuring adequate levels of sulfur dioxide are the way to solve this problem," he says.

Vacuum corkers remove air from the headspace, but they do not work consistently well, making it possible for some bottles, but not others, to be sealed with significant amounts of oxygen. Other sources of oxygen pick-up include small leaks in feed lines and stoppages or slowdowns in bottling runs.

"There is a widespread view that the permeability of corks is the cause of post-bottling oxidation, but the evidence just doesn't stack up," Casey said.

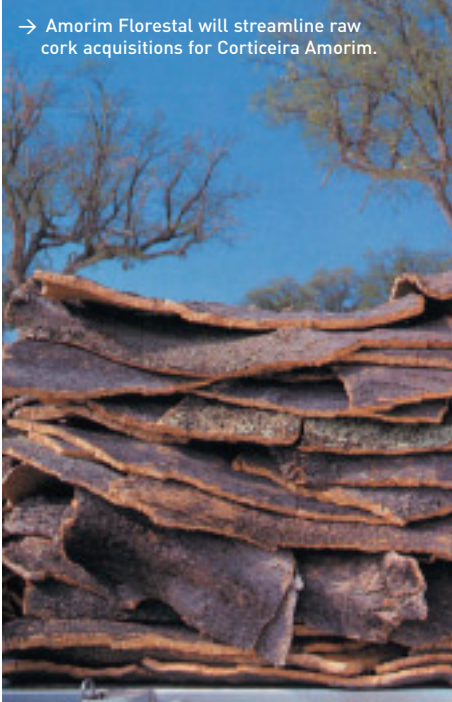
The full text of this article, including references, is available on the Internet at www.corkfacts.com/banrmenu/webxmain.htm



→ Excluding air during bottling will help reduce the incidence of random oxidation.



→ Amorim Florestal will streamline raw cork acquisitions for Corticeira Amorim.



PURCHASING UNDER ONE BANNER

Corticeira Amorim's commitment to identifying and minimising risk at every stage of the cork manufacturing process has taken another step forward with the establishment of a new company solely responsible for the group's purchasing of raw cork.

The company, Amorim Florestal, will streamline the process of raw cork acquisitions for the whole group, resulting in significant economies of scale.

"The establishment of Amorim Florestal is another of the organisational changes the group has implemented under the leadership of António Amorim," said the head of Amorim Florestal, Dr Jorge Peixoto.

"Having one entity responsible for

purchasing is much more efficient and is an important element in Amorim's quest for total quality control.

"In the past, with each plant purchasing raw material separately, there was a tendency to look after specific needs and ignore the group as a whole."

One of the key benefits of purchasing through a single company is that it will help Amorim secure raw material at a better price.

Amorim currently buys about 15 per cent of the annual Portuguese cork harvest.

Importantly, the company only buys from growers complying with the industry's code of practice and has records going back 40 years to help it identify and select the best-quality raw material.

FROM BARK TO BOTTLE: THE HARVEST

The harvest or 'stripping' of bark from the cork oak tree is a delicate operation that is critical to the on-going vitality of the tree.

Like all elements of cork forest management in Portugal, harvesting is strictly controlled.

A cork tree is not considered mature enough for harvest until its trunk is at least 70 centimetres in diameter. This is usually when the tree is about 25 years old.

By law, subsequent harvests can only be made at intervals of at least nine years.

This gives the bark time to regenerate to a thickness where it can be safely stripped from the tree and has the depth to allow production of whole corks.

The cycle continues on average for the next 150 years, during which time the tree will be stripped around 15 times.

However, bark from the first two harvests (producing virgin and secondary cork) is not regular or pliable enough for wine closures. It is used instead for a wide range of products.

Only after the third harvest, when the tree is about 43 years old, is the bark of sufficient quality for bottle stoppers.

Harvesting occurs during summer (June to August) because at this time of the year tree growth is at its peak. This means the bark can be removed quite easily and a new outer skin quickly grows to protect the delicate inner bark.

In an ancient craft passed down from generation to generation, skilled workers

→ In Portugal, the harvesting of cork bark is strictly controlled.



strip the outer bark using special axes with 18 centimetre blades.

Only 30 per cent of the tree's bark is stripped at each harvest.

On average, a cork oak will yield 45 kilograms of bark per harvest. Twenty per cent of this will be used to produce some 3000 wine corks while the rest is used in other applications.

At Amorim, the cork planks are stacked above ground at the company's state-of-the-art plants at Ponte de Sôr and Coruche.

The planks are left to 'season' for six months in the open air before undergoing Amorim's revolutionary new processes that produce ultra-clean cork.

Between harvests, forest husbandry is undertaken to keep the trees in good health and ensure an on-going high quality cork yield.

On average, the annual harvest in Portugal now yields around 185,000 tonnes of high quality cork bark — about 50 per cent of the world's raw cork.



DROP US A LINE

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IN BRIEF

NOTHING IS PERFECT

The Australian Wine Research Institute (AWRI) has found that 'rubbery' or sulfide-like odours are significantly more noticeable in white wines sealed with screw-caps than with those under cork.

In a report published in the February edition of the AWRI's *Technical Review*, researchers confirmed the problem was due to chemical reactions involving sulfur compounds in the oxygen-deficient environment of wine sealed under screw-caps.

The researchers identified the fault in a semillon wine stored for 18 months or longer and in a range of Australian riesling wines from the 1993 to 2002 vintages. The odours were not dispelled by decanting or with swirling the wine in the glass.

In canvassing the possible causes, the AWRI researchers concluded that the sealing properties of the screw-cap closure may be "particularly conducive to strongly reductive conditions". They suggested that the use of screw-caps may necessitate "more careful avoidance by winemakers of sulfide compounds in the wine at bottling".

Wine experts believe that cork is better able to adsorb sulfide-like odours from wine, reducing or eliminating the problem over time.

The ARWI findings come amid claims of 'technical perfection' or 'zero failure rates' among proponents of screw-caps for wine closure.

ENDORSED BY MONDAVI

One of the world's most prestigious winemaking companies, Robert Mondavi, has granted Amorim the status of 'Certified Supplier' and 'Qualified Supplier' of TwinTop® and natural whole corks, respectively.

A Mondavi supplier performance report acknowledges Amorim's "consistent performance in delivering outstanding quality and service".

Amorim received the maximum valuation score in several key areas, including financial stability and business plan, production capacity, on-time delivery and research and development.

On the important 'Production Site Auditing' valuation, an item that includes employee safety, environmental practices and cleanliness, Amorim scored nine points out of 10. → 01

TWIN TOP® BOOM 'DOWN UNDER'

Amorim Cork Australia is enjoying a boom in the sales of its Twin Top® technical corks, selling more than 90 million units in 2002.

The record year more than doubles the company's sales results in 2001 and comes just over three years after Amorim opened its Twin Top® production facility in Melbourne.

Amorim Cork Australia managing director Noel Heyes said the increase in sales volume was testimony to the growing acceptance of the product in the Australian market.

TOP WINE SPARKLES IN SA

South Africa's *Wine* magazine, in cooperation with Amorim Cork South Africa, has staged the first Cap Classique Challenge in Cape Town.

Developed to identify the best 'methode champenoise' sparkling wine in South Africa, the Challenge received 44 entries of which 37 were awarded a classification of three or more stars.

First prize went to Johan Malan for his 1999 Simonsig Kaapse Vonkel.

Malan said ageing with a cork stopper will improve the quality of sparkling wine over the next five years and, depending on storage conditions, his Kaapse Vonkel could be consumed anytime within the next 15 years. → 02

SUPPORT FOR SPANISH DISASTER

Amorim's Spanish subsidiary, Victor & Amorim, is supporting the Haro Region Winemakers Association in relief efforts for the population of Galicia.

Virtually the entire 1120 kilometre (695 mile) coastline of the Galicia region has been affected by oil following the sinking of the tanker *Prestige* late last year.

The winemakers association has issued a limited reserve release named *Reserva Solidaria con Galicia*, with each six-bottle case selling for 85 Euros (\$US91). The proceeds will benefit more than 20,000 fishermen hard hit by this ecological disaster. To contribute to the relief fund visit www.diecisiete.com.

NEW PRODUCTION FOR ITALY

Amorim Cork Italia has established new production facilities in the Conegliano/Veneto area.

An investment of 2.5 million Euros (\$US2.87 million), the new site has a total area of 6000m² and is equipped with the latest cork treatment technology.

This investment will enable Amorim Cork Italia to provide the Italian wine industry with more reliable products and more efficient service.

The move is part of a series of measures designed to double Amorim's market share in Italy by 2006.

AND FINALLY...

An unusual model of Rome's famous colosseum has been discovered in the archives of the Melbourne Museum in Australia.

Made of cork, the unique model is believed to have been built by German craftsmen in the late 18th or early 19th century.

Sent to Melbourne in 1929, the model was previously on display at the South Kensington Museum in London. → 03



→ Amorim has secured 'Certified Supplier' status from Mondavi for its TwinTop® corks.



→ The 1999 Simonsig Kaapse Vonkel has won the first Amorim sponsored Cap Classique Challenge in South Africa.



→ Gladiatorial discovery — the cork colosseum.