

VETROTIME

MARKET
Vinegar
and oil

STUDY
The effect of light
on the quality of wine

ART
Glass – as far as
the eye can see



03 MARKET	Vinegar and oil
06 SUSTAINABILITY	Fit for the circular economy
10 NEW DESIGNS	A showstopper in glass
16 SCIENCE	The effect of light on the quality of wine
18 ART	The world of museums

Dear readers,

Although it feels like the year has just begun, we are now well into 2016. Time has flown and it is already almost a year since Vetropack Italia joined us as a subsidiary. Since then, it has become an integral part of our group of companies, as indeed you will see on pages 3 to 5 of this issue of Vetrotime. After all, it's impossible to talk about vinegar and oil bottles without mentioning aceto balsamico and olio di oliva, two of Italy's

most iconic exports – even though, in fact, greater quantities of olive oil are produced in Spain and Greece consumes a lot more of it. However, Vetropack Italia doesn't just make vinegar and oil bottles. In addition to standard containers for wine, spirits and food – to name but a few – its offerings also include a wide range of special glass containers for long-established companies whose reputations extend far beyond Italy's borders. At the moment, the Group is working flat out to integrate its new Italian subsidiary – purchasing the company was just the beginning. It takes time to harmonise all the processes, standards and methods.

This is something that Vetropack Gostomel taught us particularly well. This year, our glassworks in Ukraine is celebrating its tenth year as a Vetropack subsidiary. You can read about all the ways it has changed over the last decade on pages 8 and 9. We are proud of how this company has developed and how it has achieved high productivity levels and a strong market position – no mean feat considering the political instability in the region and the ongoing financial and economic crisis.

The final two pages of this issue of Vetrotime are dedicated to glass museums – and who knows, perhaps you might even find some inspiration for an excursion or two? Glass is a fascinating material that has cast its spell on people for aeons, whether as precious containers in bygone eras, as valuable works of art or as healthy packaging.

Best regards,


Claude R. Cornaz



VINEGAR AND OIL

Fine condiments

Vinegar and oil are indispensable ingredients in any kitchen, refining and enhancing dishes and adding a little extra touch of flavour. Packaged in glass bottles, they cut an attractive figure on the supermarket shelves or on the dining table. Vetropack produces glass packaging in all shapes and sizes for these exquisite condiments.

Olive oil with a subtle lemon aroma adds a refreshing note to salads. If you prefer a nuttier taste, however, try walnut oil instead. There is a wide range of flavours available when it comes to both oils and vinegars. What they all have in common is their flair for refining and enhancing dishes. And that is precisely why it is worth devoting particular attention to preserving these condiments, whether they are delicately aromatic or strongly flavoured, and nothing does this better than glass packaging.

On the market there is a trend towards making packaging more and more compact, with less conventional flavours in particular increasingly being sold in 0.5 litre containers. Nevertheless, 0.75 and 1 litre bottles are still proving popular in the supermarkets. There is a rising demand amongst customers for high-quality, individually shaped packaging solutions which make the delicious vinegars and oils they contain stand out from rival products. Both these condiments are packaged in amber, green or transparent flint glass bottles, usually closed with a screw cap.

The range offered by Vetropack Group includes both standard bottles and customised models, with bottle shapes varying from round to square or even octagonal. There are no limits to the variety of forms available. The bottle necks may be long or short, while the shoulders can be rounded, squared off or blended smoothly into the body of the bottle. Most bottles for vinegar and oil feature printed labels.

The most popular oils

Czech and Slovak households do most of their cooking with sunflower oil, with olive oil and rapeseed oil coming in as



DID YOU KNOW?

Did you know that rinsing your mouth out with oil, also known as oil pulling, is a simple way of cleaning your mouth? This method comes from Ukraine and was presented at a meeting of the All-Ukrainian Association attended by oncologists and bacteriologists in the mid-1980s. Regular oil pulling helps to keep the body healthy and prevent diseases. All you need to do is take a little oil and use it as a mouthwash. It also helps to prevent gums from bleeding.



second and third favourites. More unusual flavours are in a minority. Organic products and brands by smaller companies are doing extremely well in Europe. The regional factor has a noticeable impact, especially in the case of speciality oils such as Styrian pumpkin seed oil, which comes from Austria. In terms of vegetable oils, sunflower oil is very popular in the countries where Vetropack bases its production operations. Rapeseed and olive oil are also amongst the front-runners. Ukraine is the world's largest producer of sunflower oil, so it is no wonder that this variety accounts for two thirds of the domestic vegetable oil market there. Not so in Italy, however – the Italians love olive oil so much that their domestic production output cannot keep up with

consumer demand. The world's largest olive oil producer is actually Spain, though its annual consumption per capita is lower than Italy's. When it comes to consumption, Greece holds the world record with around 20 kilograms consumed per person each year.

Vinegar – then and now

As well as adding a refining touch to dishes, vinegar plays a key role in pickling vegetables. The most common varieties used for this are white wine vinegar or herb vinegar. The latter was also used for medicinal purposes in the Middle Ages and diluted with water in the 19th century to create a refreshing drink.



Balsamic vinegar is not just a popular ingredient in salad dressings, but is also used in desserts. Strawberries marinated in balsamic vinegar and served with vanilla ice cream and finely chopped fresh mint leaves taste divine. Equally delicious is dark chocolate mousse with a balsamic vinaigrette made from balsamic vinegar, orange zest and olive oil. For those who prefer something more savoury, a piece of fresh Parmesan with a drop of sweet-and-sour balsamic vinegar is a flavour combination to be relished.

Healthy fats

Which oil you prefer to use in your own kitchen is a matter of taste – unless you want to give your health a boost and

enjoy some delectable dishes at the same time. Olive, rapeseed and groundnut oil, for example, have a positive impact on blood sugar, cholesterol and blood pressure levels. Vegetable oils in general usually contain a higher proportion of unsaturated fatty acids and are therefore very beneficial to the human body. Unsaturated fatty acids are classed as healthy fats and are an essential building material for cells and nerves. Omega-3 and omega-6 are two well-known fatty acids of this kind. Omega-3 fatty acids are found in rapeseed, walnut and linseed oil, while the omega-6 versions feature in sunflower, safflower and soybean oil. Cooking with different oils not only brings a bit of culinary variety into everyday life, but also has positive effects on health.

HEALTH AND THE ENVIRONMENT

Fit for the circular economy

The aim of a sustainable circular economy is to fully reintegrate the raw materials needed to produce an item back into the production process beyond the product's life cycle. In the case of glass, for example, this is done through recycling. One of the key elements of a circular economy that is fit for the future is an up-to-date chemical risk management system.

Health and environmental protection have long since gone from being niche topics to high-profile issues. Consumers are showing a growing interest in what products are made of, how and where they are produced and the values represented by the companies behind popular brands. With information being freely accessible online, prospective customers can find answers to questions, such as what potentially harmful chemicals are present in a product's packaging. Transparency and openness therefore play an increasingly influential role in people's purchasing decisions and can thus be commercially relevant key success factors.

Another trend is a growing concern about the environmental impact of consumption. Although the focus is often on food packaging, its own effect on the environment – taking the whole food product into account – is actually relatively low. In the Swiss market, it is estimated that food packaging alone accounts for just one per cent of food's overall environmental impact. Nevertheless, reducing the environmental impact of packaging is important and the right thing to do. The same goes for optimising the health aspects of food packaging, which is becoming more and more of a challenge in the context of a sustainable circular economy. The idea here is to work with materials that can be reused over and over again. Since this involves timescales spanning several decades, it is not always possible to foresee how a particular material will be used in the future. With this in mind, the best approach to take is to make no compromises when it comes to chemicals and to avoid

any substances which are already known to be potentially hazardous from being used in food packaging in the first place. Otherwise they could cause problems in the circular economy later on.

Sustainable use of resources

Endocrine disruptors (hormonally active chemicals), carcinogenic substances (which can cause cancer) and the combination effects of such chemical mixtures are associated with increased health risks, as is exposure to certain chemicals during prenatal development. This is a complex issue: It is not just a question of chemical risks and chemicals' long-term effects on human health, but there is also the urgent need to use resources in a truly sustainable way – namely, safely reusing materials without any chemicals-



FOOD PACKAGING FORUM

The Food Packaging Forum (FPF) is a non-profit foundation which was established in Zurich in 2012. It focuses on the scientific principles behind food contact materials and their impact on health as a consequence of daily exposure to chemicals through food. The FPF is an independent, science-based organisation that provides high-quality, factually correct information for various stakeholders.

related health concerns during many decades, even in food packaging. It is therefore clear that carrying on with a “business as usual” approach to chemical risk management in a circular economy leads to problems with chemicals that are harmful to health. And according to the principles of sustainable development, we need to use available knowledge to preserve the health and quality of life for future generations. That includes taking substances that are already known to pose problems out of circulation. This requires rethinking current approaches, something which has already begun to take place amongst health- and environmentally conscious consumers – creating the perfect niche for innovative products that pave the way for sustainable consumption.

Assessing the risks posed by chemicals

The current approach for assessing the risk of chemicals causing harm to health is based on two factors: the first is the hazard potential of a substance, which indicates how toxic it is, what toxic effects it causes and at what concentrations these effects are observed. The second factor is the substance’s potential for exposure, which shows what quantities of the chemical are transferred from the packaging to the packaged food, and how much of this food is ultimately consumed by humans.

New challenges

Previously, it was generally assumed that chemical risks could easily be controlled as long as human exposure to certain potentially harmful substances did not exceed related tolerable levels. However, new scientific findings are now increasingly calling this general belief that “the dose makes the poison” into question with regard to chronic exposure to certain chemicals. More specifically, endocrine disruptors are chemicals that can trigger harmful effects even at low doses, although these effects may not be apparent at higher concentrations. The relationship between dose and effect is

therefore not monotonic for hormonally active agents. This has long been common knowledge in the field of endocrinology. However, the fact that this principle also applies to some synthetic chemicals is a relatively recent discovery and has not yet been taken into account when assessing the chemical risks of food packaging.

Ever since the thalidomide scandal in the 1960s, the prenatal development phase has been known to be a highly sensitive time in terms of chemical exposure. It is an established fact that chemical compounds can pass through the placenta and can have harmful impacts on the developing foetus even in the tiniest amounts. Aside from drugs, alcohol and tobacco smoke, this applies to industrial chemicals too. As yet, however, there have been no systematic records of the effects on foetal development for many of the substances present in food packaging.

The term “mixture toxicity” refers to the combination effects of substances which, taken individually, are below the threshold at which they could have an impact. In cocktail form, however, they are capable of triggering an effect, both during prenatal development and at later stages of life. More than 15,000 different chemical substances are found in food packaging and humans are exposed to many of them on a daily basis through food. There is a vast number of possible combinations of these substances which cannot be managed using current approaches. Avoiding substances which are already known to be dangerous would therefore seem to be a logical first step.



Dr. sc. nat. ETH Jane Muncke,
Food Packaging Forum Foundation, Zurich

2,5% to 65%

Development of the still and sparkling wine packaging market - from 2.5% to 65%



Warehouse

Construction of a covered warehouse - 9180 sqm



Production capacity

Enhancement - from 590 tons to 820 tons of glass per day



Cost reduction

Reduction of unit costs per melted glass by 32%



Ukrainian market

Increasing the Ukrainian market share of glass producers - from 22% to 32%



Product range enlarging

Product range enlarging - from 107 to 425 articles



Packaging

Installing of the automatic packaging lines at all production areas



Cullet proportion

Increasing within the coloured glass production - from 42% to 60%



Food safety standard

Obtaining the Food Safety System Certification FSSC 22000

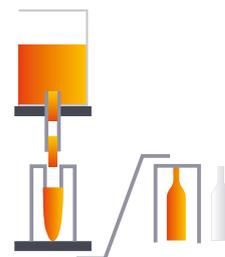


Export sales

Expanding of the export sales share - from 5% to 30%

Annual production

Annual production increasing - from 233 million to 590 million of bottles



New technology

Implementation of new production technologies - triple gob machine, narrow neck press and blow process, press and blow process



olive feuille-morte cuvée

New colours

Olive, feuille-morte and cuvée extend the range of glass colours



CELEBRATING A DECADE

Vetropack Gostomel marks its tenth anniversary

JSC Vetropack Gostomel joined Vetropack Group in 2006. A lot has changed since then – here is a brief look back over the last ten years.

The year 2006 was a milestone in the history of the glassworks in Gostomel, as it took a major step towards securing its future as a member of a pan-European corporate group specialising in producing glass packaging for the food and drinks industry.

Environmentally friendly glass production in Gostomel

Glass is durable, impermeable, hygienic and natural, which is why there is still nothing that can beat it as a packaging material. Yet it also offers another important characteristic: it can be recycled. Each year, the Ukrainian glassworks increases the amount of cullets it uses in its glass production, thus saving both energy and resources. Cullet makes up 61 per cent of amber glass and 31 per cent of flint glass. The glass specialists produce 380 tonnes of green glass, 220 tonnes of amber glass and 220 tonnes of flint glass per day. The green glass furnace commissioned in 2007 is the largest in Vetropack Group and boasts a daily melting capacity of 380 tonnes.

Glass production requires high temperatures in the range of 1,600 degrees Celsius, which means it involves high amounts of energy too. Thinking and acting in an environmentally compatible way is therefore an important issue for Vetropack and this is reflected in its investments.

Narrow neck press and blow technology was launched at Vetropack's Ukrainian plant in 2010. This manufacturing method makes it possible to produce glass containers which are 30 per cent lighter and have thinner walls, without losing any of their stability or their outstanding qualities. The following year saw the introduction of a triple-gob machine, which can be used to mould 36 glass containers at once.

Looking ahead

In spite of the financial crisis, the politically unstable situation and the military clashes going on in Ukraine, the Kiev-based company holds a 32 per cent market share. It employs around 650 people, who produce some two million glass containers per day – corresponding to roughly 18 per cent of Vetropack Group's overall production.

As previously mentioned, great progress is being made in Ukraine in terms of both recycling and cullet processing. And with good reason, since every 10 per cent of used glass recycled means a 3 per cent saving in energy consumption and a 7 per cent reduction in CO₂ emissions. One million recycled items of glass packaging saves 250 tonnes of quartz sand, which, apart from used glass, is the main raw material that goes into manufacturing glass containers. This is a major opportunity to preserve natural raw materials for future generations.



RICH IN TRADITION

Red with a sparkle

Novy Svet, a well-known sparkling wine, which previously produced at the Crimean Peninsula, has appeared in a brand new look, featuring olive-coloured bottles made by the glass specialists at Vetropack Gostomel.

One thing that is distinctly noticeable about Novy Svet sparkling wine right from the very first sip is its subtle combination of blackcurrant, prunes and violet aromas. This sparkling ruby-red wine is based on a mixture of Cabernet Sauvignon, Saperavi and Merlot grape varieties and comes encased in an elegant, olive-coloured standard bottle from Vetropack's Ukrainian plant. The 0.75 litre bottle is the perfect embodiment of the rich tradition of the Novy Svet winery. In spite of the fact that the bottling of champagne has recently launched at the facilities of Kharkiv plant of sparkling wines in Ukraine, the composition of manufacture and the basic raw material has not lost its original approach.

A TOUCH OF SPICE

A showstopper in glass

Croatia's biggest spice producer, Šafram, packages its spices in glass containers made by Vetropack Straža.

In Croatia, the name of the family-run business Šafram is synonymous with its delicious red powdered paprika, which is available in both sweet and hot varieties. Yet the company, which is built on a tradition dating back to 1991, also includes other spice blends in its product range, along with dried fruit and vegetables. Recently, Šafram's popular spices have started to be sold in 0.12 litre glass jars from Vetropack's Croatian plant. These transparent flint glass containers come with a simple closure, with either a shaker feature or a spice mill. The technical challenge in developing these jars was to design the mouth so that the mill and the container would form a unit and would not suddenly break apart when the spice is being ground.



ENERGY DRINKS

Healthy products in healthy packaging

Vetropack Austria manufactures glass bottles for Kloster Kitchen's ginger-based drink IngwerTRINK and for the fruit juices and smoothies produced by SanLucar. These refreshing beverages are packaged in healthy containers that preserve their exquisite flavour and valuable ingredients.

Ginger is used both as a spice and for its medicinal properties, adding flavour to curries, for example, or helping to ward off colds. Ginger lovers and curious types can now

also try it in the form of an invigorating drink: IngwerTRINK is inspired by an old monastic recipe and is made by Kloster Kitchen Öko Fairtrade GmbH, which is based in



Cudrefin, Switzerland. The bottle for this liquid energy-booster is produced by Vetropack Austria. It is a 0.25 litre Bordeaux bottle in green from the standard range. The colour of the glass combined with an eye-catching silk screen print by the company Print-glass gives this drink, which contains pieces of fresh ginger and agave syrup, a subtle and harmonious look, rounded off by a screw cap with a silver lid.

The fruit juices and smoothies made by SanLucar "Fruit to go" GmbH, which is based in the Lower Austrian town of Ebreichsdorf, also offer a fruity, refreshing boost. The 0.25 and 0.65 litre flint glass bottles used for these beverages

– and also produced by Vetropack Austria – have a distinctive cylindrical body and are topped off with a handy twist-off cap. The bottles' elegant label and clear view of the bright-coloured liquid inside are designed to make people want to try their high-quality contents. Being made of glass, they are also perfect for preserving the vitamins, flavours and colours of these vitamin-rich fruit- and vegetable-based drinks. SanLucar is an international fruit and vegetable company with headquarters in Valencia, Spain, and subsidiaries in Germany and Austria.

LIMITED EDITION

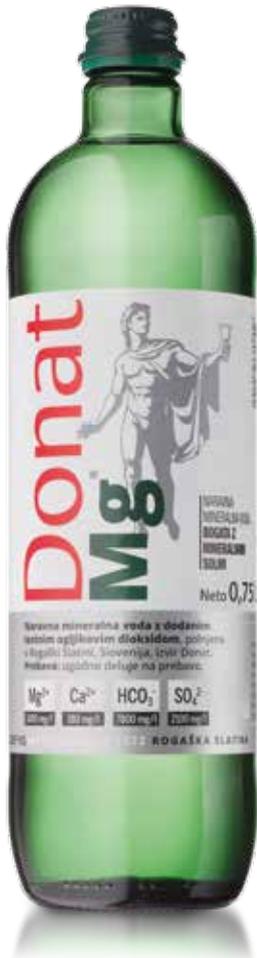
Double-packaged

In late 2015, the Pilsner Urquell Brewery teamed up with a Czech designer to create special gift packaging for its Pilsner Urquell beer. Vetropack Moravia Glass produces the green glass bottles used for this.

Gift packaging is very popular and adds extra value to a product. Pilsner Urquell took advantage of this in late 2015 by launching special beer packaging which offers its hop-based contents double protection.

The 1 litre green glass bottles with a swingstopper are made at Vetropack's Czech plant in Kyjov. The limited edition model was developed by the well-known glass designer Rony Plesl and its design ties in with the classic 0.5 litre Pilsner beer glasses, which also bear Plesl's hallmark. What sets this green bottle apart from other lagers is its distinctive waist section. Engraved "Pilsner Urquell" lettering stands out on one side, while the lower part of the body is embellished with rounded contours. The overall impression of premium quality is accentuated by the cylindrical gift box, which features a picture of the bottle inside.





RICH IN MAGNESIUM

Shrouded in legend

Legend has it that Pegasus, the winged horse from Greek mythology, had a hand in making Donat Mg mineral water spring up from the earth for the first time. The green glass bottles used for this magnesium-rich mineral water are produced by the Vetropack plant in Croatia.

Once upon a time, Pegasus flew over Slovenia and was so fascinated by the landscape below that he descended for a closer look, touched the ground and caused the layers in the surface of the earth to move, creating the spring for the beneficial, magnesium-rich mineral water known as Donat Mg.

In 2013, the design agency PointBleu from the Spanish city of Barcelona was commissioned to reposition the Donat Mg brand. The aim was to give the container a look reminiscent of a medicine bottle in order to differentiate it more clearly from the traditional conventional concept of a mineral water bottle. The project proved a success and Vetropack Straža in Hum na Sutli started producing the new green glass bottles for this legendary water in 2016. The body of the 0.75 litre bottle boasts a distinctively simple, classic design with a short neck, finished off with a screw cap.

A STRIKING SPIRIT

Lime and mint

A flint glass bottle made by Vetropack Gostomel shows off the bright green Villa Bianca liqueur to excellent effect. This aromatic, fruity spirit is a new addition to the existing range of products on offer.

It's all in the mix, or so they say, and nothing demonstrates this better than the Villa Bianca liqueur from the Ukrainian company Obolon. This alcoholic drink contains a mixture of tangy and aromatic herbs, fruit juice and sugar syrup and gets its refreshing green colour from its combination of lime and mint flavours.

Vetropack Gostomel makes the 0.5 litre flint glass bottle used for this liqueur, which has an elongated body and neck and screw cap closure system giving it a simple, classically elegant look. This sweet delicacy with a hint of fruit brings a breath of fresh air to the Ukrainian liqueur market and adds a little extra something to cocktails or meals.





SMALL BUT PERFECTLY FORMED

An ideal accompaniment for pizza

The Ukrainian wine market is welcoming a new addition – a fine wine in a small but perfectly formed package that tastes great with pizza. This Pizzavino is produced by Kotnar and comes in 0.375 litre bottles made by Vetropack Gostomel.

Pizza is one of many people's favourite meals and Pizzavino wine is the perfect match for this Italian dish. Whether you prefer your wines red or white is a matter of taste, but Pizzavino is available in both varieties: as a dry and semi-dry Traminer wine with a sweet, tea rose aroma or as a dry and semi-dry Merlot with a fruity, redcurrant flavour.

The 0.375 litre bottles, which are made of transparent flint glass or olive-coloured glass, are produced at Vetropack's Ukrainian plant in Gostomel. Their light and compact design makes them ideal for a day out in the countryside or a pleasant picnic by the water. And you don't even need to remember to take a bottle opener with you, as these bottles come with a screw cap.

DELICACY IN CUVÉE

White wine from Italy

The family-owned company Sartarelli bottles its white wines in cuvée-coloured glass bottles from Vetropack Italia. The grapes for these wines are grown in the winery's oldest vineyards.

The "Vinicola Sartarelli" estate has long made environmentally friendly cultivation a high priority, in order to protect both its grounds and the landscape. The vines grow at 350 metres above sea level and cover an area of more than 55 hectares. The glass bottles in the "cuvée" colour for white wines are produced by Vetropack Italia. They are classic Renana bottles which originated in Alsace. The glass specialists have further enhanced the elegant, minimalistic design with an engraved "S" on the shoulder.

The wine comes in 0.75 litre bottles and in three different versions: Tralvio is slightly sweet, Classico is characterised by a hint of bitterness reminiscent of almonds in the finish, while the stunning Balciana has the fresh aroma of citrus fruits.



THE CALL OF THE MOUNTAINS

Modern Swiss design

The new packaging design for the refreshing Rivella drinks is inspired by both the long-standing tradition of the brand and a reinterpretation of modern Switzerland. The 0.33 litre glass bottles are produced specifically for the catering industry.

As spring gets underway, the Swiss drinks brand Rivella is getting a whole new look. Unlike the previous version with curved grooves, the new Rivella bottle features distinctive diagonal lines. The criss-cross pattern created by these lines symbolises the Swiss mountains and this theme is picked up again on the label. To ensure that the bottle and label form one harmonious unit, the label is placed on the bottle with great precision during the production process. The new containers, which are finished off with a crown cork, have the same 0.33 litre capacity as their predecessors. Internationally renowned designer Yves Béhar from western Switzerland was tasked with coming up with this completely new image for the brand.

The "Rivella Red" and "Rivella Blue" beverages, the mainstays of the Rivella brand, are packaged in amber glass bottles. The "Rivella Green" variety, which was sold as a limited edition last year in green glass bottles, has now been renamed "Rivella Green Tea" and comes in flint glass bottles. The glass bottles for all three flavours are produced exclusively for the catering industry.



ABBEY BEER

Brewing in the traditional way

The brewery at Fischingen Abbey has been producing its own beer for about two years. The green and amber glass bottles for it are made at the Vetropack plants in Croatia, Austria and Switzerland.

The small brewery at Fischingen Abbey in the Swiss canton of Thurgau produces high-quality gourmet beers under the name PILGRIM, and the sales make a significant contribution to the maintenance of the abbey buildings.

The Craft Beer and Abbey Beer are bottled in Vetropack bottles from the glassworks in Hum na Sutli, Pöchlarn and St-Prex. The former is available in either an amber 0.75 litre long neck bottle or in a 0.33 litre Gambrinus-style bottle. Both have crown corks. The Abbey Beer – also known as "Bière d'Abbaye" or "Bière de Trappiste" – comes in 0.75 and 0.37 litre gleaming green sparkling wine bottles. Because of the high alcohol content of 11.5 per cent, the beer keeps well. Presenting the beers in sparkling wine bottles enhances both the content and the appearance.

In addition to these two beers, the abbey brewery also produces seasonal beers for each different season, which like all the beers are brewed to an ancient recipe in open vats. The tradition of open fermentation is now only to be found in a few, mainly small, breweries.



NATURALLY CLOUDY

Legendary beer

For its new product range, the Swiss Adler brewery in Schwanden, in the canton of Glarus, is drawing on the world of legends. "Vrenelisgärtli" is a naturally cloudy wheat beer with a fruity flavour. The amber glass bottles are made at the Vetropack glassworks in Kremsmünster.

Alpine hikers are familiar with the Vrenelisgärtli ("Verena's Little Garden"): it's a striking mountain peak in the Glarus mountains. According to legend, little Verena was once snowed in there. The snow was so deep that the young girl could not escape. The new product range from Adler Bräu, bearing the label "Saagehafts usum Glarnerland" ("The stuff of legends, made in Glarus"), draws on this story.

Vetropack Austria makes the smart amber glass bottles, which have a crown cork mouth. On the label, you can see Verena, sleeping in her garden. The bottle contains 0.29 litres of the naturally cloudy hop-based drink, which is a Belgian Witbier (wheat beer). The top-fermenting yeast gives it its fruity flavour, which is also enhanced with coriander seeds, dried Curaçao bitter orange peel and oats.

**REFRESHING**

A taste of childhood

Vetropack's Italian plant in Trezzano sul Naviglio produces flint glass bottles for Baladin soft drinks, including the orange-coloured Baladin Ginger.

Despite what its name suggests, Baladin Ginger does not actually contain any ginger. The non-alcoholic drink is made of water, cane sugar, lemon juice, carbon dioxide and an infusion of herbs, bitter and sweet orange zest, spices and vanilla. This mixture is perfect for refreshing the palate – either on its own, garnished with orange slices or mixed with spirits.

The 0.25 litre flint glass bottles produced by Vetropack Italia for this beverage feature an engraved logo and "Baladin" lettering on the body of the bottle and a crown cork closure.

The idea behind Baladin soft drinks was to evoke the tastes and smells of an Italian childhood. In addition to the Ginger version, there are also Cedrata (lemon), Spuma Nera (orange and myrtle), Melazen (apple and ginger) and Cola varieties available.



SCIENTIFIC

The effect of light on the quality of wine

A research project conducted by the University of Zagreb's Laboratory for Technology and Analysis of Wine shows that the choice of bottle colour plays a crucial role in maintaining the quality of wine during storage. Wine producers should therefore think carefully about what kind of bottles to use for their delicious drinks, particularly when it comes to bottling white wines. This project was carried out in collaboration with Vetropack Straža.

As soon as wine is on the market, its quality depends on how it is stored. Light affects the development of the wine's flavour and exposure to strong light can alter its original aroma. This phenomenon, which experts call "goût de lumière" or "lightstrike", creates a taste that is reminiscent of cauliflower.

Traditionally, white wine is contained in transparent flint glass bottles or light-coloured ones, while red wine tends to be found in green or dark-coloured bottles. This system is familiar to virtually all consumers, but is it really the right way to guarantee the quality of wine?

Joining forces with the University of Zagreb's Faculty of Food Technology and Biotechnology, Vetropack's Croatian plant in Hum na Sutli conducted a study to investigate this question. The aim of the project was to examine the influence of transparent, olive-coloured and cuvée-coloured bottles in terms of exposure to light and to find out what impact this has on the quality of wine. Both white and red wines were put in bottles of these three colours, which were then closed with a screw cap before being left for a year either in intense light or in darkness. Quality checks were carried out every six months, with the scientists analysing

changes in the polyphenol antioxidants (healthy substances found in wine) as well as the wine's colour and aroma. Taste tests were carried out to assess the sensory elements.

Sensitive white wine

The research project revealed that, when stored under exposure to strong light, bottle colour had a significant influence on the quality of the wine. Whereas cuvée-coloured bottles provide more or less the same level of protection as darker bottle colours, olive-coloured and – in particular – transparent versions did not prove as effective at shielding white wine from the negative impact of light.

Red wine reacts differently

The results for red wine, however, presented a different picture: in spite of the exposure to light, red wine turned out to be protected just as effectively in both cuvée- and olive-coloured bottles as it was in the control containers stored in the dark.

In conclusion, the quality of white and red wines can change significantly depending on the light conditions and the colour of bottle in which they are stored. Or in other words, wine in light-coloured bottles should either be enjoyed straight away or kept exclusively in the dark.





TRADE FAIRS

Showcasing glass

Vetropack has been present at three important trade fairs: at BrauBeviale in Nuremberg, Germany, the Group displayed glass packaging from all of its subsidiaries, while SIMEI in Milan marked the first appearance by Vetropack Italia as a Vetropack company and Agrovina in Martigny, western Switzerland, provided an opportunity to present the range of products offered by Vetropack Switzerland.



At SIMEI in Italy

Vetropack had a stand at the SIMEI trade fair in Milan, Italy, for the first time. Vetropack Italia, the latest addition to the Group, presented its own products there as well as glass packaging produced by its sister companies. SIMEI is an international oenological and bottling equipment exhibition and a total of 700 exhibitors from 27 different countries gathered in the four exhibition halls for this year's event. The Vetropack stand attracted numerous customers and interested visitors and provided information on the diverse range of products offered by Vetropack Italia.

At BrauBeviale in Germany

Three intensive days of trade fair activities, over 37,000 visitors and almost 1,100 exhibitors – those were the final figures from BrauBeviale 2015, which took place in Nuremberg last November. Vetropack Group always has a large stand at BrauBeviale, presenting glass packaging from all its companies and showcasing the full range of Vetropack products.

Speciality beers that are bursting with character belong in distinctive bottles which stand out from the crowd and offer scope for individual branding. This major trend for creative beer culture was reflected in Vetropack's own display at BrauBeviale. What makes glass great is the design possibilities it offers – and there are virtually no limits to this versatility. The essential thing is that shape, colour, finish and function all come together to form a harmonious whole and that was clearly demonstrated to the trade fair visitors. In addition, BrauBeviale provided an opportunity to present the brand new "Our Service plus+ Features" brochure, which neatly encapsulates the wide range of services offered by Vetropack. These include comprehensive advice, from the product idea to the finished product itself, as well as life cycle assessments and optimised packaging solutions designed to save transport costs when delivering to customers.

At Agrovina in Switzerland

In January 2016, Vetropack Switzerland took part in Agrovina, the biennial trade fair for specialists in viticulture and oenology. The focus of Vetropack's appearance at this year's event was on its "Service plus+" offering, although visitors also had the chance to give their opinion on various sample bottle designs, including bottles made of lightweight glass or featuring special finishes such as silk screen printing. The real showstopper was the giant sample shelf, on which the full range of Vetropack products available in Switzerland was prominently placed.



WORTH A LOOK

Glass – as far as the eye can see

The editorial team has been on the hunt for glass museums worth visiting. Here are some of the ones we found in the countries where Vetropack operates. Join us on a voyage of discovery!

Museums were originally regarded as shrines to the muses, the patron goddesses of the arts. Nowadays they are no longer considered sacred in this sense, yet museums are still important places for presenting history in a visual way and shedding light on the present.

A glass emblem

As you approach the Willisau Bottle Museum in Switzerland, one thing immediately catches your eye: its striking emblem – a 7.5-metre-tall green glass bottle. Since May 2006, this museum has been inviting visitors to come and see its collection of more than 35,000 bottles, which range from the tiniest of vials used for storing medicines to giant wine bottles. It offers everything a collector could possibly desire and is sure to fill glass enthusiasts with delight. The museum was extended last September and celebrated this in style. Its curator, Sepp Stadelmann, is a well-known figure far beyond the borders of the Swiss village where it is based.

Rooted in antiquity

Switzerland's southern neighbour, Italy, is home to the Museo dell'Arte Vetraria Altarese, a glassmaking museum. As well as displaying glass objects spanning the centuries from 1650 to the present day, this museum features tools used for the craft of glassmaking. It also has a special area where glass is still hand-blown according to old, traditional practices. The exhibition section is housed in the Villa Rosa, an art nouveau building which was once a private residence. The glassmaking culture in Altare, where



the museum is located, dates back to ancient times. Aside from admiring the objects on display, visitors can find out about the history of glassmaking in the local region.

Passionate about glass

The Museum of Ancient Glass in Zadar, Croatia, also has its own glassblowing workshop, as well as a unique collection of some 2,000 glass objects from the ancient world. The displays are divided by theme, covering topics such as techniques for creating decorative glass, glass trading routes, the use of glass in cosmetics, pharmacy and medicine, how glass is used in everyday life, and glass jewellery. The focal feature in the largest exhibition hall is a necropolis, set out as a place for discovering ancient glass. Particular rarities include glass urns and other items which once played a prominent role in funerals. The museum's director, Ivo Fadić, is passionate about glass and his love of this material is clear to see at every turn. Being an archaeologist, he used to work in the ancient glass section of the Archaeological Museum in the city of Zadar – which, according to British film director Alfred Hitchcock, also offers the most beautiful sunsets in the world.

Artistic flair

Glass is such a familiar part of our everyday lives that we often simply do not notice its distinctive qualities anymore.



"The Glass Castle" in Lower Austria has made it its mission to sculpt and present this precious material in an artistic way. In the rich in detail designed museum, the visitors can experience the world of production and creative processing of glass in an exciting way. The slogan is "seeing, feeling and wondering". A large part of the museum is dedicated to glassblowing. The art of blowing glass into shapes was first practiced by the Romans and underwent a revival in Venice centuries later. Although the Venetians were keen to keep the secrets of glassblowing to themselves, over the course of time the craft spread across the Alps and into other regions. The facade of the museum shines due to about three million glass mosaic stones.

An enchanting experience

The Museum of Glass and Jewellery in Jablonec nad Nisou was established more than 110 years ago. The main building, designed in an art nouveau style, is situated in the historical and cultural heart of the town. In the museum's "Magic Garden", visitors can explore the world of Bohemian glass over seven centuries. And as its name suggests, they are sure to fall under the spell of the glass objects on display. The exhibits are also supplemented and enriched with extracts from works by poets. The museum's jewellery section features pieces of jewellery made from glass and other materials, as well as shedding light on the history of jewellery making. The glass industry has played an important role in the local region since the 17th century and jewellery production became established in this industrial town a century later.

A palace of glass

Lednické Rovne is home to the Slovak Glass Museum. A glass factory was founded there in 1892 and the museum is housed in the Renaissance manor belonging to the family of the factory's former owners. The exhibition focuses on the history of glass manufacturing in Slovakia, with an extremely diverse range of items dating as far back as the 17th century on display for visitors to admire. Modern glass production methods are presented using products from individual Slovakian glassworks. The region around Lednické Rovne is known for its long tradition of glassmaking. Close to it is the Slovakian Vetropack plant situated.



Traditional meets modern

The Glass Museum in Lviv is Ukraine's first and only museum of glass. It was founded by Ukrainian artist Andriy Bokotey when the International Blown Glass Symposium was held in the city in 1992. Its aim was to exhibit objects created during the symposium and this forms the basis for the largest section of the museum, which has over 300 items on display. Two further areas focus on historical and modern concepts of glass. The historical part features bottles, amphorae, rings, pieces of mosaics from Kiev, the western Ukrainian city of Terebovlia and Galicia and glass dating back to the 16th and 17th centuries from the collection of the well-known Ukrainian restorer Petro Linynsky. The exhibitions on modern glass are very

diverse, but one thing they all have in common is that they approach this fascinating material from new perspectives and provide food for thought.



Contact Addresses Sales

Switzerland

Phone +41 44 863 34 34
Fax +41 44 863 34 45
marketing.ch@vetropack.com

Austria

Phone +43 2757 7541
Fax +43 2757 7541 202
marketing.at@vetropack.com

Czech Republic

Phone +420 518 733 111
Fax +420 518 612 519
marketing.cz@vetropack.com

Slovakia

Phone +421 32 6557 111
Fax +421 32 6589 901
marketing.sk@vetropack.com

**Croatia, Slovenia,
Bosnia Herzegovina,
Serbia, Montenegro,
Macedonia**

Phone +385 49 326 326
Fax +385 49 341 154
prodaja@vetropack.com

Ukraine

Phone +38 044 392 41 00
Fax +380 4597 311 35
sales.ua@vetropack.com

Italy

Phone +39 02 458771
Fax +39 02 4587714
sales.it@vetropack.com

**Other West European
countries**

Phone +43 7583 5361
Fax +43 7583 5361 225
export.west-europe@vetropack.com

**Other East European
countries**

Phone +420 518 733 341
Fax +420 518 612 519
export.cz@vetropack.com