PREVIEW OF TECHNICAL INNOVATIONS
ENOMAQ-OLEOMAQ and TECNOVID-OLEOTEC 2009

From February 10 to 13, the Zaragoza Trade Fair Center will house ENOMAQ-OLEOMAQ and TECNOVID-OLEOTEC, the most highly anticipated business events for the wine and oil industries, which are now established as the world's leading trade fairs in their sectors.

Many participating companies will be attending the 2009 edition with major, innovative product launches across all sectors represented at the fair. As a preview of what to expect, we will describe some of the most significant Technical Innovations presented by exhibitors.

FERIA DE ZARAGOZA

ENOMAQ 2009 tecnovid 2009 OLEOMAQ 2009 Oleotec 2009

The latest in equipment, techniques and machinery for the wine, oil and general drinks sectors will be showcased at the 17th edition of ENOMAQ, the International Show of Winery and Bottling Equipment and Machinery, and at the 2nd edition of OLEOMAQ, the Oil Mill Machinery Equipment and Packing Show, being held at the Zaragoza Trade Fair Center from February 10 to 13. It has now become traditional to hold TECNOVID, the 6th edition of the International Vine-Growing Techniques and Equipment Show and OLEOTEC, the 2nd edition of the Olive Growing Equipment and Techniques Show, simultaneously. These fairs also share innovative content and proposals for machinery and techniques for wine and olive oil production.

Innovation highlights at ENOMAQ–OLEOMAQ 2009

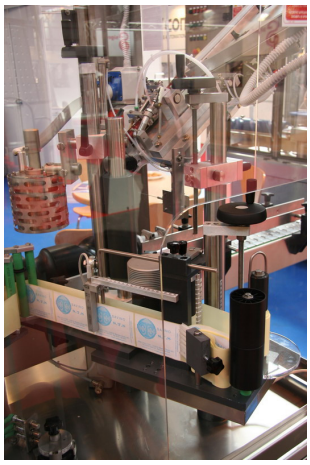
The entire wine-making process has been revolutionized by the application of electronic technology to machinery. The new trends in wine treatment machinery, as well in analytical and laboratory equipment, have given rise to the need for easy to handle, portable and functional equipment that offers quick results and is well adapted for use in wineries and companies of all sizes.

The **bottling machinery and auxiliary equipment** sector will present a revolutionary bottle filler, featuring an electro-pneumatic management system. The principal advantage of this system is electronic filling control provided by state-of-the-art PLC technology and the proper software. This is accomplished by substituting automatic cams (used in conventional bottling machines) for electro-pneumatic valves, which act directly on each of the nozzles, enabling individual control in order to modify any of the bottling process stages at will. In addition, the bottle filler can be attached to the rinsing machine and to one or more capping machines to form a one-piece straight or angled module. This feature permits enormous flexibility and versatility in the configuration, making it possible to fill a wide variety of different products.

The sector will also present a new machine addressed specifically to the oil sector; an olive oil pump fitted with an automatic priming system. The system features a mixed flow centrifugal pump with a helical rotor for decanting liquid-suspended solids that allows the automation of the priming process. This is an application that is suitable for different types of solids and which does not deteriorate them. It does not require any actions on the part of operators, since the automated system controls the level of liquid in the vacuum tube and starts or stops the operation of the priming system.

A new innovative contribution worth mentioning is a unique screw on cap that allows controlled permeability through a membrane, in order to allow in-bottle micro-oxygenation. This innovative capping system performs like a high quality cork, allowing wine to evolve properly and without giving rise to the usual reduction problems..

Attractive new items are also presented in **labeling, handling and packing**, such as stick-on labels for P.E.T. containers that are 100% recyclable. The labels are manufactured in propylene and contain a special adhesive that allows them to form a whole with the PET container, facilitating the recycling process and eliminating the need to separate the two components. This results in lower costs and increased energy savings, while the recycled material can be used to produce packages suitable for foodstuffs. In the same field, a state-of-the-art color printer will be launched at his edition, which is particularly aimed at the wine and oil sectors. The printer adapts on-line to an automatic applicator for printing labels on cylindrical and square products. This version makes it possible to print and apply the product label at the same time, reducing the total amount of time involved by 50%, compared to carrying out the two processes separately.



In the **tanks and containers** sector, a new French oak cask will be shown that introduces an innovative manufacturing process. It is doubled toasted at low temperatures, in order to obtain three types of specialized casks: for white wine, red wine and potent and well structured wines. These casks preserve the true flavor of the grape, fully respecting the original aromas and shortening the aging process, thanks to the rapid integration and blending of the wood. In auxiliary winery machinery, one of the highlights is a third generation cask washer that requires no physical effort on the part of the user. It features a device that lifts the cask to the washing position and its design facilitates the introduction of the rod into the cask. It also has a series of interchangeable and versatile accessories which serve to considerably extend the service life of the rod, resulting in substantial cost savings in materials.

There are also noteworthy new products in **wine treatment machinery and equipment.** For example, a fermentation sensor that continuously measures the transformation of sugar into alcohol during the fermentation process, sending the information obtained to a computer that interprets the data in graph form and displays a real-time consumption curve. In this manner, the oenologist is able to monitor the fermentation process with greater precision than that afforded by traditional periodic density sampling. The software supplied with the sensor also allows programmable alerts, refrigeration control, pumping up, micro-oxygenation, etc.

This sector will also be presenting an innovative system that is designed to protect the shelf life of bottled wine by completely eliminating the dissolved oxygen in the bottle up to 95-97%, prior to the bottling process. This increases the average life of the wine and helps preserve the aromatic profile over a longer period of time. This is a completely electronic system, easy to use and controlled by a personal computer, which also comes with a database to control traceability and other functions.

An innovative development in wine filtering will also be featured at this edition of ENOMAQ. It consists of a new filter made of cellulose fiber, obtained from renewable and organic raw materials that may subsequently be reused as compost. The high degree of purity ensures that the wine being filtered is not altered, while its composition and structure reduces dripping up to 95%. Compared to conventional deep-well filter plates, these filters reduce the volume of pre-rinsing and recirculation up to 50%, with the corresponding savings in resources.

The wine treatment sector will also present a portable decanter for sparkling wines, which can be used by both small wineries and large producers. This is an extremely easy to use automatic system for decanting the lees in the bottle. It operates on the basis of rocking a single tippable container by means of different programmable lifting and rotating movements. These movements change the position of the bottle from 0º to 90º with respect to the vertical axis and with a 360º rotation of the bottle container with respect to the horizontal axis. It is a system that streamlines the process, saving time and reducing labor costs.

The sector dedicated to **oenological products and laboratory materials** is also presenting many new products. One of the highlights is an avant-garde density meter used to determine the degree of alcohol. Its most significant new feature consists of a video micro camera to facilitate visual detection of bubbles in the sample and, if it be the case, to eliminate them. This helps prevent measurement errors that can be caused by undetected bubbles when using traditional measuring systems. Another item that will be presented is a functional system for simple and instantaneous analysis. In just two minutes, without using reagents, and with a few drops of the sample, it provides an analysis of the main components of the must, the must in fermentation and the finished wine. Its small size, high accuracy and ease of use make this device an attractive alternative, for economy and speed, to traditional methods of analysis.

Along similar lines, a portable oximeter will be presented for measuring dissolved oxygen in wines. It uses a technology that eliminates contact between the sample being analyzed and atmospheric oxygen. With autonomy of over 350 hours, this device offers rapid and precise measurements, which can be taken in the wine storage tank by connecting the tank with the measurement camera and allowing the sample to circulate by gravity, or directly in the bottle.

Another interesting piece of equipment that will be showcased at the Fair is a rapid microbiological detection system that takes only 10 minutes to determine if the sample analyzed is free of mold and yeast, instead of the usual five or six days. This allows real-time quality control and taking immediate corrective measures. The system is based on a combination of membrane filter technique and bioluminescence generated by ATP (adenosine triphosphate), which permits extremely fast and precise detection of microorganisms. This solution is fully automatic and can be used throughout the drink production process, including the final product, raw materials and cleaning cycle water.

Also in the area of quality control, in this case for oil, a new analysis system will be launched at OLEOMAQ. This is a system that makes it possible to evaluate oil quality parameters throughout the production stages. It is based on a photometric system that specifically measures acidity, peroxides, polyphenols and K270 in a swift, safe and reliable manner. It stands out for its low cost and ease of use, making it a suitable tool for any type of oil producer.

Lastly, we should not forget to mention an innovative oenological product; a liquid used for optimum wine clarification and the reduction of unnecessary tannins. It is easy to use and represents a sound alternative for clarification. Based on special gelatins combined with high molecular weight collagen, it can be added directly to wine. In addition, it contains no casein or allergens.

Conditioning equipment, projects and the wine and olive growing auxiliary industry are featuring an increasing number of **IT applications** addressed to winery and general drinks management. For instance, a comprehensive ERP aimed at optimizing traceability management that uses the product specification sheet. On a single screen, this application is able to display a summary of the wine production and aging processes, facilitating full traceability control based on the product batch number. Along similar lines, it is worth pointing out an interesting and useful winery management solution. This is an application that consists of open architecture and modular software and hardware that can be adapted to wineries of all sizes. It monitors and controls temperature, fermentation, atmospheric conditions and machinery, as well as other processes, and can be controlled on-site or remotely.

A new management system dedicated to cask control will also be presented. It uses the bar code, in conjunction with labels and readers, to provide convenient management of all the casks in the winery, resulting in improved wine traceability. This system, with very little effort, provides immediate information on aspects such as the number of casks decanted, washed, or mounted and dismounted during a specific time period. At cask side, it is possible to monitor how long the wine has been aged, the type of casks used in its elaboration and to obtain all the information necessary for optimum management of the different processes. Lastly, it is important to mention a management solution that provides wine traceability from the vine to shipping, in this case, through PDA interactive RFID and WIFI technology and system-specific software.

In the field classified as the **wine-growing auxiliary industry**, one of the highlights is a new treatment plant that has the capacity to treat both wine and phytosanitary effluents. Up until now, it was necessary to have separate equipment for the two types of residues. Now, with this purifying plant, a single investment is sufficient to ensure that effluents do not have a negative impact on the ecosystem.

Grape and olive processing machinery will introduce a stalk stripping and crushing machine with an inert gas injection system (manual-automatic). This machine permits quality stalk stripping for white grapes in a neutral atmosphere, preventing grape oxidation and ensuring the quality of the must obtained and, therefore, that of the final bottled product. The machine consists of an elevated hopper to load the grapes, a lift conveyor to move the grapes to the stalk stripper, inertization and stalk stripping equipment, a crusher, pumping equipment, an electric control panel and an oximeter that automatically regulates the dosage of inert gas.

This sector will also be showcasing new and sophisticated press control systems. For example, a system that uses a must collection tray to measure the flow of strained must, transmitting the data obtained to the machine which, in accordance with the information received, automatically defines the straining and pressing cycles, along with all the other press parameters to be applied. This dramatically simplifies the use of the press and no longer requires the operator to make highly complex technical decisions.

Lastly, among the products presented, a high precision automatic grape harvest selection machine also stands out. This machine allows the operator to adjust the selection depending on the desired objective and the initial quality of the manually or mechanically stripped grape clusters. It is also possible to save only whole and healthy fruits or, on the other hand, to also save broken fruits or those with traces of stalks, as well as choosing to eliminate foreign bodies, plants and immature fruits, etc.

The most innovative machinery of TECNOVID and OLEOTEC 2009

Agricultural techniques for vine and olive growing continue to focus on modernization and to pursue quality, using progressively more multipurpose machinery and highly developed and environmentally friendly techniques. In view of the many companies attending the 2009 edition with new products, both fairs assure an abundance of technical innovations.

The large **machines** sector will be featuring modern tractors, designed especially for vineyards and fruit tree orchards. The vehicles offer high power and performance and special attention has been given to ensuring operator comfort on the job. This is true of a new **tractor** that incorporates a spacious and comfortable enclosed single cab with curved windows that is mounted on silencer blocks, protecting the operator and his surroundings from vibrations and engine noise. It also incorporates special roof-mounted anti-pollen filters to protect the operator's health and to reduce toxic environmental residues, as well as self-cleaning filters mounted on the doors which, together with a powerful ventilation system, ensure a constant supply of fresh air in the interior. The cabin height has been reduced to a minimum, minimizing damage to crops that is often produced when driving between lines.

The **toothed harrow disc** is an innovative machine for deep plowing (up to 200 mm) and for high speed jobs. This fast harrow is intended for work in vineyards and fruit orchards and has been designed with a reduced working width and a lighter weight, appropriate for tractors specialized in grapes and fruit. The discs are independent and equipped with rubber shock absorbers. The teeth facilitate penetration and help break up waste, providing optimum work results in a short time.

As expected, there will also be innovations in **harvesting machines**, such as a harvester equipped with a linear grape stripping system, integrated with a selection table that separates foreign bodies, such as leaves, shoots and stalks. This work method allows grapes to be delivered to the winery ready for fermentation, without having to pass through the stalk stripper beforehand.

An **electric degerminator** will also be introduced. It features cutting modules with state-of-the-art electric motors, powered by an alternator that can be connected directly to the power take-off of any tractor. This means that the degerminator operates with clean energy and, in addition, does not pollute the environment as there are no flexible hydraulic hoses or electrovalves with oil, as in conventional machines. Thanks to its modular design, it can be adapted to any type of vineyard. It is more economical and lighter weight than hydraulic machines and requires much less maintenance. The **electric power saw** is another innovative tool. Equipped with an autonomous lithium ion battery it offers advantages such as reduced weight, absence of vibrations, noise and pollution and high performance. An easy to use tool for high precision cutting.

A **shredder with a collecting bag kit** is also being launched at this edition. It is designed for vineyards and olive plantations for the purpose of allowing pruning remains to be used as biomass. In this manner, waste is collected through 2 feeders and pushed against a hammer rotor that eventually reduces it to a size suitable for depositing in the ground, or for loading onto wagons or into bags. Another attractive machine is the mechanical leaf stripper for grape vines. Its single reversible head allows the same head to strip both sides, making it much more economical than the traditional double-headed tool.

Lastly, in the **nursery** sector, it is important to highlight new developments such as a new vine stock. This is a plant designed to respond better to replanting and that has a strong resistance to wood-rotting fungi, because it has been inoculated with *Trichoderma atroviride*, specifically the strain I-1237. To ensure a better adaptation to the environment and improved survival in the battle against deep-rooted plants, the substratum has been enriched with Michorriza.

Unpotted olive seedlings are also new in this field. They use the Paper-Pot system, with a height of 8 cm and a diameter of 6 cm. In this system, the root ball is enclosed in biodegradable paper, which provides the same conditions with respect to peat and fertilizer as plastic pots, with the advantage of affording greater protection to the superficial plant roots. In this manner, planting can be carried out without causing any harm to the root ball and, consequently, reducing the percentage of losses in the field. Paper-Pot also eliminates waste management costs as there is no plastic to dispose of.

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OLEOMAQ the Oil Mill Machinery, Equipment and Packing Show and **OLEOTEC** Olive-Growing Equipment and Techniques Show
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