

MEURA NEWS

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Dear Readers,

In our last Newsletter we stressed the fundamental importance of the ideas of performance and controlling of operating costs in MEURA's different technical and technological innovations.

Maintaining the initial performance level throughout the service life of our equipment is the primary objective of our new product, the ILOBOX.

This software for the optimisation of the operation of our MEURA 2001 filters guarantees their users extract yields that always remain at least equal to the laboratory yield, an unequalled advantage that will continue to ensure the success of our mash filters. We are happy to explain the operating principles and the initial results to you in this Meuranews12.

You can also find out about a few of our latest projects throughout the world.

Finally, we would be happy to welcome you to our stand at Drinktec (Hall B2, Booth 439), where you can savour an excellent Belgian beer.

We wish you all pleasant reading and look forward to seeing you soon,



drinktec
Hall B2, Stand 439



Christian De Brackeleire
Chief Executive Officer

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The Castel group in Angola



The CERBAB brewhouse under construction

In 2002, after almost three decades of civil war, Angola's economy started to recover. As a consequence between 2003 and 2008 beer production in the country tripled! Today, this African country with a population of about 19 million citizens is producing about 5.3 million hectolitres of beer each year. The Castel group is the

absolute market leader in the country, with seven breweries: the EKA brewery in Dondo, the SOBA brewery in Lobito, the Nocal brewery in Luanda, the COBEJE brewery in Bom Jesus, the NOCEBO brewery in Huambo, the Cuca brewery in Luanda and the CERBAB brewery in Cabinda.

Castel in Angola

In 2005, Castel acquired the EKA and Nocal breweries from Heineken. One year later, Castel took over the NOCEBO brewery in Huambo. During the same period the Cuca brewery in Luanda was privatised, after having been managed by the Castel group since 1993. The seventh Angolan Castel brewery, the CERBAB brewery, is located in the Cabinda region, an enclave and province of Angola.

Castel & Meura in Angola

The first Meura 2001 Carbo+ mash filter installed for the Castel group in Angola was in **the Cuca brewery in Luanda**. This filter, supplied in 2002, was equipped with 50 chambers extendable to 60 chambers.

In 2006 an order was also placed to Meura for the complete revamping of this Cuca Brewery's brewhouse and the extension of the existing mash filter.

That year also, the Castel Group once again entrusted Meura with an order for a Meura 2001 Carbo+ mash filter, this time equipped with 41 chambers (extendable to 53), which was installed in **the Nocal brewery in Luanda**. Today, Meura is also supplying them with a CIP installation for their brewhouse as well as a Clarisaver.

Soon after the Castel Group purchased the brewery in Cabinda (**CERBAB Brewery**), a call for tender was issued for a new brewhouse. Thanks to its prior experience with projects in Angola and due to its brewhouse technology, Meura was entrusted with this new brewhouse. The order was signed on 16 February 2007 for a new milling line, a Mechamasher, adjunct Kettle and mash tun, a Meura 2001 Junior filter, a wort kettle, a whirlpool and a CIP station. The first brew took place on 19 August 2008 and the brewhouse is producing brews of 250 hl.

End of 2007, the Castel group decided also to invest in a complete new 2 million hectolitres per year brewery in Bom Jesus. This new brewery was called **the COBEJE brewery** and brews the Nocal beer. In this new project, Meura supplied a turnkey brewhouse (a Classicmill, a complete brewhouse including a Meura 2001 carbo+ mash filter equipped with 54 chambers, a yeast propagation system (Propax) and the automatization of the brewhouse). The brewery is now running perfectly and fulfils all Castel's requirements

Another successful Meura project was a new brewhouse for the **NOCEBO brewery** in Huambo, which took place during the same time period as the project in Cabinda. The order was signed on 21 February 2007. The brewhouse capacity as well as the technologies and equipment proposed were exactly the same as for the Cabinda project.



Conclusion

On the African continent the Castel group entrusted Meura with the orders of 14 Meura 2001 mash filters and 3 new brewhouses. We would like here to thank the Castel Group for their continued trust in Meura's technologies, and for our successful cooperation in Africa and particularly on the Angolan beer market.



Grupo Bavaria



Grupo Bavaria is the largest beverage conglomerate in Colombia. With its seven breweries it is part of the SABMiller group.

In 2007, the Aguila Brewery, located in Baranquilla, decided to increase the extract efficiency as well as the capacity of the brewery up to 3.5 million hectoliters of beer sold per year. The brewery's bottleneck was the brewhouse. The initial idea was to install a new brewhouse of 1200 hl/brew, 12 brews/day. For many years the Aguila Brewery had been working with Meura equipment. In fact in 1948, just after the Second World War, Meura supplied a copper brewhouse to the brewery. In 1982, Meura installed a new stainless steel mash tun and mash kettle. Although the original idea was to work with the lauter tun technology, the brewery's long positive relationship led it to invite Meura to tender as well.

Meura, intrigued by this exciting project, worked out an alternative plan that would integrate two Meura 2001 Carbo+ mash filters. After having analysed Meura's proposal, Grupo Bavaria decided to entrust the extension to Meura.

The previous operating installation consisted of three lauter tuns per 2 brew line limited to 14 brews per day, so three lauter tuns were dismantled and replaced by two mash filters capable of processing 12 to 14 brews per line.

The new malt milling line has been upgraded with a new Classicmill (CLM5), grist bin (20 tons) and Mechamasher (50t/h). The new rice milling line is composed of a Classicmill (CLM4), a grist bin (12 tons) and a Mechamasher (30t/h). In each brewline a Meura 2001 Carbo+ equipped with 62 chambers was installed, along with a wort pre-heater placed between the wort buffer tank and the wort kettle.

The first line was commissioned in September 2008 and the first brew came off the second line in January 2009.

The new brewhouse can now produce up to 24 brews a day, completely fulfilling Aguila Brewery's requirement of increased capacity and yield!

Moreover, Aguila noted a drastic reduction in water consumption compared to their previous installation, and the organoleptic results are better than expected!

We are very proud that we were able to meet this new challenge successfully, and we thank Grupo Bavaria for their long-lasting trust in our team of brewing specialists.



SINO BELGIUM BEER (SUZHOU) LTD



Mr Guy Depraetere, Area Sales Manager,
Mr Genart, Previous CEO and
Mr Johnny Shih, Vice Chairman of
Far Eastern Textile Ltd

For a few years now the giant Taiwanese group, the FAR EASTERN GROUP, one of the major worldwide PET resin and pre-form suppliers, has been trying to convince China, the biggest beer market in the world, to adopt PET bottles. Since none of the Chinese brewers was willing to be the first to enter this new era of beer bottles, the FAR EASTERN GROUP decided to become a brewer itself in China! To acquire brewing skills it entered into a joint venture with Belgium-based Brouwerij Martens. They named their new company Sino Belgium Beer (Suzhou) Ltd.

In 2007, convinced by MEURA technologies, they decided to opt for “the brewery of future” concept and order a **MEURABREW** of 200 HL/h at 20°P for a new brewery to be set up in Suzhou, China.

Based on the turnkey principle, the scope of the order includes supplying raw material reception, storage and treatment, a milling plant (with two MEURA CLM-3 Classicmills), and the complete **MEURABREW** of 200 HI/h at 20°P. The **MEURABREW** consists of a Mechamasher, three MEURA 2001 mash filters, a Clarisaver with Ecostripper, etc. Piping, supporting insulation, electricity, full automation, installation work, commissioning and so on were also part of the scope of supply.

The project was completed in close collaboration between MEURA and BOCCARD SHANGHAI (both subsidiaries of BOCCARD Enterprises). MEURA supplied all the key equipment from Belgium, such as the Classicmills, Mechamasher, Meura 2001 filters, Ecostripper, pumps, valves, instrumentation and automation based on Wonderware In-Touch. Engineering was also part of MEURA's order.

BOCCARD SHANGHAI supplied the raw material reception, storage and treatment, brewhouse vessels, clean steam generator, piping and complete plant installation under MEURA supervision. Project Management was done jointly by MEURA and BOCCARD SHANGHAI and by appointing two project Managers (one from MEURA and one from BOCCARD SHANGHAI) working in cooperation.

This integration of the local supply done in collaboration with another subsidiary of BOCCARD Enterprises made the project possible. Its success in China is due to imported key equipment and high quality Chinese equipment, which make it one of the most modern brewhouses in China and worldwide, in fact beyond state-of-the-art.

The brewery, in production since 2008, primarily produces beers for its partner Martens beer to sell in Eastern and Southern China and for clients such as Suntory and Asahi. All the advantages of the **MEURABREW** continuous brewing concept have been confirmed: high extract yield, low water consumption, high level of reduction of utilities consumption (steam, power, etc.), reduction of waste disposal, and limited space requirements leading to a lower investment in civil engineering works.

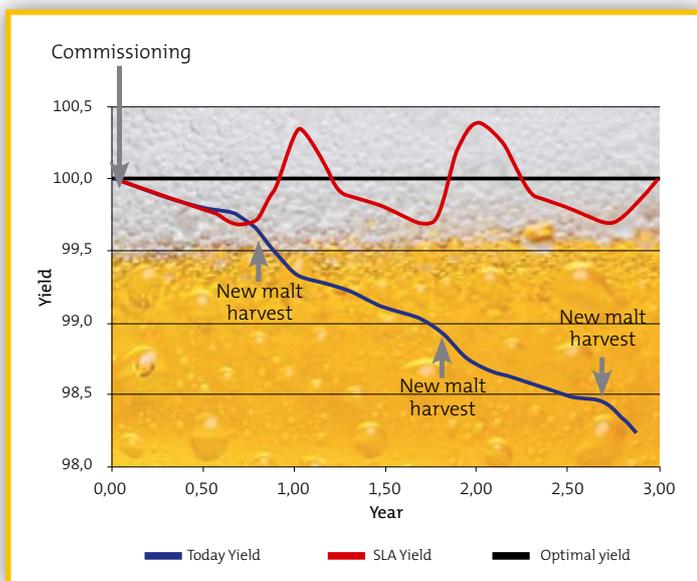
Performance Service Level Agreement Meura 2001 Mash Filter

Maintaining your filtration efficiency

During the commissioning of a mash filter, MEURA carries out the fine tuning of process parameters in order to achieve the best possible performance level. Later on, changes in external factors such as the wort recipe, loading, types and characteristics of raw materials, modification of brewing conditions, etc. may lead to deviations from the optimum level. As with all other technologies, the user should adapt the process parameters to the new situation.

The following chart shows typical changes in the yield over a three-year period.

The blue line indicates a possible decrease in the yield under the assumption that none of the parameter settings is modified



Extract losses represent a major extra cost. This is one of the main reasons why our customers invest in the purchase of a Meura 2001 filter. As an example, for a brewery using 30,000 T of malt per year (about 2 million hl/year) with a malt price of 400 €/T, a loss of 1% extract represents 120,000 € on a yearly basis.

In order to assure a constant high extract yield over the years, Meura has developed a Performance Service Level Agreement (Performance SLA). The red line in the figure above shows the objective to be reached with a Performance SLA.

The Performance SLA consists in 3 parts :

1) The Ilobox technology

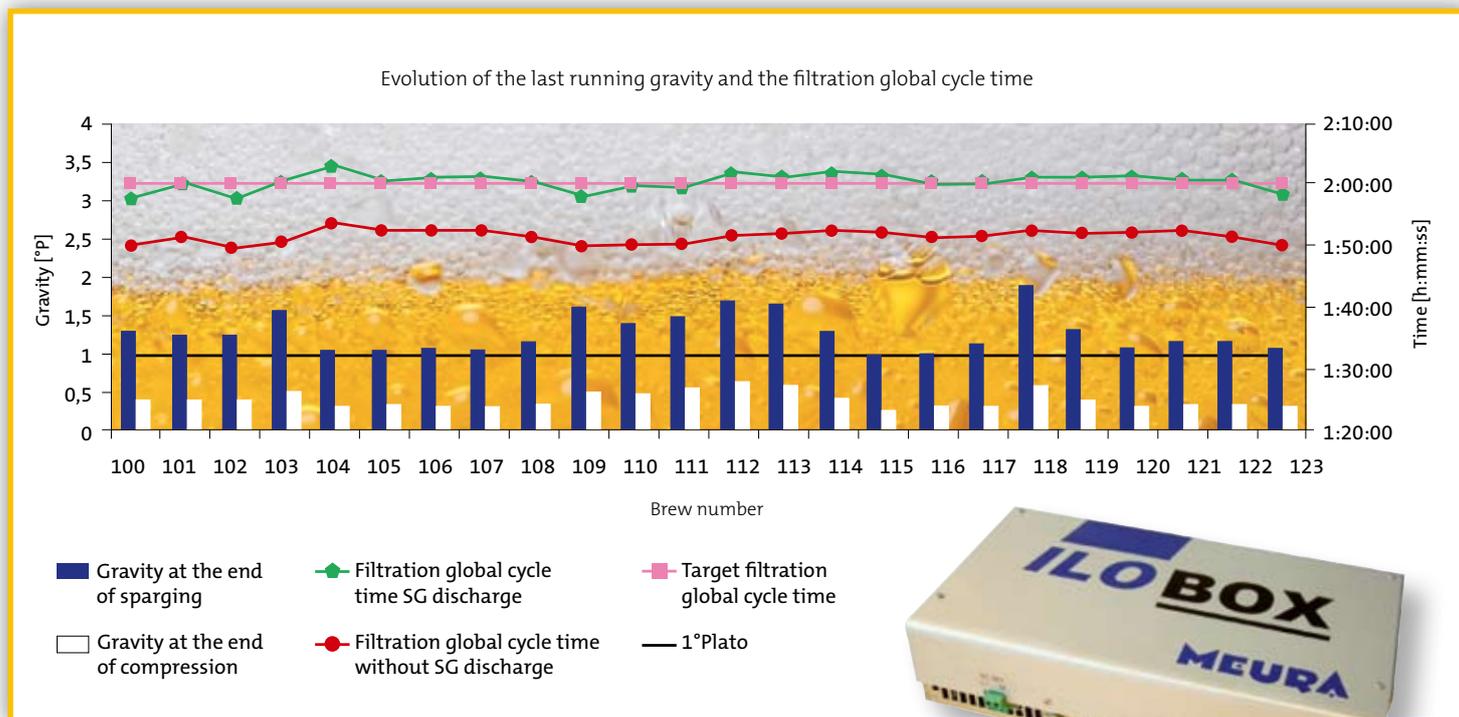
The optimization software developed on the **ILOBOX** (Iterative Logic Box) recalculates and delivers new process parameters to the PLC after each brew in order to maintain the optimum efficiency while respecting the user's temporary priorities. The **ILOBOX** is able to evaluate the performance by measuring the wort density during the last compression cycle. Indeed, thanks to the Meura 2001 filter equipped with membranes, the density during final compression of the filter cake is related to the washable extract of the cake and thus indicates the performance of the sparging cycle.

Besides the optimization of mash filter process parameters, the **ILOBOX** also offers other functionalities, such as archiving of performance data over the last two years and remote connection for a remote audit by MEURA.

The working principle of the **ILOBOX** is based on a batch-to-batch optimization. The process parameters of a brew are recorded and analysed, and for the next brew (of the same beer type) a new set of optimized parameters is generated by the **ILOBOX**. The only two parameters that have to be installed by the brewery are the requested total cycle time and the volume of sparging water. The **ILOBOX** will generate the parameters that produce the highest extract yield.

Meura started with this technology three years ago and the results to date are impressive. A very regular high level of performance is obtained which often exceeds what a commissioning engineer is able to do, since the **ILOBOX** manages 17 parameters at once, whereas during commissioning just a few parameters are optimized.

The next figure shows the industrial results with one of our customers.



The last running has a density of 1-1.2°P and the density during compressing is about 0.5°P, indicating excellent results. In addition these figures were obtained with a sparging rate of less than 1.6 l/kg! This is a unique figure, which was never obtained before with a Meura 2001 filter.

maintenance while helping prevent any mechanical failure. A Technologist will mainly control the up-stream equipment towards the mash filter and conduct a training session for any new team members.

2) The Remote Services

In the event that a customer has specific questions about the Meura 2001 or for example about a specific filtration profile, the Meura technologies department is able to connect remotely with the Ilobox and have a look at the observed process values stored in the system. In addition on a monthly basis the Meura specialist will make a report on the performance of the brews pass during the month, and will further analyse any brews that showed a specific filtration issue.

3) The On-Site Services

The **ILOBOX** is very efficient in providing the optimal parameters set for the Meura 2001 filter, but is not able to change process parameters up-stream of the mash filter that influence the filtration performance. For example, in the event that the grist composition is not optimal, shearing forces in the brewhouse are not under control, mash oxidation occurs, or there is filter under or overloading, parameters other than those of the Meura 2001 filter have to be optimized. In order to make the Performance SLA complete, a yearly site visit by a Meura Mechanical Specialist and a Process Technologist is scheduled. The Meura Specialist will carry out a mechanical check of the mash filter, supporting the production team so they can perform the best possible

Conclusion:

Meura's Performance SLA offers you the services you need to keep critical production factors (like savings in extract) and related costs under control. The pay-back period for such an Agreement is extremely short. Thanks to Meura's Performance Service Level Agreement you will keep your Meura 2001 mash filter at its top performance, which is key for your success.



Current news



EBC, Hamburg (Germany)

From 10 to 14 May 2009, Meura was well represented by Jeroen Vandenbussche (Sales & Marketing Manager), Claude Bauduin (Area Sales Manager), Frédérique Harmegnies (R&D Manager) and Ariane Dewulf (R&D Engineer), who all took part in the EBC 2009 in Hamburg. On this occasion Ariane Dewulf presented a poster entitled "Meura's Laboratory Mash Filtration Test". The poster sparked significant interest from a number of people, and excellent contacts were established during this key convention. Since then, several orders for this new laboratory filtration unit have been signed.



MBAA Caribbean (USA)



From 19 to 23 May 2009, Raul Martinez Gonzalez (Area Sales Manager) participated in the 48th Annual Convention of the MBAA, District Caribbean organized in Bridgetown, Barbados. This very stimulating Convention gave us the opportunity to meet some of our outstanding brewing colleagues in the Caribbean region.

Brasil Brau (Brazil)

Raul Martinez (Area Sales Manager) and Enrique Azzali (Sales Representative) exhibited at Brasil Brau in Sao Paulo from 23 to 25 June. This event provided a positive setting for meetings and chats with our existing customers, and allowed us to forge ties with new contacts.

Sochi Fair Pivo 2009 in Russia

From May 19 till 22, Meura exhibited at the Sochi Fair Pivo 2009 in Russia. Mr Alexander Tronnikov, Manager of Meura Moscow, was present and could make some very interesting contacts.



Meura's 2009 projects

Meura is on the move all over the world.

Here is a quick overview of Meura's current projects:

The most recent orders:

- Nestlé, Australia:** Ordered a Mechamasher (mechanical pre-masher) for their malt extract production.
- Castel Douala, Cameroon:** A hammermill and two Mechamashers (one for malt and one for adjuncts) will be installed. A second-hand Meura 2001 mash filter will be integrated into the brewhouse.
- Balaji Breweries, India:** A hammermill (Classicmill) and a Meura 2001 Carbo+ mash filter will be integrated into the brewhouse delivery by Praj Industries Ltd.
- Palm Breweries, Belgium:** Ordered the revamping and upgrade of their Meura 2001 mash filter.
- Nocal Brewery (Castel), Angola:** Has ordered a Clarisaver and a CIP Unit.

6. Ilesha Brewery (Castel), Nigeria:

Meura will carry out the revamping of the Meura 2001 mash filter.

7. Frankfurter Brauhaus, Germany:

CLM4, Mechamasher and a double mash filter with an Ilobox replacing a recent mash filter from the competition.

Major projects under erection:

- United Breweries Andhra-Pradesh, India:** Meura is supplying a hammermill (Classicmill) and a Meura 2001 Carbo+ mash filter that will be integrated into the Greenfield brewery supplied by Praj Industries Ltd.
- Castel, Benin:** Integration into the existing brewhouse of a second-hand Meura 2001 mash filter, a new hammermill and a Mechamasher. In addition the milling line will be modernised.

Major projects under commissioning:

- Chongqing Brewery (S&N), China:** Meura 2001 Carbo+ mash filter and Meuraclean.
- BBH Kiev, Ukraine:** Complete 600 hl brewhouse in parallel with a similar brewhouse supplied by Meura in the year 2002.
- Heineken Gauteng, South Africa:** Greenfield project with a Classicmill, a Mechamasher and a Meura 2001 Carbo+ mash filter.
- Lagos Brewery (Nigerian Breweries, Heineken), Nigeria:** Complete grain treatment, milling and brewhouse.
- Kolwezi Brewery (Castel), Democratic Republic of the Congo:** Brewhouse revamping.
- Coopers, Australia:** An Ilobox has been installed for their Meura 2001 mash filter.

Major projects recently commissioned:

- Jagatjit Industries Ltd, India:** Meura 2001 Carbo+ mash filter and Classicmill incorporated into a brewhouse from Praj Industries Ltd.
- Huambo (Castel), Angola:** Classicmill, Mechamasher and Meura 2001 Junior mash filter.
- El Aguila Brewery (SABMiller), Colombia:** Brewhouse revamping with two Meura 2001 mash filters, a Classicmill and a Mechamasher.

➔ Come and visit us at :

Drinktec: Munich, Germany, September 14-19, 2009 (Hall B2, booth 439)

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