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The Alcohol School 2009 Toulouse Recap

The Ethanol Technology Institute has just completed its 2009 Alcohol School held in Toulouse, France from March 30 – April 3. Delegates from over 20 different countries from 5 continents attended the week long course making this a truly international event.

History

The Alcohol School started out as a relatively small forum, growing moderately as the industry grew from 1980 to 2003. It provided valuable information in a format that continues to this day. In 2004, Lallemand Ethanol Technology (LET), a business unit of Lallemand, Inc., one of the world's foremost yeast supply companies, took over the management of the school under its educational arm, Ethanol Technology Institute. The updated 29th annual Alcohol School continues as an important educational resource for fuel ethanol and distilled beverage producers, providing valuable scientific insight into the processing of alcohol.

Course Objectives

The course is designed to educate our delegates in both fuel ethanol and beverage alcohol. This year more emphasis was made on beverage alcohol production and as a result two separate breakout sessions were dedicated to that market. As usual, there was an equal mix of alcohol technologies applicable to either industry. The European Alcohol School is generally geared more toward usage small grains and sugar substrates with some emphasis on fractionated feedstocks. The European program is designed for lab, plant, and management personnel and is organized around lectures, and laboratory demonstrations. This important resource course has become more valuable with the downturn in the economy. Now is the perfect time to invest in re-education for plant personnel. A minimal investment will pay back many times in plant troubleshooting and problem solving; the need for continual education is a must!

Course Agenda

The delegates listened to an Industry overview from both Fuel Ethanol and Distilled Beverage perspectives, how the growth of both industries has occurred and what the future holds. Other presentations ranged, from substrate selection and composition, the effects of small grains on processing, grain receiving, storage and milling (both wet and dry), and subsequent mash preparation. Lectures on fermentation (batch and continuous), and the processing of sugar beets, cane juice and molasses for fermentation were featured. Novel methods of dry grind processing, traditional

enzymes and enzymes needed as processing aids, high gravity fermentation technology, cellulose technology and biomass usage were interwoven with discussions on pollution abatement and the need for proper cleaning and sanitation to preserve ethanol yields. Emphasis on yeast production, propagation, and nutritional requirements were discussed as well as processing basics such as distillation, molecular sieves, and dry house technologies. The challenges of analytical methods used in process monitoring and a pertinent discussion on a nutritionist's view of DDGS and how we can improve the quality and consistency to open up more markets to this valuable co-product were reviewed. A relevant and timely topic of water and energy balance in operating facilities was discussed with practical applications for all in attendance. The finale consisted of looking at the challenges facing the alcohol industry and some of the technical opportunities for the future.

For the breakout sessions in the Beverage presentations, the topics dealt with specific information on raw materials used in various beverage processing facilities, mashing and fermentation of potable spirits, distillation for beverage alcohol, and a special section on maturation and blending of potable spirits. Other lectures consisted of selected quality control procedures and a case study involving one of the fastest growing sectors in potable spirits production - cachaça, a Brazilian spirit typically used in caprihinas. An informative talk on the selection of specialty yeasts for various spirits and the differences in whisky production from various regions.

One of the unique differentiating features of The Alcohol School is the use of a number of the world's foremost experts as well as the knowledge of the Lallemand Ethanol Technology senior staff. The partnership between these experts and the Ethanol Technology Institute is invaluable to be able to present a high quality program year after year to the industry. Many speakers have 15-25 years of experience in industry education.

Practical Applications

In addition to the lectures, tours of various facilities were interwoven into the program to provide the delegates with practical aspects in the application of some of the lectures discussed. In the European School, tours of Lallemand's (Blagnac) laboratory facilities took place in order for the delegates to better understand aspects of microscopy, basic microbiology, yeast and bacterial fermentations, and pilot scale alcohol fermentations.

In conjunction with the lectures, one of the highlights of the European School is the scotch whisky tasting session dedicated to examining the differences created by aging and maturation and by the utilization of different types of malt. Each whiskey was paired with certain types of food to accentuate the various flavour profiles. This is a great example of blending general information about a topic with the practical aspects of putting to use what was actually learned.

Future Education

Interest in both of Lallemand's Alcohol Schools (Europe and North America) and Operators Schools has been high over the past few years. In response, the Ethanol Technology Institute, run by Dr. Mike Ingledew, has constantly improved not only the quality but the relevance of the topics. Every year new topics are reviewed to ensure that current technologies and operating procedures are considered for inclusion into the agenda. Constant improvement is required to achieve our goal of providing the best educational experience possible. It is the belief of the Ethanol Technology Institute through the response of former delegates, that the Alcohol School with its portfolio of colored prints of each talk, combined with the fifth edition of *The Alcohol Textbook* (provided as part of tuition to each attendee) provides the right mix of educational materials to the industry. *The Alcohol Textbook* is the only textbook in the field of alcohol production that covers fuel alcohol production in detail along with discussions of beverage alcohol production technologies. Chapters are written by industry-leading experts in their field, as well as by Lallemand Ethanol Technology's own senior staff - all allowing us to produce a textbook second to none.

Lallemand Ethanol Technology and The Ethanol Technology Institute, with Professor Emeritus Mike Ingledew as the Scientific Director, are proud to have been a part of this tradition for the past 5 years and look forward to many years to come.

We are happy to announce the following dates: the 2009 North American School will be held September 13-18, 2009 in Montreal while next year's 2010 Alcohol School in Europe will be held in Toulouse, France on April 26-30. We hope to see you there! Look for more information on our website at www.ethanoltech.com.