

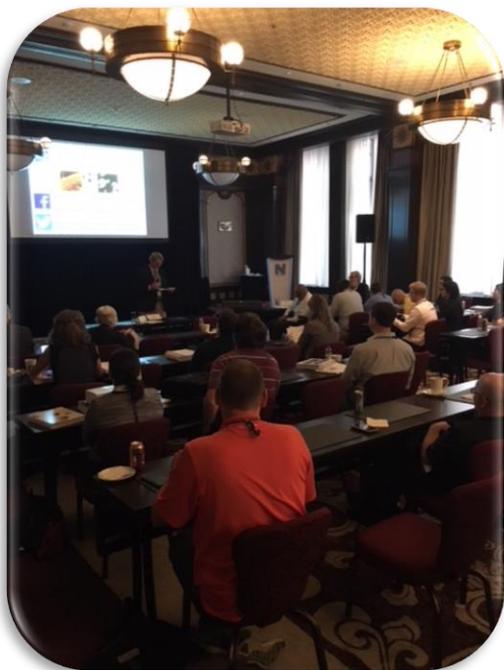
The Alcohol School 2018



The Alcohol School 2018 Montreal Recap

Lallemand Biofuels & Distilled Spirits (LBDS) and the Ethanol Technology Institute (the educational arm of LBDS) has recently completed its 2018 Alcohol School held in Montreal, Quebec, Canada from Sept 9-14. Approximately 92 delegates from both fuel ethanol and beverage distilling companies from 9 different countries attended the week long course.

Course Agenda



The delegates listened to an Industry overview from both Fuel Ethanol and Distilled Beverage perspectives, from what is happening currently and the future challenges facing both industries. Other presentations ranged from, substrate selection, enzymes and composition from both starch and sugar based substrates, grain receiving, storage and milling (both wet and dry), and subsequent mash preparation. Lectures on maximizing starch conversion, Yield, efficiency and profitability, and fractionation technologies were also featured.

Novel methods of dry grind processing, sugar feedstocks, getting back to basics for fermentation, water treatment (Distillery residues), cellulose technology and biomass usage were interwoven with discussions on analytical methods techniques, process control, plant troubleshooting 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 topics of new developments and technologies were discussed as well as new and novel yeasts for ethanol production were given to introduce delegates to technology available to the industry. The relevant topics of lactic acid production for ethanol, water reuse and energy balance in operating facilities, membrane technologies and oil separation were discussed with practical applications for all in attendance. The finale consisted of the topics of 2nd generation operating capabilities and implementation. 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. This session ended with the role of biorefineries in the alcohol industry and looking at the challenges facing the alcohol industry and some of the technical opportunities for the future.



Continuing from the success of last year's agenda. An even more expanded distilled beverage focus took place with lectures consisting of raw materials, mash preparation, rum and Canadian whisky production, distillation for flavours, process optimization and analytical methods. The finale consisted of presentations on gin and vodka production, craft distilling challenges and a maturation demonstration..



Again this year was a separate two day Alcohol School Concise Extra Credit - Craft Distilling seminar held separately from the regular school. Lectures and demonstrations consisted of a Craft Distilling Market Overview, Raw Materials and processing, yeast and fermentation management, batch distillation, blending and maturing, distilling troubleshooting. Day 2 consisted of sessions on whisky, rum, vodka and gin production. Yeast

impact on congeners, hygiene and contamination control, QA/QC for distillers, a comparison on the difference between large and craft distillers and how to build a brand. The finale consisted of talks about the current challenges and opportunities for Craft Distilleries and a sensory analysis training session. The Concise participants also got to intermingle and network with other industry colleagues through breaks and social settings. The session ended with the beverage tasting event described below. Overall a good mix of distillers to enhance the overall program!



One of the highlights of the North American program is the special beverage tasting event in Les Voutes, a series of three caves underneath the hotel. These caves were an integral part of the fortifications of Old Montreal and provided a fantastic setting in which various spirits like tequila, whisk(e)y, rum, vodka, gin, cachaça, wine and beer were tasted.

This event gives everyone an opportunity to experience various types of spirits and understand some of the knowledge learned throughout the course. It also gave the delegates a chance to interact and ask questions of the presenters in a more relaxed social setting. An additional feature this year was the introduction of a craft distilling table so that delegates got to experience firsthand some of the spirits produced by the craft artisans present.



Practical Applications



In addition to the lectures, tours of various facilities were interwoven into the program to provide the delegates a focus on facts discussed in lectures. In the North American School, tours of National Research Canada (NRC) laboratory facilities took place in order for the delegates to better understand microscopy

(general and fluorescence), basic microbiology, culture collection, molecular biology, yeast and bacterial fermentations, and pilot scale alcohol fermentation. Discussions on probiotic bacteria and how Lallemand's Animal Nutrition division cross links to alcohol production through Distillers Dried Grains and their nutritive value which is important to feed nutritionists were also presented.

Delegates also visited Lallemand Inc.'s (Prefontaine) yeast plant to learn how yeast are produced, processed and distributed in its various forms to industries around the world.



A visit to a nearby ethanol production facility (GreenField Global - Varennes, Québec, formerly Éthanol GreenField) provided delegates with an opportunity to view a first class fuel alcohol facility and to see in practice some of the techniques and knowledge learned from the lectures.



A visit to Diageo Global Supply (Salaberry-de-Valleyfield, Québec) provided another perspective in alcohol production from the distilled beverage point of view. Demonstrations such as distillation and a sensory tasting panel were given to get a feel for not only the science, but also the art of making alcohol for the distilled beverage industry.



Next Course

Our next course, The Alcohol School Concise – Distilled Spirits, will take place in Kingston, Jamaica on Oct 15-19, 2018. This will be held in conjunction with the WIRSPA (West Indies Rum and Spirits Producers Association) annual meeting. We are also happy to announce the following dates: the 2019 Alcohol School(s) will be held July 9-12 in Bangkok, Thailand and September 8-13 in Montreal, Quebec, Canada. We hope to see you there! Look for more information on our website at www.lbds.com.