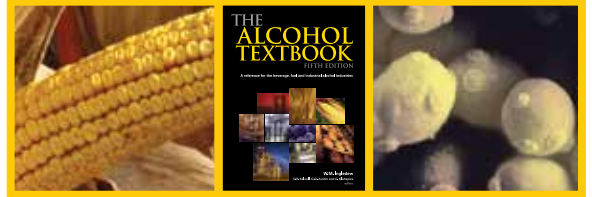


The Alcohol School 2015



Agenda

Montréal

InterContinental Montréal
September 13-18, 2015



ETHANOL
TECHNOLOGY
INSTITUTE

6120 West Douglas Avenue
Milwaukee, WI 53218 USA
800 583-6484 | 414 393-0410
Fax 414 358-8012
institute@ethanoltech.com
www.lallemandbds.com

Ethanol Technology Institute Staff

Graeme Walker, Ph.D

Scientific Director
gwalker@lallemand.com

Nadya Antoniadès

Administrative Director
nantoniades@lallemand.com

Liz Ward, Ph.D.

Registration Coordinator
lward@lallemand.com

Ethanol Technology Institute

6120 West Douglas Avenue
Milwaukee, WI 53218 USA
800 583-6484 | 414 393-0410
Fax 414 358-8012
institute@ethanoltech.com
www.lallemandbds.com

Hotel Information

InterContinental Montréal

360 rue St-Antoine Ouest
Montréal, Québec H2Y 3X4 Canada
514 987-9900 Fax: 514 847-8730
<https://resweb.passkey.com/go/AlcoholSchool2015>

Facility Visit

Préfontaine Yeast Plant

Lallemand Inc.
1620 rue Préfontaine
Montréal, Québec H1W 2N8
Canada
514 522-2133
www.lallemand.com

Diageo Global Supply

Valleyfield
1 rue Salaberry
Valleyfield, Québec J6T 2G9
Canada
450 373-3230
www.diageo.com

National Research Council of Canada

6100 Royal Mount
Montréal, Québec H4P 2R2
Canada
514 496-6100
www.irb-bri.cnrc-nrc.gc.ca

Éthanol GreenField Plant GreenField Ethanol

3300 boulevard Marie-Victorin
Varenes, Québec J3X 1P7
Canada
450 652-1800
www.greenfieldethanol.com

Montréal Information

Greater Montréal Convention and Tourism Bureau

www.tourism-montreal.org

The Alcohol School 2015



Sunday

SEPTEMBER 13, 2015

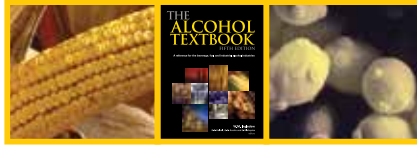
5:00 pm – 8:00 pm

REGISTRATION & WELCOME

**Chez Plume
Bistro**

Once you've checked into the hotel, please come and find the Alcohol School staff at the Chez Plume Bistro (on the reception desk level across the bridge) anytime after 5 pm. You will have a chance to register for the school, have your picture taken (to later share with your classmates for networking purposes), put your school materials back in your room, and then join us for hors d'oeuvres and an open bar to say hello to old and new friends and get the week off to a good start.

The Alcohol School 2015



Monday fuel alcohol session SEPTEMBER 14, 2015

| | | |
|----------------------------|---|----------------------------|
| 7:30 am – 8:30 am | REGISTRATION | SARAH BERNHARDT ROOM |
| 8:30 am – 8:45 am | Welcome <i>Angus Ballard, Lallemand Biofuels & Distilled Spirits (USA)</i> | |
| 8:45 am – 9:00 am | Introduction to the Agenda <i>Graeme Walker, Ethanol Technology Institute (Scotland)</i> | |
| 9:00 am – 9:30 am | The Global Fuel Alcohol Industry <i>Craig Pilgrim, Lallemand Biofuels & Distilled Spirits (USA)</i> | |
| 9:30 am – 10:00 am | The Global Distilled Spirits Industry <i>Steve Wright, Lallemand Biofuels & Distilled Spirits and Spiritech (Canada)</i> | |
| 10:00 am – 10:30 am | COFFEE | |
| 10:30 am – 11:10 am | Grain Receiving, Storage and Milling <i>Robert Piggot, Lallemand Biofuels & Distilled Spirits (Canada)</i> | SARAH BERNHARDT ROOM |
| 11:10 am – 11:50 am | Enzymes as Processing Aids in Alcohol Production <i>Kulinda Davis, Industrial Enzyme Consultant (USA)</i> | |
| 11:50 am – 12:00 pm | STRETCH/COMFORT BREAK | |
| 12:00 pm – 12:30 pm | Maximizing Starch Conversion to Ethanol <i>John Matthews, Novozymes (USA)</i> | |
| 12:30 pm – 1:00 pm | Yield Efficiency and Profitability in Alcohol Plants <i>Jack Swanson, Lallemand Biofuels & Distilled Spirits (USA)</i> | |
| 1:00 pm – 2:00 pm | LUNCH ALL – MAISONNEUVE | |
| 2:00 pm – 2:45 pm | Feedstocks for Fuel Alcohol Production <i>Dale Monceaux, AdvanceBio LLC (USA)</i> | SARAH BERNHARDT ROOM |
| 2:45 pm – 3:30 pm | Corn Grain for Ethanol Production <i>Doug Haeefe, Pioneer Hi-Bred International Ltd. (USA)</i> | |
| 3:30 pm – 4:00 pm | COFFEE | |
| 4:00 pm – 4:45 pm | Grain Mashing for Fuel Alcohol <i>Matt Richards, Lallemand Biofuels & Distilled Spirits (USA)</i> | |
| 4:45 pm – 5:30 pm | Fractionation Technologies for Alcohol Production <i>Vijay Singh, University of Illinois (USA)</i> | |

The Alcohol School 2015



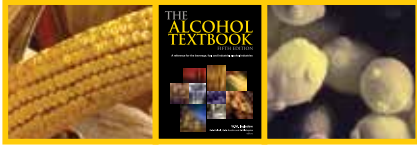
Monday

beverage alcohol session

SEPTEMBER 14, 2015

| | | | |
|----------------------------|--|-----------------------------|----------------------------|
| 7:30 am – 8:30 am | REGISTRATION | SARAH BERNHARDT ROOM | |
| 8:30 am – 8:45 am | Welcome <i>Angus Ballard, Lallemand Biofuels & Distilled Spirits (USA)</i> | | |
| 8:45 am – 9:00 am | Introduction to the Agenda <i>Graeme Walker, Ethanol Technology Institute (Scotland)</i> | | |
| 9:00 am – 9:30 am | The Global Fuel Alcohol Industry <i>Craig Pilgrim, Lallemand Biofuels & Distilled Spirits (USA)</i> | | |
| 9:30 am – 10:00 am | The Global Distilled Spirits Industry <i>Steve Wright, Lallemand Biofuels & Distilled Spirits and Spiritech (Canada)</i> | | |
| 10:00 am – 10:30 am | COFFEE | | |
| 10:30 am – 11:10 am | Grain Receiving, Storage and Milling <i>Robert Piggot, Lallemand Biofuels & Distilled Spirits (Canada)</i> | | |
| 11:10 am – 11:50 am | Enzymes as Processing Aids in Alcohol Production <i>Kulinda Davis, Industrial Enzyme Consultant (USA)</i> | | |
| 11:50 am – 12:00 pm | STRETCH/COMFORT BREAK | | |
| 12:00 pm – 12:30 pm | Maximising Starch Conversion to Ethanol <i>John Matthews, Novozymes (USA)</i> | | |
| 12:30 pm – 1:00 pm | Yield, Efficiency and Profitability in Alcohol Plants <i>Jack Swanson, Lallemand Biofuels & Distilled Spirits (USA)</i> | | |
| 1:00 pm – 2:00 pm | LUNCH ALL – MAISONNEUVE | | LUNCH |
| 2:00 pm – 2:45 pm | Raw Materials for Beverage Alcohol Production <i>Douglas Murray, Diageo (Scotland)</i> | | VIEUX-MONTREAL ROOM |
| 2:45 pm – 3:30 pm | Mash Preparation in the Beverage Distilling Industry <i>Steve Wright, Lallemand Biofuels & Distilled Spirits and Spiritech (Canada)</i> | | |
| 3:30 pm – 4:00 pm | COFFEE | | |
| 4:00 pm – 4:45 pm | Rum Production <i>Robert Piggot, Lallemand Biofuels & Distilled Spirits (Canada)</i> | | |
| 4:45 pm – 5:30 pm | Canadian Whisky Production & Aspects of Continuous Improvement <i>Martin Laberge, Diageo Global Supply (Canada)</i> | | |

The Alcohol School 2015



Tuesday combined session SEPTEMBER 15, 2015

| | | |
|----------------------------|---|----------------------|
| 8:30 am – 9:20 am | Sugar Feedstocks for Fuel and Beverage Alcohol <i>Henrique Amorim, Fermentec (Brazil)</i> | SARAH BERNHARDT ROOM |
| 9:20 am – 10:10 am | Current Challenges and New Opportunities in Alcohol Production <i>Vijay Singh, University of Illinois (USA)</i> | |
| 10:10 am – 10:35 am | COFFEE | |
| 10:35 am – 11:15 am | Physiology of Ethanol-Producing Yeasts <i>Graeme Walker, Ethanol Technology Institute (Scotland)</i> | |
| 11:15 am – 11:55 am | Very High Gravity Fermentations for Alcohol Production <i>Mike Ingledew, Professor Emeritus, University of Saskatchewan (Canada)</i> | |
| 11:55 am – 12:05 pm | STRETCH/COMFORT BREAK | |
| 12:05 pm – 12:45 pm | Yeast Production for Fuel and Beverage Alcohol <i>Tobias Fischborn, Lallemand R&D (Canada)</i> | |
| 12:45 pm – 1:45 pm | LUNCH ALL - MAISONNEUVE | LUNCH |
| 1:45 pm – 2:30 pm | Yeast: Propagation for Fuel and Beverage Alcohol <i>Chris Richards, Lallemand Biofuels & Distilled Spirits (USA)</i> | SARAH BERNHARDT ROOM |
| 2:30 pm – 3:15 pm | New Yeasts for Fuel and Beverage Alcohol <i>John McBride, Mascoma (USA)</i> | |
| 3:15 pm – 3:45 pm | COFFEE | |
| 3:45 pm – 4:30 pm | Distillation: Theory <i>Phil Madson, KATZEN International Inc (USA)</i> | |
| 4:30 pm – 5:15 pm | Distillation: Practice <i>Tara Vigil, KATZEN International Inc (USA)</i> | |

The Alcohol School 2015



Wednesday

combined session

SEPTEMBER 16, 2015

LALLEMAND R&D, NATIONAL RESEARCH COUNCIL OF CANADA

| | | |
|----------------------------|--|-----------------------------------|
| 8:00 am | BUSES FOR ALL TO NRC RESEARCH LABS | NRC RESEARCH LABS |
| 8:50 am – 9:00 am | Welcome to Lallemand R&D at NRC <i>Frederic D'Aoust, Lallemand Biofuels & Distilled Spirits (Canada)</i> | |
| 9:00 am – 9:45 am | Fermentation Management & Control <i>Mike Ingledew, Professor Emeritus, University of Saskatchewan (Canada)</i> | |
| 9:45 am – 10:30 am | Microbial Contamination & Control in a Distillery <i>Francois Van Zyl, Lallemand Biofuels & Distilled Spirits (Canada)</i> | |
| 10:30 am – 10:55 am | COFFEE | |
| 11:00 am – 12:00 pm | LAB VISITS | |
| 12:00 pm – 12:30 pm | Genetic Tests for Distillery Microbes <i>Annick Mercier, Lallemand Biofuels & Distilled Spirits (Canada)</i> | LUNCH |
| 12:30 pm – 1:30 pm | LUNCH | |
| 1:35 pm – 2:40 pm | LAB VISITS | NRC RESEARCH LABS |
| 2:45 pm – 3:20 pm | Fluorescence Methods for Distillery Microbes <i>Annick Mercier, Lallemand Biofuels & Distilled Spirits (Canada)</i> | |
| 3:20 pm – 3:50 pm | COFFEE | |
| 3:50 pm – 4:25 pm | Key Analytical Methods for Process Monitoring <i>Joseph Kalkwarf, Lallemand Biofuels & Distilled Spirits (USA)</i> | |
| 4:25 pm – 4:55 pm | Troubleshooting Problem Fermentations in Alcohol Plants <i>Ben Sunderhaus, Lallemand Biofuels & Distilled Spirits (USA)</i> | |
| 5:00 pm | BUSES BACK TO HOTEL | |
| 7:00 pm – 10:30 pm | Wine, Beer and Spirits Tasting <i>Complimentary food provided</i> | Les Voûtes (Caves under hotel) |

LAB VISITS (Order of rotation to vary)

| | |
|---|---|
| Lab Visit I <i>Technology Lab, LBDS</i> | Tour of Fuel Ethanol and Distilled Beverage Laboratory <i>Demonstration of whole-grain corn mash fermentation</i> |
| Lab Visit II <i>Process Lab</i> | Tour of Yeast Scale-up and Process Control Laboratory <i>Demonstration of yeast production and scale-up strategies</i> |
| Lab Visit III <i>Microbiology Lab</i> | Tour of Culture Collection/Microbiology Laboratory <i>Demonstration of yeast counting by microscope and plating</i> |
| Lab Visit IV <i>Genetics Lab</i> | Tour of Genetic Identification Laboratory <i>Demonstration of yeast and bacteria identification</i> |
| Lab Visit V <i>Probiotics Lab</i> | Tour of Animal Nutrition Laboratory and Lallemand Health Solutions Probiotic Bacteria Laboratories <i>Discussions on probiotics and coproduct nutritional value</i> |
| Lab Visit VI <i>Strain Development</i> | Tour of Molecular Biology Strain Improvement Laboratory <i>Demonstration of yeast mutagenesis and screening techniques</i> |

The Alcohol School 2015



Thursday fuel alcohol session SEPTEMBER 17, 2015

| | | |
|----------------------------|--|----------------------|
| 8:30 am – 9:20 am | Energy, Mass and Water Balance <i>Scott Kohl, White Energy (USA)</i> | SARAH BERNHARDT ROOM |
| 9:20 am – 10:10 am | Dryhouse Technologies in Distilleries (I) <i>Dale Monceaux, AdvanceBio LLC (USA)</i> | |
| 10:10 am – 10:40 am | COFFEE | |
| 10:40 am – 11:30 am | Dryhouse Technologies in Distilleries (II) <i>Dale Monceaux, AdvanceBio LLC (USA)</i> | |
| 11:30 am – 12:20 pm | Cellulosic Feedstocks & Cellulases <i>Aaron Hawkins, Novozymes (USA)</i> | |
| 12:20 pm – 1:30 pm | LUNCH | LUNCH |
| 1:30 pm – 5:00 pm | PLANT TOURS to Ethanol GreenField, OR Diageo Global Supply, OR Lallemand's Préfontaine Yeast Production Plant) | |

OPTION #1 GreenField Ethanol, Varennes, Québec

GreenField Ethanol of Quebec Inc. is an ICM-designed plant, completed in early 2007, that produces fuel-grade ethanol, carbon dioxide, distillers' dried grains, and MWDGS. Current capacity is 160 million liters (around 42 million US gallons) of fuel-grade ethanol per year, made from 15 million bushels of Québec corn. In 2008 GreenField Ethanol completed a second ICM-designed plant in Johnstown, Ontario, that produces 200 million liters of fuel-grade ethanol.

OPTION #2 Diageo Global Supply, Salaberry-de-Valleyfield, Québec

The original building dates from 1909 and became a distillery in 1938 producing alcohol for military purposes. It really became a whisky distillery in 1945 with the first whisky, Golden Wedding, being produced. During the fifties, new products such as Schenley OFC, Ron Carioca Rum, and Troika Premium Vodka came online. The sixties saw the construction of additional warehouses for aging and the addition of a grain dryer. On October 22, 1969, the one-millionth barrel was produced, followed by the second millionth in 1986. Today, the plant continues to produce world-renowned brands such as Smirnoff vodka, Captain Morgan rums, Gordon's London Dry gin, and VO Canadian whisky. In 2009 the plant was acquired by Diageo, the largest spirits manufacturer in the world, and produces 3.4 million cases of beverage alcohol annually.

OPTION #3 Lallemand's Préfontaine Yeast Plant Montréal, Québec

Lallemand was founded in Montréal at the end of the 19th century by a young immigrant from the Alsace region of France, Fred "Lallemand." The plant on Préfontaine Street was built in 1915, with production of baker's yeast starting there in 1923. Roland Chagnon acquired the business in 1952 and set it on a path of expansion. The Chagnon family remains the current owner. Today, the plant produces a range of liquid, cake, and dry yeasts for the fuel ethanol, beverage alcohol, and baking industries.

The Alcohol School 2015



Thursday

beverage alcohol session

SEPTEMBER 17, 2015

| | | |
|----------------------------|--|---------------------|
| 8:30 am – 9:20 am | Beverage Alcohol Distillation: Batch & Continuous Processes <i>Robert Piggot, Lallemand Biofuels & Distilled Spirits (Canada)</i> | VIEUX-MONTRÉAL ROOM |
| 9:20 am – 10:10 am | Flavour Distillation for Grain Whisky <i>Douglas Murray, Diageo (Scotland)</i> | |
| 10:10 am – 10:40 am | COFFEE | |
| 10:40 am – 11:30 am | Whisky Yeasting Methods: Balancing Best Practices and Stubborn Tradition <i>Kevin Smith, Brown-Forman Corporation (USA)</i> | |
| 11:30 am – 12:20 pm | Analytical Methods for Distilled Spirits <i>Douglas Murray, Diageo (Scotland)</i> | |
| 12:20 pm – 1:30 pm | LUNCH | LUNCH |
| 1:30 pm – 5:00 pm | PLANT TOURS to Ethanol GreenField, OR Diageo Global Supply, OR Lallemand's Préfontaine Yeast Production Plant) | |

OPTION #1 GreenField Ethanol, *Vareennes, Québec*

GreenField Ethanol of Quebec Inc. is an ICM-designed plant, completed in early 2007, that produces fuel-grade ethanol, carbon dioxide, distillers' dried grains, and MWDGS. Current capacity is 160 million liters (around 42 million US gallons) of fuel-grade ethanol per year, made from 15 million bushels of Québec corn. In 2008 GreenField Ethanol completed a second ICM-designed plant in Johnstown, Ontario, that produces 200 million liters of fuel-grade ethanol.

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UNAVAILABLE: OPTION #3 Lallemand's Préfontaine Yeast Plant *Montréal, Québec*

Lallemand was founded in Montréal at the end of the 19th century by a young immigrant from the Alsace region of France, Fred "Lallemand." The plant on Préfontaine Street was built in 1915, with production of baker's yeast starting there in 1923. Roland Chagnon acquired the business in 1952 and set it on a path of expansion. The Chagnon family remains the current owner. Today, the plant produces a range of liquid, cake, and dry yeasts for the fuel ethanol, beverage alcohol, and baking industries.

The Alcohol School 2015



Thursday tour options SEPTEMBER 17, 2015

General Description

Each delegate will visit only one of the three tour options shown.

Only those on the Diageo tour will be provided with a box lunch due to the distance from the hotel. Other delegates will have lunch on their own and then join their tour group. Spaces are limited, and tours will be filled on a first-come, first-served basis.

| | TOUR OPTION 1: Ethanol GreenField | | TOUR OPTION 2: Diageo Global Supply | | TOUR OPTION 3: Lallemand Préfontaine Yeast Plant | |
|-------|--------------------------------------|-------------------------------|---|---|---|-------|
| | Group gh | Groups ij | Group a | Group b | | |
| 12:30 | | | bus | bus | | 12:30 |
| 1 | | | box lunch served | box lunch served | | 1 |
| 1:30 | bus | bus | | | bus | 1:30 |
| 2 | Ethanol GreenField Fuel Plant | Ethanol GreenField Fuel Plant | Diageo Global Supply Valleyfield Distillery | Diageo Global Supply Valleyfield Distillery | Lallemand Préfontaine Yeast Plant Montréal | 2 |
| 2:30 | | | | | | 2:30 |
| 3 | | | | | | 3 |
| 3:30 | | | | | | 3:30 |
| 4 | | | | | | 4 |
| 4:30 | | | | | bus | 4:30 |
| 5 | bus | bus | | | | 5 |
| 5:30 | | | | | | 5:30 |
| 6 | | | | | | 6 |
| 6:30 | | | bus | bus | | 6:30 |
| 7 | | | | | | 7 |
| 7:30 | | | | | | 7:30 |

Option 1: Ethanol GreenField's Fuel Plant in Varennes, QC. Groups 1g, 1h, 1i, 1j

Option 2: Diageo Global Supply's Distillery in Valleyfield, QC. Lunch on the bus followed by the tour. Groups 2a, 2b

Option 3: Lallemand's Préfontaine Yeast Plant in Montréal. Groups 3e, 3f

The Alcohol School 2015



Friday

combined
session

SEPTEMBER 18, 2015

| | | |
|----------------------------|--|----------------------------|
| 8:30 am – 9:10 am | A Nutritionist's View of Distillers Grains <i>Kurt Rosentrater, Iowa State University (USA)</i> | SARAH BERNHARDT ROOM |
| 9:10 am – 9:50 am | Alcohol Plants as Biorefineries <i>Charles Abbas, ADM (USA)</i> | |
| 9:50 am – 10:00 am | STRETCH/COMFORT BREAK | |
| 10:00 am – 10:40 am | 2nd Generation Biofuels: Ethanol from Lignocellulose <i>Frederic D'Aoust, Lallemand Biofuels & Distilled Spirits (Canada)</i> | |
| 10:40 am – 11:00 am | COFFEE | |
| 11:00 am – 11:40 am | New Technologies for Alcohol Production <i>Scott Kohl, White Energy (USA)</i> | |
| 11:40 am – 12:30 pm | Technical Opportunities in the Industry – Where are we going? <i>Phil Madson, KATZEN International Inc. (USA)</i> | |
| 12:30 pm – 1:00 pm | Course Wrap-up and Presentation of Certificates | |