



7<sup>TH</sup> WORLDWIDE  
**DISTILLED SPIRITS**  
 VIRTUAL CONFERENCE  
 6<sup>TH</sup> – 8<sup>TH</sup> SEPTEMBER 2021

**MONDAY 6TH SEPTEMBER**

<b>09:00 - 9:45</b>	<b>Session 1: Welcome and conference opening</b>	<b>Douglas Murray</b>
09:00 - 09:15	Opening of WDSC 2021	Douglas Murray
09:15 - 09:45	On the path to recovery: challenges & opportunities for global spirits growth after the COVID crisis	Ulrich Adam
<b>09:45 - 12:30</b>	<b>Session 2: Diversity of Raw Materials and their Processing</b>	<b>Douglas Murray</b>
09:45 - 10:15	Drought tolerant barley could 'future-proof' the brewing and distilling industry?	Ross Alexander
<b>10:15 - 10:45</b>	<i>Coffee break &amp; Visit Virtual Exhibition</i>	
10:45 - 11:15	Grain Skinning and its Effects on Malting Barley	Paulina Okoro
11:15 - 11:45	The Impact of Barley Variety on Scotch Malt New Make Spirit Flavour	Barry Harrison
11:45 - 12:30	Poster Session 1	
<b>12:30 - 13:45</b>	<i>Lunch &amp; Visit Virtual Exhibition</i>	
<b>13:45 - 15:15</b>	<b>Session 3</b>	
	<b>Session 3.1 - Innovation and Diversity in Fermentation</b>	<b>Dawn Maskell</b>
13:45 - 14:15	Vacuoles under vacuum: Effects of reduced pressure on yeast performance and morphology during rum fermentations	Mario Guadalupe-Daqui
14:15 - 14:45	Exploring microbial alternatives for whisky flavour diversity	Elena Fossati
14:45 - 15:15	Effect of Terroir in Whiskey Production	Dustin Herb
	<b>Breakout 3.2 - Big Data</b>	<b>Scott Davies</b>
13:45 - 14:05	Management of Casks – Big Data in Action	Roy Burns
14:05 - 14:25	Trustworthy Autonomous Assistants	David Flynn
14:25 - 14:45	Unlock the Value of Digital Transformation in Beverage Manufacturing	Elena Popova
14:45 - 15:15	Discussion	
	<b>Breakout 3.3 - Raw Materials and Flavour</b>	<b>Barry Harrison</b>
13:45 - 14:05	Evolution of flavour volatiles during malted barley roasting and impact upon distillate congener profile	Rutele Marciulionyte
14:05 - 14:25	Unravelling the genetic and aromatic variability of sour and sweet orange and determination of the influence of the terroir on the triple-sec Cointreau.	Vincent Ferrer
14:25 - 14:45	Legumes as environmentally sustainable feedstocks for brewing and distilling fermentations	Kirsty Black
14:45 - 15:15	Discussion	
<b>15:15 - 15:45</b>	<i>Coffee break &amp; Visit Virtual Exhibition</i>	
<b>15:45 - 17:15</b>	<b>Session 4</b>	
	<b>Session 4.1 - Distillation Processes - Present and Future</b>	<b>Gillian Macdonald</b>
15:45 - 16:15	Designing and building a new spirits production facility in China	Zack Chen
16:15 - 16:45	Lessons learnt from the thermal oil still heating system at Bently Heritage Distillery	Tom Barnett
16:45 - 17:15	The game changing technology for delivering a Net Zero distillery	Tim Dumenil
	<b>Breakout 4.2: The Art of Storytelling and Why We Need It!</b>	<b>Penny Willson</b>
15:45 - 16:15	The Art of Story Telling	Ian Wisniewski
16:15 - 16:45	Let's Panic Together! - A practical approach to crisis management	Michael Spandern
16:45 - 17:15	Discussion	
	<b>Breakout 4.3 - Delve into Baijrou</b>	<b>Dawn Maskell</b>
15:45 - 16:05	Synergistic effect of multi-saccharifying enzymes on alcoholic fermentation for Chinese baijiu production	Qun Wu
16:05 - 16:25	Environment-derived Pichia driving the microbial community assembly of Baijiu fermentation	Hai Du
16:25 - 16:45	Fermentation Microbiomes of Different Styles of Chinese Liquor (Baijiu)	Feng-Yan Bai
16:45 - 17:15	Discussion	



7<sup>TH</sup> WORLDWIDE  
**DISTILLED SPIRITS**  
 VIRTUAL CONFERENCE  
 6<sup>TH</sup> – 8<sup>TH</sup> SEPTEMBER 2021

**TUESDAY 7TH SEPTEMBER**

09:00 - 10:30	Session 5	
<b>Session 5.1 - Authenticity and Security</b>		<b>Barry Harrison</b>
09:00 - 09:30	Strengths and limitations of radiocarbon for establishing year of distillation of single malt whiskies	Gordon Cook
09:30 - 10:00	Automated detection of fake and adulterated Scotch Whisky using comprehensive gas chromatography and artificial intelligence	Geraint Morgan
10:00 - 10:30	Rapidly increasing distilled spirits industry in Korea: An Application of the TOE framework	Suhyun Choi
<b>Breakout 5.2 - Analytical Chemistry 1</b>		<b>Craig Owen</b>
09:00 - 09:20	Assessing Spirit Quality Using GC-MS-O and Aroma Extraction Dilution Analysis	Peter Cockburn
09:20 - 09:40	Whisky Flavour analysis- an alternative approach	Kathy Ridgway
09:40 - 10:00	The Characterisation of Commercial Gins using HS-SPME-GC-MS and Rate-all-that-apply (RATA) Methodologies	Hugh Holds
10:00 - 10:30	Discussion	
<b>Breakout 5.3 - Environmental Impact</b>		<b>Morag Garden</b>
09:00 - 09:20	Sustainable Landscapes delivering zero carbon brewing and distilling	Steven Cann
09:20 - 09:40	The energy system in 2030 and how to meet the new legal limit of 75% carbon reduction	Tim Dumenil
09:40 - 10:00	Legume biorefining – alcohol production as a short cut to yielding protein isolates as food ingredients	Kelly Stewart
10:00 - 10:30	Discussion	
10:30 - 11:00	<i>Coffee break &amp; Visit Virtual Exhibition</i>	
<b>11:00 - 12:15 Session 6: Diversity of People</b>		<b>Dawn Maskell</b>
11:00 - 11:30	Invited Speaker - Title TBC	Heather Pritchard
11:30 - 12:15	Poster Session 2	
12:15 - 13:30	<i>Lunch &amp; Visit Virtual Exhibition</i>	
<b>13:30 - 15:00 Session 7</b>		
<b>Session 7.1 - Chemistry and Flavour of Spirits</b>		<b>Dagmara Dabrowska</b>
13:30 - 14:00	Comparison between orthonasal and retronasal perception of flavour in spirit drinks	Irene Baxter
14:00 - 14:30	Napping – UFP as a tool for comparison cachaça from different toasts and aging times between experts and consumers	Mariana Castro
14:30 - 15:00	Quantification of Whisky Congeners by NMR Spectroscopy	Marc Stockwell
<b>Breakout 7.2 - Challenging Tradition - R&amp;D Approach</b>		<b>Barry Harrison</b>
13:30 - 13:50	Challenging Traditions: A Structured Approach to Innovation within the Context of a Traditional American Whiskey Making Process	Kevin Smith
13:50 - 14:10	Accelerated Manufacturing Using Digital Twin Technology	Gordon Fleming
14:10 - 14:30	Cask Filling 4.0 - Virtually Filling Casks with a Digital Twin	Gordon Fleming
14:30 - 15:00	Discussion	
<b>Breakout 7.3 - Celebrating Process Diversity</b>		<b>Scott Davies</b>
13:30 - 13:50	Amburana, the finest Brazilian wood to make barrels	Aline Bortoletto
13:50 - 14:10	Design, build and commissioning of the Roe & Co Distillery	Lora Hemy
14:10 - 14:30	Canadian single malt whisky: the influence of environmental factors on the maturation of single malt whisky and it's influence on flavour profile	Caitlin Quinn
14:30 - 15:00	Discussion	
15:00 - 15:30	<i>Coffee break &amp; Visit Virtual Exhibition</i>	
<b>15:30 - 17:00 Session 8</b>		
<b>Session 8.1 - Challenging Tradition</b>		<b>Barry Harrison</b>
15:30 - 16:00	Exploring Terroir in Whiskey	Rob Arnold
16:00 - 16:30	Agave farming and the use of new technologies to evaluate its development to Tequila production	Miguel Cedeno
16:30 - 17:00	Proprietary strains, a good economic alternative to in house yeast propagation for tequila distillers	Alejandro Aguilar
<b>Breakout 8.2 - Fun with Fermentation</b>		<b>Gillian Macdonald</b>
15:30 - 15:50	Influence of non-Saccharomyces yeast on Scotch whisky fermentation and flavour development	Martina Daute
15:50 - 16:10	Modelling the Effects of Yeast Format and Pitching Rate for Scotch Malt Whisky Fermentations	Struan Reid
16:10 - 16:30	Proteases: Current adoption and opportunities for a traditional distilled spirits industry	Annick Mercier
16:30 - 17:00	Discussion	
15:30 - 16:15	Poster Session 3	
17:00 - 18:30	Social Session	



7<sup>TH</sup> WORLDWIDE  
**DISTILLED SPIRITS**  
 VIRTUAL CONFERENCE  
 6<sup>TH</sup> – 8<sup>TH</sup> SEPTEMBER 2021

**WEDNESDAY 8TH SEPTEMBER**

<b>09:00 - 10:45</b>	<b>Session 9: Improving our Environmental Impact 1</b>	<b>Scott Davies</b>
09:00 - 09:30	Major Accidents to the Environment – Risk Potential in the Whisky Industry	Euan Munro
09:30 - 10:00	Future Ready businesses - long term environmental trends, and how can companies best respond?	David Symons
10:00 - 10:45	Poster Session 4	
10:45 - 11:15	<i>Coffee break &amp; Visit Virtual Exhibition</i>	
<b>11:15 - 12:45</b>	<b>Session 10</b>	
<b>Session 10.1 - Improving our Environmental Impact 2</b>		<b>Morag Garden</b>
11:15 - 11:45	Spatial modelling of barley responses to climate change in Scotland	Mike Rivington
11:45 - 12:15	Implementation of a formal energy efficient design process for distillery projects	Aoife Hamill
12:15 - 12:45	Live Session: Sustainability has never been so good for business (TBC)	
<b>Breakout 10.2 - Analytical Chemistry 2</b>		<b>Dagmara Dabrowska</b>
11:15 - 11:35	Exploring the spirit aging bouquet in oak casks: contribution of key molecular markers responsible for nutty and roasted aromas in matured spirits	Magali Picard
11:35 - 11:55	Rapid and solvent-less determination of aldehydes in spirits using HS-SPME-OFD coupled with GC-MS/MS	Johanna Dennenlöhner
11:55 - 12:15	Evolution of fatty ethyl esters concentration and other aromatic compounds extracted from the lees during the distillation of an Ugni Blanc wine.	Charles Descoins
12:15 - 12:45	Discussion	
12:45 - 14:00	<i>Lunch &amp; Visit Virtual Exhibition</i>	
<b>14:00 - 15:30</b>	<b>Session 11</b>	
<b>Session 11.1 - Consumer Engagement</b>		<b>Penny Willson</b>
14:00 - 14:30	Consumption Behavior for Whisky and Other Distilled Spirits: A Social Media Based Survey in Turkey	Burkay Adalig
14:30 - 15:00	Understanding sensory properties and consumer preference among vodkas	Tess Aldredge
15:00 - 15:30	Consumer Advisory Boards - Incorporating consumers into your product development team	Leah Gruenig
<b>Breakout 11.2 - Small Distilleries - challenges and opportunities</b>		<b>Douglas Murray</b>
14:00 - 14:20	Farm to Bottle: Using Locally Foraged Botanicals to Create Desirable Flavours in Gin	Rachel Sutherland
14:20 - 14:40	Experimental study and modelling of terpenes in gin distillation	Jan Hodel
14:40 - 15:00	Banik Still: An innovation in Gin distillation technique.	Abhishek Banik
15:30 - 15:30	Discussion	
<b>15:30 - 16:15</b>	<b>Session 12: Conference Close</b>	<b>Joe Arciero</b>
15:30 - 16:00	Closing keynote speaker	
16:00 - 16:15	Closing remarks	Joe Arciero
16:15	<i>Coffee break &amp; Visit Virtual Exhibition</i>	