

ISSCT ENGINEERING WORKSHOP, MEXICO
21 - 24 November 2006

"Milling and diffusion extraction - Theory and practice"

- Programme
- Report

PROGRAMME

The main objectives of the Workshop were:

- To interchange knowledge and understanding from extraction engineers from around the world and to encourage communication and collaboration.
- To discuss, compare and review all aspects of design, operation, maintenance and control of milling and diffusion extraction processes.
- To identify the future directions of extraction processes and the development and/or research required to achieve these outcomes.

It was comprised of four sessions for the first two days on the following topics:

- Power Transmission
- Cane preparation and milling operations
- Diffusion
- Specific issues concerning the improvement and efficiency of energy use during cane preparation and juice extraction

Each session was devoted to presentations followed by a roundtable discussion.

The last two days were devoted to visits to three sugar mills in the region.

The schedule will be as follows:

Tuesday 21 November	
08:00 - 09:00	Registration of participants
09:00 - 09:30	Welcome speech and inauguration
09:30 - 10:00	The cane sugar industry in Mexico
10:00 - 11:00	Power transmission – Overview of current and future options Chairman: <i>Juliusz Lewinski, ISSCT Factory Commissioner, Hagglunds Drives, Mexico</i> <ul style="list-style-type: none">• Mechanical, hydraulic and electric drives• Requirements for preparation, mills and diffusers• Current limitations and future developments
11:00 – 11:30	Coffee break
11:30 - 13:00	Power transmission – continued roundtable discussion Some considerations in the selection of mill drives - Gómez Perlaza Transmisión de potencia de las tendencias actuales y futuras - J. Lewinsky Hydraulic drives in milling applications - B. Ljung Experiencia en el uso accionamientos electrónicos de potencia para molinos - C. Martínez and I. Ramos Considerations for an adequate upgrading of mechanical transmissions - I. Regalado
13:00 - 14:45	Lunch
14:45 - 16:00	Cane preparation - Overview: Historical evolution and future perspectives Chairman: <i>Paulo Delfini, Centro de Tecnologia Canavieira, Brazil</i> <ul style="list-style-type: none">• Knives and shredders

	<ul style="list-style-type: none"> • Impact of cane preparation on extraction • Assessment of performance – preparation index, broken cells • Impact of cane preparation on product diversification (cellulose and paper) • Effect of harvesting method
16:00 - 16:20	Coffee break
16:20 - 17:00	Cane preparation – continued roundtable discussion Cane separation - H CC Bourzutschky Impacto de las nuevas técnicas en la preparación de la caña en la producción de celulosa - M. Enríquez Poy Efficient cana preparation- S. Inskip
20:00 - 22:00	Artistic Show on regional culture - University of Veracruz
Wednesday 22 November	
09:00 - 11:00	Diffusers – Overview: Historical development and future evolution Chairman: <i>Dave Meadows, Tongaat Hulett Sugar, South Africa</i> <ul style="list-style-type: none"> • Comparison of different types of diffusers – BMA, de Smet and others. • Cane and bagasse diffusers • Maceration, recirculation and lifting screws. • Bed formation requirements • Control requirements • Optimising extraction and throughput • Capital, operational and maintenance costs • Dewatering rolls and dewatering mills • Future developments
11:00 - 11:30	Coffee break
11:30 - 13:00	Diffusers – continued roundtable discussion Further energy savings by optimized diffuser concept - B. Bartels Presentation on diffusion - B. Ljung Further energy savings by optimized diffuse concept - U. Schwanke The Bosch project's chainless diffuser - I. Voigt
13:00 - 14:30	Lunch
14:30 - 16:00	Mills – Overview: Basic configurations and options Predicting mill speed Chairman: <i>Geoff Kent, Sugar Research Institute, Australia</i> Individual milling units <ul style="list-style-type: none"> • Mill rolls – materials, grooving and roughness options • Trash/return plates and scrapers • Feeding devices – single underfeed rolls pressure feeders, Donnelly chutes • Juice drainage • Optimising extraction and throughput • Maintenance, operational and capital costs • Future developments Milling trains

	<ul style="list-style-type: none"> • Number of mills • Intermediate carriers • Maceration arrangements <p>Analytical parameters and sanitization of mill tandem</p>
16:00 – 16:30	Coffee break
16:30 – 18:30	<p>Compare and Contrast Milling and Diffusion Chairman: Peter Rein, Audubon Sugar School, Louisiana, USA</p> <ul style="list-style-type: none"> • Energy requirements of mills and diffusers • Effects of energy demands of mills and diffusers on overall factory energy balance • Differences in juice quality and effect on juice processing • Comparative capital costs • Comparative maintenance costs <p>Comparison of steam and power requirements of mill and diffuser operated innovative sugar plants- B. Morgenroth Comparison of juicy quality mills and diffusers - P. Rein</p>
20:00 - 22:00	Dinner and Artistic show. Government of the State of Veracruz
Thursday 23 November	
09:00	Departure for Tres valles sugar mill (Approx. 1:30 h)
11:00 - 14:00	Mill visit
14:00 - 16:30	Lunch (<i>Typical local food</i>)
16:30 - 18:00	Return to Veracruz
Friday 24 November	
09:00	Departure for visits to Mills
11:00 - 13:00	Visit San José de Abajo Mill
13:00 - 14:00	Travelling to Central Motzorongo Mill
14:00 - 15:00	Mill Visit
15:00 - 17:30	Lunch (<i>Typical local food</i>)
17:30 - 19:30	Return to Veracruz
Saturday 25 November	
09:00- 10.30	<p>Overview and outcome – roundtable Chairman: <i>Manuel Enriquez Poy, National Chamber of Alcohol and Sugar Industries, Mexico</i></p> <ul style="list-style-type: none"> • Outcomes from the workshop • Current and future research and development requirements
10.30 - 11.00	<p>Factory Engineering Sectional Meeting - Open Chairman: <i>Juliusz Lewinski, ISSCT Factory Commissioner</i></p> <ul style="list-style-type: none"> • Future workshop topics • Options for location of future workshops • Membership of section committee • Any other business

11.00 – 11.15

Closing session