

General information

Venue

The conference will be held at the Bibliotheca Alexandrina Conference Center (BACC), a state-of-the-art meeting and exhibition facility and an integral part of the Bibliotheca Alexandrina complex. It is located on the waterfront across from the Eastern Harbor and Silsilah Peninsula.

It houses four conference halls, four meeting rooms, two exhibition halls, a VIP lounge and a VIP meeting room, three restaurants and a coffee shop.

Alexandria, founded by Alexander the Great in 331 BC, was renowned as a beacon of culture, gaining legendary status in the ancient world. The city was the setting for the stormy relationship between Cleopatra and Mark Anthony, and was home to Pharos Lighthouse, one of the seven wonders of the ancient world, as well as the Library of Alexandria, a celebrated centre of learning. The city endured a decline until the 19th century.

Today, Alexandria is Egypt's second-largest city and its Mediterranean gateway to the world. Known as the Pearl of the Mediterranean, the city has an ambience that feels more Mediterranean than Middle Eastern – though it is only 225 kilometers (140 miles) from Cairo.

As an economic and industrial hub of one of the world's oldest civilizations, Alexandria mixes glories of the past with 21st-century trade, commerce and culture.

Archaeological treasures such as Pompey's Pillar, the Roman Amphitheatre and underwater ruins reflect the city's history. Re-establishing the city's reputation as a pre-eminent cultural centre, the famous library was reborn in 2002 as Bibliotheca Alexandrina.

The International Organizing Committee consists of the following country and continent representatives:

- Jaroslav Spunar - Chairman, Czech Republic
- Bryan Harvey, Canada
- Kazuyoshi Takeda, Japan

- Wolfgang Friedt, Germany
- Guoping Zhang, China
- Wayne Powell, United Kingdom
- Stefania Grando - ICARDA, Syria
- Silvia German, Uruguay
- Victor Shevtsov, Russia
- Michele Stanca, Italy
- Reg Lance, Australia
- Alan Schulman, Finland
- Michele Stanca, Italy
- Kevin Smith, USA
- Elcio Perpétuo Guimarães, Senior Officer Cereal/Breeding, Crop and Grassland Service, Plant Production and Protection Division, FAO.

The Local Organizing Committee:

- Stefania Grando, ICARDA (Chair)
- Sanjiaya Rajaram, ICARDA
- Flavio Capettini, ICARDA
- Salvatore Ceccarelli, ICARDA
- Amor Yahyaoui, ICARDA
- Michael Baum, ICARDA
- Hani Simo, ICARDA
- Maher Nouman, ARC Egypt
- Omneya Darwish, Bibliotheca Alexandrina
- Yasmin Maamoun, Bibliotheca Alexandrina

Detailed Program

10th International Barley Genetics Symposium

Bibliotheca Alexandrina, Alexandria, Egypt

5th -10th April 2008

Detailed Program

Saturday, 5th April 2008

13:00 Registration opens

13:00 – 16:00 **Generation Challenge Program (GCP) Workshop**

14:00 – 16:00 **Barley Genetic Linkage Groups, Barley Genome, Genes and Genetic Stocks**

16:00 – 18:00 **A New Approach to Genotype Classification for Physiochemical Composition by Near Infrared Spectroscopy (NIRS) and Multivariate Analysis with Applications in Molecular Research and Plant Breeding**

18:00 – 20:00 Welcome Mixer

Sunday, 6th April 2008

OPENING SESSION

9:00 **Welcome**

Mahmoud Solh, Director General, International Center for Agricultural Research in the Dry Areas, Syria

Bibliotheca Alexandrina Representative

Agricultural Research Center, Egypt, Representative

Jaroslav Spunar, Chairman IBGS, Agricultural Research Institute, Czech Republic

10:00 **Barley in Egypt**

Maher Noaman

Agricultural Research Centre, Egypt

10:30 **Plant Breeding and Climate Changes**

Salvatore Ceccarelli

International Center for Agricultural Research in the Dry Areas, Syria

11:00 Coffee Break

SESSION 1 – GERMLASM AND GENETIC RESOURCES

11:30 **New Approaches to Analysis of Germplasm and Genetic Resources**

Robert Henry

Centre for Plant Conservation Genetics, Southern Cross University, Australia

12:00 **Genetic Diversity and Population Structure of WANA Barley**

	Orabi J, Backes G and Jahoor A
12:20	Analysis of Molecular Diversity and Population Structure in Barley Landraces Sampled from Tunisia Ould M Mahmoud Med A and Hamza S, Tunisia
12:40	Variation of Agronomic Traits in Nordic and Baltic Spring Barley Brantestam AK, von Bothmer R, Rashal I, Gullord M and Weibull J
13:00	Lunch
SESSION 2 – MOLECULAR BREEDING	
15:00	Overview on Molecular Mapping Andreas Graner Leibniz Institute of Plant Genetics and Crop Plant Research, Germany
15:30	Pedigree Based Marker Assisted Selection: Applications in Barley Breeding Australia – Northern Node Mace ES, Lawson W, Rodgers D, Franckowiak JD, Platz G, Poulsen DP, Collard B, McPhail M, McKavanagh J, Christopher M, Fox G, Butler D, Douglass D, McGowan P, Hunt C, DeLacy I and Jordan D
15:50	Bayesian Multi-Environmental Advanced Backcross-QTL Analysis in Spring Barley (<i>H. vulgare ssp. spontaneum</i>) Bauer AM, Hoti F, von Korff M, Pillen K, Léon J, Sillanpää MJ
16:10	Allelic Diversity and Phenotypic Associations at Vernalization Loci in Cultivated Barley Cockram J, Leigh F, Mackay I, White J, Jones H, Powell W and O’Sullivan DM
16:30	Coffee Break
17:00 – 19:00	Plant Genetic Resources Workshop
17:00 – 19:00	Assessing Spot Blotch Resistance in Barley Workshop
Monday, 7th April 2008	
SESSION 3 – BARLEY GENOMICS 1	
8:30	New Trends in Barley Genomics David Marshall Scottish Crop Research Institute, Scotland
9:00	High Throughput TILLING for Functional Genomics in Barley Gottwald S and Stein N
9:20	Development of TILLMore: a Resource for Forward and Reverse Genetics in Barley

	Bovina R, Talamè V, Salvi S, Sanguineti MC, Lesini I, Celestini F, Piffanelli P, Lundquist U and Tuberosa R
9:40	Association Studies in a Spring Barley Collection Haseneyer G, Stracke S, Piepho H-P, <u>Graner A</u> and Geiger HH
10:00	Coffee Break
SESSION 4 – BARLEY GENOMICS 2	
10:30	Genomics for Barley: Where will it Take us? Alan H. Schulman MTT/BI Plant Genomics Laboratory, Finland
11:00	Detecting Drought Tolerance Loci in the Barley Genome via Genome Wide Association Mapping Neumann K, Varshney R, Baum M and Boerner A
11:20	Patterns of Structure and LD in Mediterranean Barley for Adaptation to Drought Comadran J, Russell JR, Thomas WTB, van Eeuwijk FA, Ceccarelli S, Grando S, Baum M, Stanca AM, Pecchioni N, Akar T, Al-Yassin A, Benbelkacem A, Choumane W, Ouabbou H, Bort J, Hackett CA and Romagosa I
11:40	Evolution of Barley <i>vrs1</i> Pourkheirandish M, Wicker T, Stein N, Fujimura T and Komatsuda T
12:00	Lunch
SESSION 5 – ABIOTIC STRESSES	
14:00	Integrated Aspects from Breeding to Genomics of the Abiotic Stress Response Luigi Cattivelli, Mastrangelo AM, Rizza F, Badeck F, Mazzucotelli E, Marè C, Crosatti C, Guerra D, Aprile A, Stanca AM CRA – Genomic Research Centre of Fiorenzuola d’Arda, Italy CRA – Cereal Research Centre of Foggia, Italy
14:30	Investigating Root Architecture in Barley and Responses to Salinity and High Boron Coventry SJ, Smith DS, McKay A, Eckermann P and Eglinton JK
14:50	Vernalization-Independent Regulation Pathway of the <i>VRN-H1</i> Vernalization Response Locus Karsai I, Szűcs P, Hayes PM, Kőszegi B, Bedő Z and Veisz O
15:10	Physiological Mechanism and Quantitative Trait Loci Associated with Waterlogging Tolerance in Barley Zhou MX, Pang JY, Li HB, Mendham NJ, Shabala S and Vaillancourt R
15:30	Barley Adaptation to Mediterranean Climates: Lessons Learned from the

	Spanish Landraces Igartua E, Casas AM, Lasa JM, Gracia MP, Casao C, Ciudad F, Montoya JL, Moralejo M and Molina-Cano JL
16:00 – 18:00	Poster Session 1 (includes Coffee Break)
16:30	Guided Tour of the Bibliotheca Alexandrina (Group 1)
Tuesday, 8th April 2008	
SESSION 6 – BIOTIC STRESSES 1	
8:30	The Barley-Puccinia Rust System: a Model to Study the Genetic Factors that Determine the Host-Status of Plants to Specialized Pathogens Rients E Niks, Jafary H and Marcel TC Department of Plant Breeding, Wageningen University, The Netherlands
9:00	Multiple Disease Resistance in the Wild Barley Diversity Collection Steffenson BJ, Roy JK, Muehlbauer GJ, Smith KP, Yahyaoui A, Valkoun J and Grando S
9:20	Markers for Resistance against Three Foliar Diseases in Barley Lehmensiek A, Sutherland MW, Bovill JH, Platz GJ, McNamara RB and Mace E
9:40	Contribution of ICARDA to Improve Fusarium Head Blight Tolerance in Barley – 20 Years of International Collaboration Capettini F, Grando S, Wright L and Skoglund L
10:00	Coffee Break
SESSION 7 – BIOTIC STRESSES 2	
10:30	Durable Resistance against Net Blotch in Barley Outi Manninen MTT Agrifood Research Finland, Finland
11:00	An Association-Genetic Approach to Durable Powdery-Mildew Resistance in Barley Johrde A and <u>Schweizer P</u>
11:20	Resistance Effects on Asymptomatic infection of <i>Rhynchosporium secalis</i> on Winter and Spring Barley Atkins SD, Fraaije B, Lucas JA, Fitt BDL and <u>Newton AC</u>
11:40	Fusarium Head Blight Evaluation and Genetic Diversity Assessment by Simple Sequence Repeats in Barley Cultivars and Landraces Jia QJ, Zhu JH, Wang JM and Yang JM
12:00	Lunch

SESSION 8 – BARLEY USES: MALT	
14:00	<p>Global warming Impact: Winter Barley as Reserve Crop for Brewing Industry in the Traditional European Countries Declaring Exclusive or Dominant Spring Malting Barley Utilization</p> <p>Jaroslav Spunar, Blumel H and Fouquin G</p> <p>Agricultural Research Institute, Czech Republic</p> <p>SECOBRA, Germany</p> <p>SECOBRA, France</p>
14:30	<p>Pyramiding QTLs to Improve Malting Quality in Barley: Genetic Gains in Phenotype and Diversity</p> <p>Emebiri LC, Michael P, Moody DB and Ogonnaya FC</p>
14:50	<p>Varietal and Site Interactions in the Growing of Malting Barley for Distilling and Brewing</p> <p>Bringhurst TA, Glasgow E, Agu RC, Brosnan JM and Thomas WTB</p>
15:10	<p>Proteome Analysis of Wort, Boiled Wort, and Beer Proteins</p> <p>Limure T, Nankaku N, Hirota N, Zhou TS, Kihara M, Hayashi K, Ito K and Sato K</p>
15:30	<p>Improvement of Two-row Malt Barley Through Two x Six-row Hybridization in India</p> <p>Verma RPS, Sarkar B and Mishra B</p>
16:00 – 18:00	Poster Session 2 (includes Coffee Break)
16:30	Guided Tour of the Bibliotheca Alexandrina (Group 2)
Wednesday, 9th April 2008	
SESSION 9 – BARLEY USES: FOOD	
8:30	<p>The Genetics of (1,3;1,4)-beta-glucan Synthesis in Barley: Applications in Food, Feed and Beer</p> <p>Geoff B Fincher</p> <p>Adelaide University, Australia</p>
9:00	<p>Barley for Food: Traits and Improvements</p> <p>Ullrich SE, Baik B-K, Quinde-Axtell Z and Nair S</p>
9:20	<p>Food Barley Quality Evaluation of an International Barley Landrace Collection</p> <p>Jilal A, Grando S, Henry RJ, Lee LS and Rice N</p>
9:40	<p>Effect of β-glucans and Starch Type on Glycaemic Response after Consumption of Barley Bread</p> <p>Finocchiaro F, Gianinetti A, Ferrari B and Stanca AM</p>
10:00	Coffee Break

SESSION 10 – BARLEY USES: FEED	
10:30	Breeding Barley for End-use Quality James H Helm Field Crop Development Centre, Canada
11:00	Barley QTL: A Compilation of Known Loci and the Discovery of New QTL for Digestibility Blake VC and Blake TK
11:20	Prospects of Barley in Augmenting Forage Resource in Arid and Semi Arid Regions Shrimali M
11:40	Visualising the Seed Phenome as a Physiochemical Near Infrared Spectral Response Interface for Genes, Mutants and Environment to be Applied in Basic Genetics and in Plant Breeding for Quality Munck L, Pontoppidan Møller B and Nørgaard L
12:00	Lunch
SESSION 11 – BIOCHEMISTRY, CYTOGENETICS AND TRANSFORMATION	
14:00	Genetic Engineering in Barley: Current Technologies and Recent Applications Jochen Kumlehn Leibniz Institute of Plant Genetics and Crop Plant Research, Germany
14:30	Accessing the Wild Side of Barley Johnston PA, Pickering R and Meiyalaghan V
14:50	Proteomics Approach for Identification of Specific Proteins in Salt Tolerant Barley Sugimoto M
15:10	Uzu, a Barley Semi-dwarf Gene, Suppresses Plant Regeneration in Calli Derived from Immature Embryos Rikiishi K, Saisho D and Takeda K
15:30	Coffee Break
SESSION 12 – FUNCTIONAL GENOMICS	
16:00	Functional genomics approaches to tackling abiotic stress tolerance Peter Langridge, Paltridge N, Fincher G and Sutton T Australian Centre for Plant Functional Genomics, Australia
16:30	Transcriptome Study of Storage Protein Genes of Field-Grown Barley in Response to Inorganic Nitrogen Fertilisers

	Hansen M, Bowra S, Lange M, Holm PB and Vincze E
17:00-18:00	Global Crop Diversity Trust - Global Strategy for the <i>Ex Situ</i> Conservation and Use of Barley Germplasm Jan Valkoun, Czech Republic
19:30	Symposium Dinner
Thursday, 10th April 2008	
SESSION 13 – BARLEY AND DEVELOPMENT	
8:30	Barley in Ethiopia Alemayehu Asefa, Ethiopia
8:50	Barley Improvement in Peru Gómez Pando L, Peru
9:10	Barley improvement in the Central Asia and Caucasus Region Djumakhanov B, Sariev B, Ortaev A, Bessonova T, Shesnova V, Halikov P, Oripov Sh and Gashimova H, ICARDA, Kazakhstan, Kyrgyzstan, Turkmenistan, Tajikistan, Uzbekistan and Azerbaijan
9:30	Participatory Varietal Selection of Barley Varieties in Tigray (Northern Ethiopia) and Implication for Low Input Conditions Fetien Abay and Bjørnstad Å, Ethiopia and Norway
10:00	Coffee Break
SESSION 14 – BARLEY SUCCESS STORIES	
10:30	Cloning Barley Genes Known Only by Phenotype Andris Kleinhofs Washington State University, USA
11:00	Breeding for Resistance to Barley Leaf Rust in a Highly Favourable Environment for Diseases Silvia Germán, Pereyra S, Castro M and Díaz J INIA La Estanzuela, Uruguay
11:30	The Evolution of Barley in Brazil: Contributions of Embrapa 30 Years of Research and Development Euclides Minella, EMBRAPA, Brazil
12:00	Lunch
CLOSING SESSION	
14:00	IBGS Business Meeting
15:00	Conclusion – Jaroslav Spunar, Chairman International Organizing Committee IBGS,

	Agricultural Research Institute, Czech Republic

Workshops

Saturday, 5th April 2008

Generation Challenge Program (GCP) Workshop

13:00-16:00

13:00-13:30	Overview about the GCP Rajeev Varshney, Sub-Program Leader 2, ICRISAT
13:30-14:00	Allele Mining Based on Non-Coding Regulatory SNPs in barley germplasm Maria von Korff
14:00-14:30	A dataset on allele diversity at orthologous candidate genes in GCP crops (ADOC) Dominique This, Montpellier SupAgro, Agropolis-France
14:30-15:00	Genomic Dissection of Tolerance to Drought Stress in Wild Barley Joanne Russel, SCRI
15:00-15:30	Developing and genotyping a composite germplasm set of barley Wafa Choumane
15:30-16:00	Discussion

Barley Genetic Linkage Groups, Barley

Genome, Genes and Genetic Stocks

14:00-16:00

Contact person

Dr. Udda Lundqvist, Nordic Gene Bank, P.O.Box 41, SE-23053 Alnarp, Sweden

Fax: +46 40 536650; Email: udda@nordgen.org

Preliminary program and topics for discussion

1. The coordinator system for the seven barley chromosomes, their linkage groups and the barley collections, their function and importance of to-day
2. Discussion of the need of this system in the future, the activities of to-day should they continue or should they be revised. Necessary suggestions
3. The whole genome coordination: Modernization of the overall system and integration of all types of current and historical data collections into a single and combined database
4. Barley Genetics Newsletter: its function to-day and in the future
5. Integration of molecular and morphological marker maps. Many existing gene markers are of great importance for the whole barley community when sequencing genes
6. The International Database for Barley Genes and Barley Genetic Stocks as a AceDB database server system and its integration into the Triticeae database "GrainGenes"
7. Germplasm problems in connection with the database
8. The maintenance of Barley Genetic Stocks: future descriptions of characters, future distribution and co-ordination
9. Problems of nomenclature and symbolization of barley genes. Main emphasis on resistant gene symbolization. (J.D. Franckowiak and Brian Steffenson)

10. International Chairman of the barley linkage groups and collections. Need in the future?
 11. Relevant and important topics suggested by the participants of the workshop or by the International Barley Genetics Symposium.
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A New Approach to Genotype Classification for Physiochemical Composition by Near Infrared Spectroscopy (NIRS) and Multivariate Analysis with Applications in Molecular Research and Plant Breeding

16:00-18:00

Contact person

Professor Lars Munck, Life Science Faculty, Spectroscopic and Chemometric group, Department of Food Science, Copenhagen University.

Website: www.models.life.ku.dk; Email: lmun@life.ku.dk.

Background

Near infrared spectrometers and commercial software are today used for estimation of chemical composition of specific analyses by plant breeders. The workshop will demonstrate that genotype classification for complex quality traits are possible by a simple Principal Component Analysis (PCA) data program without the need for commercial calibrations to be used in barley molecular research and plant breeding. The NIR approach is supplementary to selection by Qualitative Trait Loci (QTL's)

Program

16:00-17:00	Introduction - New uses of Near Infrared Spectroscopy and multivariate analysis for convenient genotype classification in molecular biology and plant breeding Lars Munck
17:00-17:30	Short presentations regarding experiences of the use of NIRS in barley research and plant breeding are welcome Please contact to the e-mail address above
17:30-18:00	Discussion

Literature

L.Munck A new holistic exploratory approach to systems biology by near infrared spectroscopy evaluated by chemometrics and data inspection. J.Chemometrics 21:406-426 (2007).

L.Munck and B.Møller. Principal Component Analysis of Near Infrared Spectra as a tool of Endosperm Mutant Characterization and in Barley Breeding for Quality. Czech.J.Genet.Plant.Breed. 41 (3). (IBGS-9)

L.Munck, B.Møller, J.Pram Nielsen. From plant breeding to data breeding – How new multivariate screening methods could bridge the information gap between the genotype and the phenotype. Proceedings IBGS 8 Dept.Plant Science. Adelaide University, Glen Osmond, South Australia Vol II pp 179-182.

Sunday, 6th April 2008

Plant Genetic Resources

17:00-19:00

Contact person

Dr. Michael Mackay, Curator, Australian Winter Cereals Collection
NSW Department of Primary Industries, Australia
Email: michael.mackay@dpi.nsw.gov.au

Preliminary program and topics for discussion

1. GPG2 Barley Crop Registry - Convenor: J Konopka
 2. FIGS Utilization/Evaluation - Convenor: M Mackay
 3. GCDT Evaluation Awards project - Convenor: M Ambrose
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Assessing spot blotch resistance in barley

17:00-19:00

Background

This workshop will discuss the nature and stability of resistance to spot blotch (*Bipolaris sorokiniana*/*Cochliobolus sativus*) in barley, with particular emphasis on the range of international resistance sources and the types of resistance characterized to date by both molecular and pathogenicity studies. One goal is to begin developing an international differential set that can be used for characterizing fungal isolates with respect to their pathogenicity in the presence of major resistance genes. The workshop format will encourage debate of the issues based around a series of short 5-10 minute presentations. Anyone who would like to present work relevant to the workshop should send a title and short abstract to:

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University of Southern Queensland
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