



1ST INTERNATIONAL WORKSHOP ON BARLEY LEAF DISEASES

“Healthy Barley for Healthy Feed and Food for the Future”



Hotel Valentini, Salsomaggiore Terme, Italy, 03-06 June 2014

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Sponsors



Patronage



Scientific Program

Tuesday 03 June 2014

From 12.00 *Registration of delegates and poster set up*

14.00 – 14.20 *Welcome address and Workshop opening by Adrian Newton, Chairman of IWBLD*

14.20 – 15.00 *“Lectio Magistralis” – Brian Steffenson: Combating cereal rusts over the Millennia: from the Robigalia to African stem rust*

15.00 – 17.00 *Session 1: Pathogen populations and variation*
Chair: Adrian Newton

15.00-15.20 Alireza Akhavan, T. Kelly Turkington, Berisso Kebede, Andy Tekauz, Kequan Xi, H. Randy Kutcher, James R. Tucker, Colleen Kirkham, Krishan Kumar, Stephen. E. Strelkov (Lacombe, Winnipeg, Saskatoon, Brandon, Melfort - **Canada**):

Comparative genetic diversity of *Pyrenophora teres* f. *teres* and *P. teres* f. *maculata* populations on the Canadian Prairies

15.20-15.40 Ryan Fowler, Jerome Franckowiak, Gregory Platz, Lee Hickey (St Lucia - **Australia**):

Pathotypic variation of the *Pyrenophora teres* f. *teres* population in Australia

15.40-16.00 Celeste Linde (Canberra - **Australia**):

Effect of a weedy host on pathogen evolution

16.00-16.20 Leona Leisova Svobodova (Prague - **Czech Republic**):

Population study of *Pyrenophora teres*

16.20-16.40 Mark S. McLean, T.K. Turkington, M. Jalli, F. Smit, G.J. Platz (Horsham, Warwick - **Australia**, Lacombe - **Canada**; **South Africa**; Jokioinen - **Finland**):

A new international differential set for testing *Pyrenophora teres* f. *maculata*

16.40-17.00 Mark W. Sutherland, G Platz, R. Fowler, A. Martin (Toowoomba, Warwick - **Australia**):

Assembly of candidate barleys for inclusion in an international differential set to assess virulence and pathotype of *Bipolaris sorokiniana* isolates

17.00 – 17.30 *Coffee break and poster viewing (with authors)*

17.30 – 18.50 Session 2: Epidemiology and disease management: conventional and bio-based products for barley health

Chair: Hugh Wallwork

17.30-17.50 T. Kelly Turkington, K. Xi, G. Peng, R.A. Martin, K.N. Harker, J.T. O'Donovan (Lacombe, Saskatoon, Charlottetown – **Canada**):

The impact of seed treatment, foliar fungicide, and variety resistance on barley leaf disease severity and productivity

17.50-18.10 Matthew Cromey (Christchurch - **New Zealand**):

Factors associated with changes to the barley leaf disease spectrum in New Zealand from 1899 to 2014

18.10-18.30 Adrian C. Newton, David C Guy (Dundee – **United kingdom**):

Effects of component proportions in barley cultivar mixtures and cultivation on *Rhynchosporium* symptoms

18.30-18.50 Inger Åhman (Alnarp - **Sweden**):

Induction of barley responses by saccharin giving contrasting effects on biotrophic and necrotrophic pathogens

Wednesday 04 June 2014

09.00 – 10.30 Session 3: Structural and functional genomics of leaf barley pathogens

Chair: Brian Steffenson

09.00-09.30 Pietro Spanu (London - **United Kingdom**):

The genomics of *Blumeria graminis* f.sp. *hordei*

09.30-09.50 Wolfgang Knogge, Daniel Penselin, Claudia Wenzel, Martin Münsterkötter, Stefan Taudien, Marius Felder, Matthias Platzer, Anna Avrova, David Hughes, Kevin King, Bruce Fitt, Thomas Wolf, Ekaterina Shelest (Halle, Munich, Jena – **Germany**; Dundee, Hatfield, Harpenden – **United Kingdom**):

Host specialization in the fungal genus *Rhynchosporium*

09.50-10.10 Anna Avrova, Louise Gamble, Lucie Griffe, Barbara Franco Orozco, Olaya Ruiz, Martin Münsterkötter, M Looseley, Wolfgang Knogge, Adrian Newton, Paul Birch, Kim Hammond-Kosack, Kostya Kanyuka, (Dundee, Harpenden – **United Kingdom**; Munich, Halle – **Germany**):

Rhynchosporium commune effectors identification and exploitation

10.10-10.30 Anke Martin, Ryan Fowler, Terry Usher, Greg Platz, A. Kilian (Toowoomba, Warwick, Yarralumla – **Australia**):

DARtseq markers associated with phenotype in *Pyrenophora teres* f. *teres* genetic diversity study and using DARt markers in mapping of hybrid population

10.30 – 11.00 Coffee break and poster viewing (with authors)

11.00 – 12.50 Session 4: Molecular plant-pathogen interactions
Chair: Frank Ordon

11.00-11.30 Patrick Schweizer, Dimitar Douchkov, Jeyaraman Rajaraman, Hassan Razzak, Wenjing Hu, Tingting Zhang, Rajiv Sharma, Benjamin Kilian, Nils Stein, Wubei Dong (Gatersleben - **Germany**):

Broad-spectrum resistance of barley to powdery mildew - one trait, many genes

11.30-11.50 Timothy L. Friesen, Rachel A. Shjerve, Vaidehi Koladia, Robert S. Brueggeman, Justin D. Faris (Fargo - **USA**):

Evaluation of a *Pyrenophora teres* f. *teres* mapping population shows multiple independent interactions with the barley 6H chromosome region

11.50-12.10 Mark Looseley, Adrian Newton, Peter Werner, David Harrap, Bruce Fitt (Dundee, Hertfordshire – **United Kingdom**):

Image analysis methods for studying resistance during early infection of barley by *Rhynchosporium commune*

12.10-12.30 Chiara Biselli (Fiorenzuola - **Italy**):

Characterization and discovery of barley leaf stripe resistance genes

12.30-12.50 Luca Pozzana (Milan - **Italy**):

Promega: Development of the Maxwell® 16 LEV Plant DNA Kit, and its application to plant leaf tissues

13.00 – 14.30 Lunch

14.30 – 16.10 Session 5: Incidence and control of barley leaf diseases in the CWANA region
Chair: Sajid Rehman

14.30-14.50 Aziz Karakaya, Zafer Mert, Arzu Çelik Oğuz, M. Reza Azamparsa, Esra Çelik, Kadir Akan, Lütfi Çetin (Ankara, Eskişehir – **Turkey**):

Current status of scald and net blotch diseases of barley in Turkey

14.50-15.10 Fatiha Bentata, Labhilili M., Essouaadi N., Benchaachoua M., Maafa I., El Aissami A., El Jaouadi A., Ibijbijen J. (Rabat, Kénitra, Meknés – **Morocco**):

Emergence and importance of *Rhynchosporium secalis* in Morocco

15.10-15.30 Rajan Selvakumar, R.P.S. Verma, S.S. Vaish, S.P. Singh, V.K. Goyal, A.S. Kharub, I. Sharma (Karnal, Varanasi, Faizabad – India; Rabat – **Morocco**):

Characterization of ICARDA barley germplasm lines for leaf blight resistance in India

15.30-15.50 Sajid Rehman, A. Visioni, M. El Hadi Maatougui, S. Gyawali, R.P.S. Verma (Rabat – **Morocco**):

Mitigating barley foliar diseases at global scale through germplasm enhancement at ICARDA

15.50-16.10 Fernanda M. Gamba, Mónica Ziminov, Amor Yahyaoui (Paysandú – **Uruguay**; Texcoco – **Mexico**):

Phenotypic diversity of *Pyrenophora teres* f. sp. *teres* in Uruguay, Morocco and Syria

16.10-16.30 Beyene Bitew (Debre Berhan, **Ethiopia**):

Status of barley leaf diseases in North Shewa Highlands, Ethiopia

16.30 – 17.00 Coffee break and poster viewing (with authors)

17.00 – 18.20 Session 6: Durable resistance in Barley

Chair: Giampiero Valè

17.00-17.20 Hugh Wallwork, Milica Grcic, Diane Mather (Adelaide – **Australia**):

Towards durable resistance to scald in barley

17.20-17.40 Marja Jalli, Outi Manninen, Teija Tenhola-Roininen, Lauri Jauhiainen, Tuomo Puroola, Ari Rajala, Pirjo Peltonen-Sainio (Jokioinen - **Finland**):

Achievements and challenges in breeding for durable net blotch resistance

17.40-18.00 Jerome D. Franckowiak, Ryan .A. Fowler, Gregory J. Platz and Lee T. Hickey (Warwick, St Lucia – **Australia**):

Insights on durable resistance to the net form of net blotch in barley

18.00-18.20 Sanjiv Gupta (South Perth – **Australia**):

Barley disease resistance in Western Australia - Issues and solutions

From 21.00 Choir concert “La Corale di Fiorenzuola” conducted by maestro Cassi at the main hall of the Thermae Palace

Thursday 05 June 2014

09.00 – 12.40 Session 7: Resistance breeding: the case of *Pyrenophora teres* and *Puccinia hordei* **Chair: Maria Jalli**

09.00-09.30 Frank Ordon, Janine König, Doris Kopahnke, Dragan Perovic (Quedlinburg – **Germany**):

Mapping and exploitation of new sources of resistance to the net form of net blotch (*Pyrenophora teres* f. *teres*) in barley

09.30-09.50 Olga Afanasenko, Elena Potokina, Anton Koziakov, Pete Hedlay, Nina Lashina, Anna Anisimova, Outi Manninen, Marja Jalli (Saint Petersburg – **Russia**; Dundee – **United Kingdom**; Jokioinen – **Finland**):

Mapping of qualitative and isolate specific quantitative trait loci associated with resistance to *Pyrenophora teres* f. *teres* and *Cochliobolus sativus* in two double haploid barley populations

09.50-10.10 Anke Martin, Francois Smit, Francois G. Potgieter, Greg Platz, Renée Prins (Toowoomba, Warwick – **Australia**; Caledon, Worcester, Bloemfontein – **South Africa**):

Identification of *Pyrenophora teres* f. *teres* resistance in South African barley line UVC8

10.10-10.30 Timothy L. Friesen, Vaidehi Koladia, Robert S. Brueggeman, and Justin D. Faris (Fargo – **USA**):

A CI5791 × Tifang RI population shows major dominant net form net blotch resistance located on barley chromosomes 6H and 3H in CI5791 and Tifang, respectively

10.30 – 11.00 Coffee break and poster viewing (with authors)

09.00 – 12.40 Session 7: Resistance breeding: the case of *Pyrenophora teres* and *Puccinia hordei* **Chair: Jerome D. Franckowiak**

11.00-11.20 Liliana Vasilescu, Alionte Eliana, Cană Lidia, Bude Alexandru (Fundulea – **Romania**):

Effect of net blotch disease (*Pyrenophora teres* f. *teres*) on yield and grain quality of winter barley

11.20-11.40 Morten Lillemo, Ronja Wonneberger, Timothy L. Friesen, Andrea Ficke (As – **Norway**, Fargo – **USA**):

Can susceptibility to net blotch in barley be explained by sensitivity to necrotrophic effectors?

11.40-12.00 Robert F. Park, P.G.Golegaonkar, L. Derevnina, K. Sandhu, H. Elmansour, P. Dracatos, D. Singh (Narellan – **Australia**; Bangalore – **India**; Davis – **USA**):

Adult plant resistance to leaf rust in barley: the story so far

12.00-12.20 Peter Dracatos, D. Singh, L. Derevnina, M. Zhou, R.F. Park (Narellan, Tasmania – **Australia**; Davis – **USA**):

Novel additive adult plant resistance sources to leaf rust in barley

12.20-12.40 Laura Ziemis, Colleen Hunt, Emma Mace, Gregory Platz, Robert Park, Jerome Franckowiak, David Jordan, Lee Hickey (St Lucia, Warwick; Narellan – **Australia**):

Association mapping of resistance to *Puccinia hordei* in Australian barley breeding germplasm

12.40 - 14.00 Lunch

14.00 – 14.40 Session 8: Resistance breeding

Chair: Anna Avrova

14.00-14.20 Greg Platz, Francis Ogbonnaya (Warwick, Barton – **Australia**):

National barley foliar pathogens variety improvement program - a coordinated approach to disease control

14.20-14.40 Lee Hickey, Silvia Germán, Silvia Pereyra, Juan Díaz, Laura Ziemis, Ryan Fowler, Greg Platz, Jerome Franckowiak, Mark Dieters (St Lucia, Warwick, Brisbane – **Australia**; Colonia – **Uruguay**):

Validation of rapid gene transfer methodology in barley

15.00 – 18.30 Visit to field trials – CRA-Genomics Research Centre, Fiorenzuola d'Arda

From 20.00 Social dinner at the Hotel Valentini

Friday 06 June 2014

09.00 – 10.20 Session 9: Barley diseases and climate changes

Chair: T. Kelly Turkington

09.00-09.20 Franz W. Badeck (Fiorenzuola d'Arda - **Italy**):

...For the times they are a changing...hence the diseases they are a changing.
Climate change and barley diseases

09.20-09.40 Michael Lyngkjær, Bolette L. Mikkelsen (Copenhagen – **Denmark**):

Impact of climate change on susceptibility to powdery mildew and spot blotch disease in barley

09.40-10.00 Sonia Mansouri, Leila Radhouane, Inès Abidi (Ariana - **Tunisia**):

Climate change impacts on barley diseases in the Béja region of north-western Tunisia

10.00-10.20 Hajer Ben Ghanem, Mouldi El Felah (Ariana – **Tunisia**):

Agro-meteorological evolution of barley leaf diseases in Tunisia

10.20 – 11.00 Coffee break and poster viewing (with authors)

11.00 – 12.30 Round Table “from Salsomaggiore to next meeting in 2018” organized by Adrian Newton, Hugh Wallwork and Brian Steffenson

From 12.30 Lunch, poster take down and departure of delegates