



Coordinating global research for wheat

EXPERT WORKING GROUP MEETING REPORT

Wheat Phenotyping to Support Wheat Improvement

DATE OF THE MEETING	22/04/2017
LOCATION/ONLINE	BOKU – Vienna, Austria

AGENDA

Public presentations and discussions

1. Welcome – Bettina Berger and Fernanda Dreccer
2. Overview of Wheat Initiative (Peter Langridge) – What is the WI? What are the aims?
3. Presentation and Discussion: Overview - Wheat Information System (Cyril Pommier) – How can we share data in the Wheat Community? What input is required from the phenotyping community? How can we establish and adopt standards?
4. Presentation and Discussion: Durum germplasm panel (Roberto Tuberosa) – How can the phenotyping community assist in evaluating core collections and sharing of phenotypic data?
5. Presentation: International Plant Phenotyping Network (Roland Pieruschka) – Current Status, Working Groups, Database, How can you get involved

EWG members only – Phenotyping and AWAS

6. Tour de Table
7. AWAS Introduction (Fernanda)
8. Previous EWG meeting
 - 8.1. Meeting report (both EWGs)
 - 8.2. Outstanding actions
9. Progress on the EWG Action Plan
 - 9.1. Update Rabat course
 - 9.2. Where to next? Initiatives, ideas for dissemination and education
 - 9.3. Report from Liaisons with other EWGs
 - 9.4. Presentation and Discussion: Quality EWG – What is it about? How can we interact? (Tatsuya Ikeda and Fernanda Dreccer)
10. Update on WI and HeDWIC (P. Langridge)
11. Next EWG meeting – suggestions for date and place
12. AWAS discussion on how to best get organised to become an active practising community

MEETING REPORT

1. Overview of Wheat Initiative - Peter Langridge

- G20 initiative, where countries become members
- Representatives of country specific funding agencies are represented in ICC (e.g. BBSRC, BMBL, GRDC)
- Research Committee with representative from each country
- Overall goal to establish global research agenda for wheat with key priorities → Strategic Research Agenda, released in 2015, not to be seen as static document but regularly updated
- It is worth to refer to SRA in grant applications to highlight research priorities that have been identified by international community
- Recently changes in Wheat Initiative since Helen Lucas resigned and key staff left
- There will be a web survey to seek feedback about future structure and direction of WI
- WI is aware that education and training has been neglected until now

Actions: All EWG members are strongly encouraged to take part in Wheat Initiative Survey

2. WheatIS – Cyril Pommier

- WheatIS is developing numerous tools for data annotation and sharing (see attached slides)
- Important aspect will be to encourage community to annotate, publish and share their data
- WheatIS can help with data sharing
- WheatIS will organise workshop at CIMMYT in Mexico on data upload and sharing

Actions:

- WheatIS to provide details on course in Mexico on data publication through WheatIS
- Possibility of publishing Mexico course online to be investigated

3. Durum Reference Core Collection – Roberto Tuberosa

- The Durum Wheat EWG assemble a core set of lines
- There will be different subsets selected for height and phenology
- Seed will be ready for distribution to community in 2018

4. International Plant Phenotyping Network – Roland Pieruschka

- IPPN started in 2015 as non-profit academic association
- Responsible for organising IPPS, 5th IPPS to be held in Adelaide in October 2018
- Members are research institutions, not individuals
- Reduced membership for developing countries
- Industry membership options to be finalised
- IPPN host several Working Groups, many of which are relevant to wheat research
- Numerous possibilities for collaboration between IPPN and Phenotyping EWG

5. Previous meeting report and progress on Action Plan

- Liaisons between Phenotyping EWG and other EWGs were nominated to provide updates and direct interaction with other EWGs
 - Durum – see presentation by Roberto
 - WheatIS – see presentation by Cyril
 - NUE – large workshop in Rothamsted in May to discuss future international initiatives comparable to IWYP
 - Quality –Fernanda and team preparing a review on Phenotyping reproductive growth for the IPPS special issue in Plant Science.

- Decision to support a phenotyping course alongside breeders course at ICARDA in Rabat (see below)
- To facilitate courses in the future, it would be important to know about existing courses for breeders, ECRs or postgraduate students
- A database with possible course presenters would help to organise future courses
- Material already available from similar/previous courses and seminars could be made publicly available and distributed more widely, this would be best done in collaboration with IPPN

Actions:

- Establish database with possible course presenters, either through survey of EWG members or WheatVIVO (Bettina to explore best option)
- Peter Langridge to advise on other potential courses run by e.g. Gates Foundation
- Bettina and Fernanda to discuss next year's ICARDA course with Tadesse (to be run in April)
- Fernanda to enquire with Jagadish Rane about potential courses run in India
- Fernanda to liaise with Uli to put together a list of available tools for seed phenotyping
- IPPN to send out request for available course material/slides of phenotyping that researchers are happy to share (→ email was sent out by IPPN on 27th April; see below)

6. Update on Phenotyping course at ICARDA

- Due to short timeline (budget allocation in February, course in April) and overlap with Vienna Conference, we engaged a consultant, Alistair Pask, to provide part of the training, remainder was provided by PhD student of Jose-Luis Araus (University of Barcelona), Adrian Romero.
- 20 participants from 9 countries: Afghanistan, Ethiopia, Egypt, Sudan, Jordan, Iran, Nigeria, Turkey, Morocco sponsored by ICARDA.
- Topics covered in 2-day unit:
 - 1-Breeder-friendly phenotyping applications (Alistair Pask)
 - 2-Affordable remote sensing alternatives for stress detection in wheat (digital imaging, NDVI, etc.) with hands-on on software and image interpretation (Adrian Garcia Romero, University of Barcelona).
- The overall feedback was very good: “we had the opportunity to use cheap phenotyping tools that we can apply in our countries” (quote from the final evaluation of the course)

7. Next meeting

- Possible events – 5th IPPS, October 2018, Adelaide
- Others suggestions to be collected by email