CIMMYT Australia ICARDA Germplasm Evaluation (CAIGE) Annual Meeting

Meeting Minutes

March 17, 2014

1) Meeting Opening

Richard Trethowan, project leader for CAIGE, welcomed all parties to the meeting and explained that the CIMMYT and ICARDA breeders could not make the trip to Australia at this time due to other commitments in Mexico. The invited speakers gave brief presentations about their project achievements, and upcoming project activities as required by GRDC. All presentations can be downloaded from the CAIGE website :
caigeproject.org.au >> CAIGE Community >> Annual CAIGE Meetings >> Wheat 2014 Meeting

2) US00045 project: CAIGE Suite of Projects Coordination – Sandra Micallef (University of Sydney)

Sandra Micallef gave a summary of the project's activities over the previous 12 months including details of the imported material and where it was distributed. All data generated from material testing and screening can be found on the CAIGE website.
The CAIGE website is the main location where all data from projects that fall under the CAIGE Suite of projects, can be found.
Sandra Micallef's Presentation

3) 2013 Yield Data trials – Mark Dieters (University of Queensland)

Dr Mark Dieters, who has been responsible for designing and analysing data from the 2013 CAIGE Yield trials, gave a presentation with results from the multi environment trials. From the analysis it could be seen that both ICARDA and CIMMYT nurseries had material that performed well at all sites.
Dr Mark Dieters's Presentation

4) CAIGE Project review Report – Omid Ansari (GRDC)

Omid Ansari from GRDC gave a summary of current projects' statuses:-

CIMMYT
- CAIGE Alliance Agreement (2013/14 – 2018/19)
- CIMMYT wheat International Nurseries (in process to be finalised)
- Wheat SBP project (Crown Rot and Root Lesion Nematode)
- Durum – Yield Potential, drought & Biotic

ICARDA
- Wheat – heat & terminal drought
- Durum – Mineral toxicity (finalised)
- Barley – abiotic and biotic stresses
- Chickpea – abiotic and biotic (salinity & drought, cold temperatures)
- FIGS – All crops

ICRISAT
- Chickpea- helicoverpa
- Chickpea-drought

AUSTRALIA
- Coordination/database (USYD & UQ)
- Quarantine (NSWDPI)

Other related projects
- Resource seed international (Sanjaya Rajaram)
- High yield, heat tolerance material from India
- Chinese material

5) CIM00015 project: Enhanced delivery of CIMMYT germplasm to Australia – Julie Nicol on behalf of Ravi Singh (CIMMYT-Mexico)

Dr Julie Nicol delivered a presentation on behalf of Dr Ravi Singh, who could not attend the meeting. The presentation focused on showing results from CIMMYT's yield trials and disease screening of the material sent to Australia. These results show significant progress towards increasing grain yields under, irrigated, drought and heat stress environments. They also show that there had been a significant enhancement in the resistance to stripe rust, leaf rust and various leaf spotting diseases, all of which will benefit the Australian breeding programs.
Dr Ravi Singh's presentation

6) CIM00014 project: Identification and utilization of novel sources of resistance against soil borne pathogens in wheat – Julie Nicol on behalf of Amer Dababat (CIMMYT-Turkey)

Dr Dababat's presentation gave a description of the processes followed for screening spring wheat, durum wheat and landraces. For spring and durum wheat, each process starts with screening 200 lines, which are then reduced to 20 ~ 50 lines. These lines are then crossed to high yielding Crown rot resistant CIMMYT parents and Australian well adapted lines, in consultation with Australian breeders.
Dr Dababat also gave a summary of some results from association mapping of CIMMYT's winter wheat and spring wheat. At the time of the meeting, it was not possible to distribute Dr Dababat's presentation as the results had not yet been published in other documentation.

7) ICA00009 project: Enhancement of yield and yield stability of spring bread wheat targeted to semi-arid Mediterranean areas – Richard Trethowan on behalf of Tadesse Wuletaw (ICARDA)

Dr Wuletaw's presentation gave an update of the latest developments at ICARDA in Northern Africa after the transition from Syria. All material from Aleppo (Syria) has now been transferred to Morocco and Tunisia. Shuttle breeding between Lebanon and Ethiopia is in full operation and yield trials in established sites have been carried out. Material for International nurseries and

yield trials is being distributed to 40 countries in the Central Western Asia and North Africa regions (CWANA). Results from yield trials and disease resistance were also shown.
Dr Amer Dababat's presentation
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8) Feedback from wheat breeders – Michael Quinn (LPB) on behalf of Australian Wheat breeders

Australian breeder Michael Quinn was asked by the CAIGE management team, to gather feedback on the CAIGE project from the Australian breeders. A set of questions was asked to each company on

- what impact the project is having on their breeding program,
- what value are they getting out of it
- how are they using the CAIGE material in their program
- how is the CAIGE project contributing to their research

Five from the eight breeding companies approached, gave a good response to the progress of the CAIGE project. The broad response was that the CAIGE project is adding value to their breeding programs and that the project is being run well. They also said that the breeder tours to CIMMYT and ICARDA are very important to them but it would be good to extend the trips to breeding stations other than Obregon (Mexico) and Aleppo (Syria).

This also generated a discussion among the breeders present:-
The question was asked as to whether there is value in bringing CIMMYT and ICARDA breeders to Australia each year for the Yield Trials tour. Dr Richard Trethowan and Dr Ian Edwards supported the decision to bring the breeders over each year as they could take notes of what they look for in the material and what concerns they have. Dr Lindsay O'Brien commented that the material we receive should be targeted for Australian environments and market to extract maximum value.
Michael Quinn's presentation

9) Prebreeders report – Andrew Milgate (NSWDPI) on behalf of Australian pre-breeders

Andrew Milgate was also asked by the CAIGE management team to gather feedback on the CAIGE project from the pre-breeding community. The general feedback was that the CAIGE project provides important resources for additional resistance to diseases and it is also crucial to broaden the genetic diversity in fighting these diseases.
Andrew Milgate presentation

10) Breeding Management System (Demo) – Angela Pattison (PBI Narrabri,USYD)

Angela gave a demonstration of the Breeding Management System which is now being used at CIMMYT.
Angela Pattinson presentation

11) Barley CAIGE project – Mark Dieters (University of Queensland)

Dr Mark Dieters, who is the project leader for the Barley CAIGE project, gave a presentation with updates on the barley material received from ICARDA. Seed increase will be done at Gatton and Warwick this year, for yield trials in 2015. There will also be some phenotyping for disease resistance done, depending on the seed amount available.
A group of Barley breeders will be travelling to ICARDA in April. This visit will be organised every second year.
Mark Dieters Presentation

12) Quarantine project – Greg Grimes (AWCC, DPINSW)

Mr Greg Grimes gave a summary of the number of lines which are currently in quarantine. These lines will be sent to Narrabri for seed increase in June/July. All material that was at the AWCC genebank has now been transferred to Horsham. In the new quarantine project, the wheat and barley material will still be quarantine at AWCC, but chickpea and pulses material will be quarantined at AGG (Australian Grains Genebank). Seed distribution to breeders for yield trials and to prebreeders for disease screening will now be done by AGG. Each seed delivery will be accompanied by an SMTA document.
Greg Grimes presentation

13) Additional projects

A number of speakers were asked to present their work on GRDC-funded projects during the CAIGE meeting.
Livinus Emebiri – Managing on-farm biosecurity risk
Timothy March – Trait discovery in wild barley
Aladdin Hamwieh – Chickpea breeder report

14) Discussion

a) 2013 CAIGE Yield Trials

There will be 6 trials with CAIGE material this year, and the breeders agreed on the following setup:
USYD : Narrabri
AGT: Roseworthy
Intergrain: Kalkee
LPB: Junee
Intergrain: Mukinbudin
EdStar Genetics : Toodyay

The Australian variety checks to be used in the trials are : Yitpi, Axe,Gladius, Livingston, Crusader, EGA Gregory, Magenta, Mace, Scout, Emu Rock (replacing Wyalkatchem) and Suntop (replacing Lincoln) – these are unchanged from last year.
The seed for the trials will be sent to the breeding companies in the coming weeks. **Action Point: Sandra Micallef, Brett Lobsey**

The annual CAIGE Yield Trials tour will be held in mid to late October. It has been confirmed that CIMMYT breeder Ravi Singh and ICARDA breeder Tadesse Wuletaw will be joining the tour of

the trial sites in October 2014 and all members of the Australian breeding community are welcome to join the tour.

b) Durum

Post-quarantine durum seed will be sent directly to the durum breeders for seed increase. (Gururaj Kadkol and Jason Able) **Action point: Sandra Micallef**

c) Material for distribution

A list of material selected by breeders during the 2012 visit to Mexico, is now available and will be distributed to breeders. **Action point: Sandra Micallef, Brett Lobsey**

d) Next Annual Meeting

The next CAIGE annual meeting will be held in March 2015 during the Wheat Breeders' Meetings week. Location to be advised.

The meeting closed at 5.30pm.