

BARLEY CAIGE

Barley Breeder's Meeting

March 2015, Adelaide



Barley CAIGE Project

- GRDC has supported the coordinated introduction and evaluation of bread wheat from CIMMYT for over 10 years (and more recently ICARDA) under the CAIGE project (www.caigeproject.org.au)
- CAIGE = CIMMYT-Australia-ICARDA-Germplasm-Exchange
- The 2012 review of the CAIGE project recommended the extension of this model to other GRDC crops, specifically durum wheat, barley and chickpeas
- The Barley CAIGE project commenced in July 2013, under 5 year funding arrangement with GRDC
- GRDC is also supporting a companion project in ICARDA



Barley CAIGE

- The project will import up to 150 selected lines and landraces from the ICARDA each year, management the quarantine, disease screening, preliminary yield testing and distribution of these lines to breeding companies and researcher in Australia.
- All information and data pertaining to these lines will be made publically available through the project website
 - Currently includes information on lines imported into Australia in 2013
 - Will be progressively update as more information becomes available



Barley CAIGE

- Specifically the project will import annually
 - International Barley Yield Trial (High input conditions, includes malting varieties)
 - Global Spring Barley Yield Trial (Low Input)
 - Selected lines (primarily 2 row types) from across ICARDA nurseries and preliminary evaluation trials
 - Landraces selected for multiple disease resistances plus heat/drought tolerance



Barley CAIGE

- ICARDA is currently in transition from its base in ICARDA to Morocco
 - International nurseries will continue to be distributed from Lebanon
 - Genebank staff and working collection is being moved from Syria to Morocco
 - New barley breeders appointed over the last 18 months (now based in Morocco)
 - ICARDA is making significant investments to upgrade infrastructure and research stations in Morocco in partnership with IRNA Morocco



Barley CAIGE Yield Trials

- Seed from 2013/14 imports:
 - Naked barleys – mostly 6 row (18 of 22 lines)
 - Winter barleys – 5 only (remainder put through quarantine again 2014 winter)
 - High Input Barley Yield Trial – 23 lines (14 are 6 row)
 - Low Input Barley Yield Trial – 22 lines (9 are 6 row)
 - Global Spring Barley Yield Trial – 124 lines (80 are 6 row)
- Yield trials – UA and Intergrain agreed to establish up to 600 plots, Edstar Genetics up to 240 plots for collaborative yield trials each year, and AGT has also agreed to participate. Project will also establish one trial in north (at Narrabri).
- ICARDA have requested that we evaluate all lines in the spring barley yield trials each year



Barley CAIGE Yield Trials

Suggestion for discussion:

- Include all lines in the two international yield trials (45 lines)
- Include only the 2 row types from the global spring barley screening nursery (44 lines)
- Include some of the 6 row types?
- Checks (some/all off): Barque, Baudin, Buloke, Capstan, Commander, Compass, Fathom, Gairdner, Hindmarsh, Keel, LaTrobe, Schooner, Shepherd, Skipper and Westminster, plus ICARDA check Rihane-03
- Two reps of each of the ICARDA lines – approximately 240 plots per trial site



CAIGE Barley Yield Trials

- Trial locations? Number of sites?
- Checks?
- Replicated or partially replicated or replicated checks?
- Data – yield, plus? NIR? Screenings? TWK?
- Malt quality? ICARDA has requested malting data if possible.



CAIGE Barley Phenotyping

- Additional phenotyping what are priorities?
 - Scald
 - Net blotch
 - Spot blotch
 - Powdery mildew
 - Leaf rust
- Which lines? All?



Germplasm Distribution

- Seed for collaborative yield trials (40g/plot ?)
- Minimum 5g sample of all lines (on request)
- AGG will distribute all germplasm
- Requires organization to sign sMTA (only once for the 5 years of the current CAIGE project)
- Recipients are expected to return data to the CAIGE project.



Morocco 2014

- Project supports exchange visits with ICARDA.
- Travel to ICARDA every second year (2014, 2016, 2018)
- ICADRA breeders to visit Australia in alternate years
- First visit is to Morocco in April 2014
 - Mark Dieters
 - Stewart Coventry
 - Reg Lance
 - Livinius Emebiri
 - Davinda Singh
 - (Richard Trethowan)



Morocco 2014



Morocco 2014



Morocco 2014



Morocco 2014

