

## WERA1009 Meeting Notes

Scottsdale AZ - January 24, 2013

1. Introduction – Russ Karow
  - a. Project overview
  - b. Project award receipt
  - c. Officers for 2013 – Andrew Ross (OSU), Mike Pumphrey (WSU)
2. Reports
  - a. Montana – Dale Clark for MSU
    - i. Vida – number one variety, semisolid stem for stem saw fly
    - ii. “green gene” in all – stays green longer – don’t know specific cause
    - iii. As part of Wheat CAP – has done backcrosses to West Bred and Syngenta material
    - iv. Saw fly and Hessian fly – with no-till are seeing greater levels of incidence
  - b. WSU - Aaron Carter
    - i. Commodity commissions and university are cooperating in providing the funding for and hiring of new faculty – endowments and support for state funding through the legislature
      1. Bioinformatics center
      2. Biosensor engineering – drought resistance measurement
      3. Crop physiologist
      4. Quantitative geneticist
      5. Will refill wheat quality position
    - ii. Breeding – Campbell, Carter and Pumphrey - Stacking of gene resistance key and end use quality are primary objectives
    - iii. Crop status is good; stripe rust – seems to be lesser problem this year
    - iv. Quality – Byung-Kee Baik has taken a new position in Wooster OH
      1. Lab has been doing work on sponge cakes and particle size effect in whole grain flours on products – truly whole grain with embryos included
  - c. WSU – Gill
    - i. Two gene Clearfield – WA8143 likely to be released
    - ii. Reworking dwarfing genes – look at new dwarfing sources in order to maintain gibberellic acid levels in plants
    - iii. Doing drought tolerance as part of international effort
  - d. Idaho – Juliet Winds, Jianli Chen
    - i. New positions
      1. Cropping systems southern ID
      2. Cereals agronomy at Parma and Moscow

- 3. Crop Physiology
    - 4. Crop entomologist - wireworm has become a major issue
  - ii. Crop – dryland poor, irrigated good
    - 1. Fusarium head blight 30-40% in some fields
  - iii. Varieties
    - 1. Production down due to corn and spring barley
    - 2. UI Stone – dryland and irrigated – fusarium head blight resistance
    - 3. Two lines in process of release
    - 4. Part of Triticeae CAP – drought tolerance testing
  - iv. Lima Grain collaboration is one-year old and working well
- e. Janice Cooper – CA
  - i. Declining resources as well. Wheat commission has increased funding to breeding program; mini-grants to farm advisors; providing funds for half a wheat/barley position
  - ii. Anti-wheat messages - Is working with Wheat Foods Counsel to do education efforts
  - iii. Doing baking collaborative for whole grain flour use
  - iv. Bread wheat up, durum 40% down due to market prices
- f. Scott Haley/ John Stromberger – Colorado
  - i. New HWW – Antero (mountains over 14,000 ft used in naming)– acreage of HWW could be up to 5-6% - working with ConAgra on marketing – 15% yield drag on average so premium will have to be significant to off-set
  - ii. Above average crop 2012 – three weeks early – 2013 extremely dry
  - iii. Stripe rust changes in virulence patterns have taken out major varieties
  - iv. Stem fly is an issue – solid stem and attractant work is underway
  - v. Crop physiologist hire in progress as well – 9-month position with teaching
- g. West Bred – Dale Clark
  - i. Popular varieties dominant in WA and S Idaho - trifecta blend of top three has done well
  - ii. Releasing two soft white springs – early and Hessian fly R needed as well as stripe rust resistance vs older types
  - iii. Jason Cook – trait integrating position – marker assisted backcross program
  - iv. Quality lab is developing NIR techniques for sedimentation value determination

- v. Company is now “chipping” all F2-3 populations to check for specific markers – can do 50 markers at time and only plant those with desired traits – not inexpensive so will need to determine traits on which to focus
  - vi. Are applying for utility patents for all materials
  - vii. PVP – do this at early generation as soon as looks like there is promise in a line
  - viii. Company is looking at 1-2% gain in yield each year once program is fully operational
- h. John Moffitt – AgroPro Wheat (Syngenta)
- i. SY Steelhead – HRS – held up to stripe rust, good end use quality
  - ii. Increased investment in wheat in PNW operations – was historically an “other” crop in Syngenta and is now a global crop category – there are increased expectations for performance
  - iii. Hybrid effort once again – PNW, Plains and SE – will hire hybrid breeder – marker technology to maximize heterosis – CMS system
  - iv. Also hiring trialing managers to optimize data roll out – each location will have trial manager and will also have national level person
  - v. Also hiring product evaluators – will have been rough cut on yield and agronomy and then pass off for release – will try to optimize agronomy
  - vi. Syngenta also looking at 1-2% gain in yield
- i. Wheat Marketing Center – Gary Hu
- i. Six quality workshops for growers
  - ii. Numerous self-funded programs for specific product development
  - iii. General public educational workshops – more than 40
  - iv. Four visiting scientists – China (2X), S Korea, Nigeria (government mandate to include cassava flour in all wheat products)
  - v. Are patenting processes – most cases owned by sponsoring company, some co-owned
- j. Western Wheat Quality Lab
- i. Personnel – Brian Beecher left for Kansas City
  - ii. Budgets – all vacancies held open until budgets are finalized
  - iii. Puroindoline work continues, color methods for arabinoxylans
  - iv. Flavor work – mouse preference studies
  - v. Have soft durum patent claim that has been allowed
- k. Limagrain – Jeron Chatelain
- i. Made through first year in collaboration with UI
  - ii. New UI positions are coming through Limagrain agreement
  - iii. Have increased on-the-ground footprint

- I. OSU – Ross/Rowe
  - i. Four new varieties – Kaseberg, Ladd, Roselyn, Bobtail
  - ii. Unique findings in improved quality from crosses where this would not be expected
  - iii. TK Kongraksawech replacing Caryn Ong as quality lab manager
  - iv. Ave yield 65 bu/a vs long-term average – acreage down due to grass recovery and corn; overall acres down
  - v. Are starting process to replace Dan Ball, weed scientist, at CBARC
  - vi. OWC and OSU engaged in discussions about sustainable funding models given likely continued decline in state and federal funding
  - vii. Quality
    - 1. falling numbers – genetic influences on protein, starch
    - 2. working with genetics faculty on issues related to flour aging, falling numbers, etc.
    - 3. rapid turnaround in breeding materials is needed – six week window – have been successful at early generation selection for quality
- 3. General hard white discussion
  - a. Discounts for HRS but none for HWS – pay nearly similar for HRS – treating as single class at this time – winter and springs comingled – contracted and so bought regardless of protein content. Industry will need to decide as the market grows whether separation is needed
    - i. Klassic still big, people have learned how to grow
    - ii. Juan Li Chen – 50% HW effort – south Idaho has significant production – mostly export but domestic use increasing
- 4. AACC Meeting
  - a. Sponge cake testing improvements – Byung-Kee Baik
    - i. Sponge cake is a major use of PNW soft white wheat exported to Asia – high value end product
    - ii. Simpler testing techniques with less potential for human error are needed but also procedures with high correlation to old procedure
    - iii. Frozen eggs can be used as well to homogenize process
    - iv. Non-baking method – simple flour-water mix with flow distance – may have possibilities
  - b. The Evolution of Grain Quality form the Importer’s Perspective – Koji Murakami, Manger Quality Control, Nisshin Flour Mills
    - i. Nisshin is the largest Japanese wheat miller
    - ii. US > 50% of Nisshin market, SWW about 25% of this total

- iii. Uniformity is key, Canadian CWRS is major competitor to HRW less so HRS
- iv. Changing specifications are problematic, consistency is the key
- v. Food Safety – consumer concern – allergens, GMO, contaminants, chemical residues
  - 1. Contaminants – buckwheat, soybean, treated seed
  - 2. Some concern about heavy metals specifically Cd
- c. Factors Affecting Falling Number Results – Andrew Ross, OSU
  - i. Hypothesis – low protein per se may cause low FN
  - ii. Due to flour proteins per se though there seems a grain protein correlation
  - iii. May need to fertilize to reduce falling number risk if low protein
- d. Towards A Better Understanding of Low Falling Numbers in Spring Wheat – Jianli Chen, UI
  - i. Saw temperature x moisture interaction
  - ii. Could perhaps add moisture to dry grain to test for sensitivity to low FN
  - iii. Could perhaps differentially harvest during grain fill to estimate Fn potential
- e. Branscan – UK company – Aytun Erdentug
  - i. determining bran and aleurone content of flours and quality
  - ii. underlying question “Does ash have some relation to grain quality?”
  - iii. There are companies producing high grade aleurone
  - iv. Perhaps use bran as a replacement measurement for ash
- f. HRS targets in PNW - new standards were adapted