CALIFORNIA CROP IMPROVEMENT ASSOCIATION
ANNUAL MEMBERS MEETING
Prato Room, Parsons Seed Certification Center
UC Davis campus
9:00 a.m. May 27, 2010

1. Call to order – Vice-President Tom Hearne

2. Roll call – Executive Director Larry Teuber

Directors present:	John Palmer	**CCIA:**	**Honorary Member:**
Kent Bradford	Frank Saviez	Larry Teuber	Bob Simas
Frank Carl	Chuck Schonauer	Bob Stewart	
Jack De Wit	Chris van Kessel	Nicole Hostert	**Guests:**
Ed Eggers		Mary Voorhees	James Cubbage
Andrea Fox	**Directors absent:**	Pablo Guzman	Jorge Dubcovsky
Glenn Hawes	Bob Baglietto	Timothy Blank	Dan Putnam
Tom Hearne	Ray Johnson	Alex Mkandawire	L.W. Gallagher
John Heaton	Glenn Powell	Kitty Schlosser	Mike Davis
Jim Hill (arrived 10:15)	Mary Wadsworth		Carl Old (by phone)
Shannon Mueller			

3. Minutes of previous meeting
   It was ***moved, seconded, and passed*** to accept the minutes as received in the packet.

4. Additions to agenda – Tom Hearne
   None

5. Agency Directors
   Hearne thanked Frank Carl for his years of service. He will be retiring this year. A new representative for the Agricultural Commissioners will be appointed.
   All the other current directors have been reappointed:
   California Farm Bureau Federation – Andrea Fox
   California Dept of Food & Ag – John Heaton
   California Seed Association – John Palmer
   UC Cooperative Education – Shannon Mueller
   UCD, College of Ag & Environmental Sciences – Jim Hill
   UCD, Dept of Plant Sciences – Chris van Kessel
   Seed Biotechnology Center (*ex officio*) – Kent Bradford
   It was ***moved, seconded and passed*** to accept the agency directors as noted.

6. Nomination and election of board officers – John Palmer
   Palmer reported that the nomination committee members – Palmer, Glenn Powell & Chuck Schonauer – recommend the same slate of officers for 2010-11:
   President – Ray Johnson
   Vice-President – Tom Hearne
   Treasurer – Glenn Hawes
   All directors accepted the nominations. It was ***moved, seconded and passed*** to seat the officers as noted.

7. Research reports were presented for research funded in 2009-10 and requests for funding in 2010-11. The abstract from each proposal is included below as a description of their presentation.
   a. Jorge Dubcovsky reported on two programs:
      1) "Development of Wheat Varieties for California" continuing research
         He requested funding to continue this program. He recently received a UC Discovery grant for $816,000 for 4 years and he relies on the CCIA funding in order to continue his research. The overall objective of the UC wheat breeding program is to develop common and durum wheat

varieties adapted to different California environments. The specific objectives are 1) introduce new sources of disease resistance and end-use quality characteristics; 2) create new segregating populations by hybridization and select the best lines using field based selection; 3) determine the genetic basis for stripe rust and *septoria tritici* blotch resistance and develop markers to accelerate the introduction of these genes into breeding lines adapted to different California environments; and 4) produce Breeder's seed of the best lines targeted for variety release. The field-based selection program will be complemented by marker assisted selection (MAS) to accelerate the introgression of valuable traits. MAS efforts will be focused on the pyramiding of slow rusting resistance genes *Yr36* and *Yr18* and two QTLs for partial resistance to stripe rust previously discovered in his laboratory. He will continue the introgression of *septoria tritici* blotch resistance genes *Stb3*, *Stb4*, and *Stb7* and improve the current molecular markers for *Stb3*. As part of a preventive breeding effort, he will incorporate sources of resistance to the stem rust race UG99. These resistance genes will be pyramided into high-yielding, high-quality varieties using MAS.

2) "Evaluation of Small Grains in California" continuing research
The requested funding will be used to support the Regional Cereal Evaluation Program (previously directed by Dr. Lee Jackson). Evaluation Tests for common wheat, durum wheat, triticale, and barley will cover the major small grain-producing areas of California. Nurseries of advanced breeding lines and new and standard cultivars obtained from public and private breeding programs will be evaluated in representative environments in the Sacramento, San Joaquin, Imperial, and northern intermountain valleys, and south-central coastal foothills. Additional nurseries of elite germplasm from the UC wheat breeding program will be evaluated in selected locations to help accelerate the development of public cultivars. Nurseries will be grown using production practices appropriate for each environment. The performances (yield, agronomic characteristics, disease, and pest reactions, grain quality) of the entries will be documented. The resulting information will be used to help identify areas where new cultivars are best adapted and as supporting data for justifying the release of advanced breeding lines (from both public and private breeding programs) as cultivars.

b. Dan Putnam reported on his continuing research "Alfalfa Experimental Variety and Germplasm Adaptation and Evaluation".

This program is very important to the growers in California as it provides a clearing house for yield trail data that can be used to assist growers in making informed decisions when choosing which cultivar to plant. Ongoing variety research is conducted to assure good public data for farmer choice of optimum variety, and to allow companies to improve their lines and independently prove their worth. In 2009, he moved to establish a new salinity-tolerance trial at West Side Field Station, and to establish a new yield trial at Lancaster, making 9 locations. This state-wide alfalfa variety testing program is the most comprehensive in the US, and has been of tremendous value to alfalfa growers and seed companies in California. This program includes both released lines and experimental cultivars. Funding goes primarily towards support for an SRA (Craig Giannini) at Davis and support at field stations, for labor, travel, and data analysis to handle greater than 10,000 yield observations each year. The CCIA funding is a key component of these state-wide variety trials. He has calculated the economic advantage to the state's alfalfa growers to be on the order of $100 million/year. Without this funding, he could not continue these trials. He anticipates managing 9 trials during 2010-11, harvested up to 10 times/year. Locations are Tulelake, Scott Valley, Davis, Parlier, Five Points, Lancaster and El Centro. New trials will be planted in the fall at Kearney Ag. Center (Parlier) and Tulelake (if water is available) in 2010 to replace existing trials. Results of these trials are reported at: http://alfalfa.ucdavis.edu. Variety choice and improvement continues to be of vital interest to growers and seed producers in California. He requested funding to continue this program.

c. Lynn Gallagher reported on two programs:

1) "Oat Improvement for California" continuing research
Barley yellow dwarf virus and cereal yellow virus are problems to be overcome. Minnesota and Illinois have been cooperating with the program. Also, Florida and Australia have helped. Aphids are a huge problem. This project will improve oats by traditional breeding methods through the creation and evaluation of new segregating populations and the selection of

advanced lines which have potential for release as cultivars in diverse California environments. The breeding program will emphasize forage varietal improvement with selection for earliness to heading/maturity and for resistance to the most important oat diseases, namely, barley yellow dwarf (BYD) and cereal yellow dwarf (CYD), both of which cause leaf reddening/yellowing and stunting. Resistance to crown rust, stem rust, and leaf blotch diseases will also be sought. Selection for grain yield is of secondary importance. Additional agronomic improvement will emphasize culm thinness, stature and resistance to lodging. Until two years ago, no new hybridizations for oat improvement had been made in the last twenty-two years in California. Eight new varieties recently were released by the University of California, Davis, after 25 years of sporadic breeding efforts. The popular oat variety Montezuma, the only early variety in use, was released 40 years ago and is highly susceptible to red leaf, crown rust, stem rust, and leaf blotch. No replacement for Montezuma has been bred. About 240,000 acres of oats were harvested in California in 2009, which is about half the breadwheat acreage. He requested funding to continue this program.

2) "Breeding Malting Barley for California"
Last year he predicted that he could develop 2-row malting barley in one growing season. He fell short due to CYD in the field. Malting quality is very high and acceptable by the industry. Disease resistance is needed so at least one more growing season will be required. New opportunities exist for barley production in the Central Valley of California, especially for high quality malting barley free from Fusarium head scab which plagues upper Mid-west malting barley production**.** Malting barley germplasm development at UCD is supported by Anheuser-Busch-Inbev (BARI) and by the American Malting Barley Association (AMBA), but neither organization encourages varietal development. Both benefit from the development of disease resistant germplasm. US malting barley production is concentrated in Idaho, Montana, and North Dakota. California produces little or no malting barley, except by contract in the Klamath Basin, but California produces and consumes more beer than any other state. All malt used in California is imported by brewers. Because malt houses are built in areas of malting barley production, no malt houses exist at this time in California. California growers must be capable of producing sizeable amounts of malting barley before a malt house will be built. Many brewers, such as Coors and Sierra Nevada, use only two-rowed barley but other large brewers such as Anheuser-Busch-Inbev, also use six-rowed. Two-rowed barley moves in international trade but very little six-rowed barley is found in export markets. Malting barley may be produced with annual rainfall in a sustainable way without irrigation. Development of malting varieties adapted to Central Valley growing conditions requires a long term commitment because of the great number of characteristics desired by the industry. Some progress has already been made. He requested new funding for this program.

d. Mike Davis described his new proposal "Range of *Fusarium oxysporum* f. sp. *vasinfectum* race 3 in Cotton".

Mike has worked with fusarium wilt of cotton for several years and he thought this research was finished until several weeks ago. At least three genotypes of *Fusarium oxysporum* f. sp. *vasinfectum* race 3 currently exist in California. Based on his greenhouse pathogenicity tests and field observations, all genotypes of this race cause mild symptoms on popular cotton cultivars grown in California today. In other parts of the world, however, it causes serious losses in certain susceptible cultivars. In his preliminary trials, at least one genotype of race 3 infects tomato as well as cotton, unlike other races. He proposes to investigate the full host range of race 3. He has not requested funding from the cotton association. He requested new funding for this program.

e. Carl Old reported for Gerald Higginbotham for their proposal "Estimation of metabolizable energy, rate, site and extent of degradation of alfalfa from NIR spectrum".

In order to determine more accurately alfalfa quality, methods based on the interaction between plant and the animal consuming that plant are required; metabolizable energy is such a predictor. A study is currently underway to determine metabolizable energy content of alfalfa hay grown in California based on near infrared spectral analysis. A diverse sample of alfalfa hays was collected during the 2008 growing season, fed to wether lambs to determine metabolizable energy. Further studies are underway to evaluate the relationship between metabolizable energy of alfalfa hays and near infrared spectrum. It is his goal to accurately predict ME from the NIR spectrum. They

propose a new way to measure the quality of alfalfa hay to replace the industry standard TDN system which does not work well to measure nitrogen. He requested new funding for this program.

f. Cal Qualset did not attend to describe his new research proposal "Genetic Resources of Wheat, Barley, and Oat for Public and Private Breeders", however, his abstract is included.

This project, over a two-year period, will document and prepare for distribution to public and private breeders genetic resources of wheat, and to a limited extent barley, that have been developed at UC Davis over a period of some 30 years. In addition, new wheat lines having vernalization requirement will be advanced from some 6,000 F4 lines and made available to public and private breeders for selection. Field grow-out of the various groups of materials: [(1) congenic lines affecting leaf canopy structure, seed protein variants, plant height, tillering and spike variation, (2) disease resistance, (3) molecular mapping populations, (4) Iranian wheat landraces, (5) barley composite crosses, and others] will be conducted to produce seed and additional characterization data. The results will be prepared for publication and entry to national and international databases. Seed will be offered for distribution to researchers and to the USDA National Small Grains Collection. Registration of several varieties, germplasm, and genetic stocks by the Crop Science Society of America will be published in the *Journal of Plant Registrations*

8. Executive Director Report – Larry Teuber

Teuber provided an overview of the past year at CCIA.

- There have been some personnel changes: Bob Simas retired in June 2009 and Nicole Hostert was hired in November 2009. Nicole has a BS in Crop Science and Management and a MS in Integrated Pest Management. Her responsibilities include the CCIA grow outs and the OECD precertification and post control grow out program as well as field inspections and seed certification verification.
- The CCIA noted an increase in the number of applications to produce certified seed, number of acres grown, and pounds of seed certified in 2009. Currently, the number of applications received for 2010 is similar to last year.
- He noted that CCIA received an increased number of requests for recertification of certified lots (Cert-to-Cert) many of which have been denied because the requests do not meet the AOSCA standards. Recertification is an emergency provision covering extreme conditions (*e.g.* frost damage, flood). Lack of foresight in the maintenance of seed stocks does not constitute an emergency.
- Perennial crop renewal applications were due March 1st and were processed online.
- There has also been a disturbing trend of applications for breeder to certified production – with no foundation seed produced. This has especially been prevalent in alfalfa and cotton.
- A Standard Operating Procedure (SOP) has been developed to standardize criteria for blending lots of seed of different varieties of one crop type. The SOP has been reviewed and approved by Dr. Richard Payne, USDA-AMS. Important aspects of the SOP are clearly defined criteria for approval of a varietal blend, a requirement for tags to include a statement that the seed is a blend of certified seed, and that tags issued for seed produced under the jurisdiction of more than one agency clearly state that it is interagency certification and list the states/agencies participating.
- The potato certification program is stable with 3 growers and approximately 600 acres.
- The disease inspection program is offered to growers who would like to show documented proof the crop is free from certain diseases. If the field passes inspection, the seed may receive a special label to indicate the seed field was inspected.
- The OECD program requires CCIA to inspect grow outs of 5-10% of certified OECD lots and 100% of foundation and registered seed lots. Since the seed companies plant their own grow outs, OECD has allowed CCIA to inspect these plantings. CCIA staff travel to Hawaii and Mexico to view these plantings. In addition, CCIA has implemented post control grow outs for observation in the Imperial Valley, Davis, and Tulelake.
- We are now in phase II of our Seed Laboratory Recognition Program (SLRP). Requests for check-test seed samples from seed conditioners and seed labs are ongoing. About half the seed certified is OECD and we are checking 10% of all lots certified.
- The CCIA continues to work closely with the county Agricultural Commissioner's and keep them informed about CCIA procedures

- The online seed certification request system began in October 2009. Users request certification, enter lab analysis results, and upload lab reports. The CCIA staff verify lab results and approves the certification. The client receives an email notification that the Seed Inspection Report is ready and they are able to view the report online.
- In conclusion, we continue to review, revise, and document Standard Operating Procedures and crop standards. We publish Seed Notes 3 times per year, upgrade and improve the web application, and will be renovating the office space this coming year.

James Cubbage demonstrated the improved online isolation mapping program. It will use Microsoft Virtual Earth photos to allow users to find their fields and draw the outside boundaries. The system will be able to calculate distances from the outside border of one field to the outside border of another field in order to identify possible isolation problems. We anticipate in the future having fields automatically added to the isolation map after they are submitted as an application to grow certified seed.

9. Meeting was adjourned at 11:25 am.

Respectfully submitted,

Mary E. Schlosser

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