

## California Walnut Board

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## GRADES & STANDARDS COMMITTEE MEETING MINUTES

**Thursday, September 2, 2010**

The California Walnut Board Grades & Standards Committee met on Thursday, September 2, 2010 at the Le Rivage Hotel in Sacramento, CA. Committee Chairperson Bill Carriere called the meeting to order at 10:00 a.m. Ms. Steindorf called the roll and established a quorum. The following Committee members were present:

Bill Carriere, Chairperson  
Steve Lindsay, Vice-Chairperson  
Chuck Crain  
Frank Guerra  
Sam Keiper (non-voting)  
Gus Mariani

Committee member Pete Turner was absent. Also in attendance were: Duane Lindsay, CWB/CWC Technical Advisor; David Ramos, CWB Research Director; Mike Hurley, Gail Santana, Tom Jones and Pat Ferriera of DFA; Debbie Wray of USDA/AMS; and CWB staff members Dennis Balint, Carl Eidsath and Dana Steindorf.

The first order of business was the approval of the minutes from the last Grades & Standards Committee meeting held on June 10, 2010. Mr. Crain made motion to approve the minutes as mailed, Mr. Guerra seconded the motion and it carried unanimously.

The next agenda item was the report from the Food Safety Working Group. In the absence of working group chairperson Don Barton, Mr. Balint explained that the working group met last month. The group discussed an organic, acid-based wash called Chico Wash, future research and the needs of the industry in the immediate future in regard to food safety issues.

Chairperson Carriere moved on to the next agenda item, Review of Current and New Research. He asked Dr. David Ramos to present the first item under that topic, Sustainability. Dr. Ramos explained that sustainability is getting a lot of attention in the press lately and he presented several articles in agricultural publications on the subject. Sustainability is not organic, even though the organic movement probably gave it a push. Organic is very strict – no pesticides, no chemical fertilizers, certification, etc. Sustainability applies to the whole industry and covers three areas: economic viability, ecological soundness (environment and resources) and social equity. The walnut industry has the economic viability issue covered as well as social equity. What we need to focus on is the environment and resource issues.

Dr. Ramos stated that the PRAC Orchard Management working group met a few days ago and the main topic of conversation was sustainability with three presentations on the subject covering the issues of air quality, water/irrigation issues, maximum residue limits (MRLs), applied research, and loss of public trust in agriculture. The working group also discussed a multi-commodity sustainability project which would have the following benefits: a shared approach to sustainability; benefit from others' experiences; commonality of certain issues such as air quality, water use, energy use, pest management; and better use of financial resources.

Dr. Ramos commented that walnut growers are already doing a good job with sustainable practices. Part of the problem may be the message – we are not getting the message out to the market and consumers. Four of the seven goals of the Research Committee relate to sustainability. His recommendation is to find out from handlers how much pressure they are under and how they feel about the CWB embarking on a sustainability program.

Mr. Balint suggested that Dr. Ramos develop a chronology to show how the industry has changed for the positive over the past ten years (from pesticides to water issues). That would be a good first step because the marketing people can look at the chronology and determine how much of the information they want to communicate to buyers. Mr. Keiper commented that most major food manufacturing companies have a sustainability policy. He believes that in the near future handlers will be evaluated by some of the bigger customers to determine the handler's sustainability practices. A discussion ensued about the possible next steps to take in developing an industry-wide sustainability program including using the resources of U.C. researchers and farm advisors.

Chairperson Carriere asked Mr. Mike Hurley of DFA to present the next agenda item, Sensory and Shelf Life. Mr. Hurley commented that at the last committee meeting, the group approved a project from Dr. Linda Harris working in conjunction with DFA to validate a surrogate in the event we ever had a *Salmonella* issue in walnuts. This study also examines the off-gassing with propylene oxide (PPO) and also whether or not there is any heat degradation with the sterilization techniques that Dr. Harris is using.

Mr. Hurley stated that at the last meeting, the committee agreed that they would like to see a more substantial taste-test included in the project. He received three proposals from National Food Labs on the taste studies. Using the same three variables (a control sample, a sample treated at 105 degrees, and another sample at 120 degrees), option one is a taste-only study at \$4,750; option two is an accelerated shelf-life study for \$9,285; and option three is a combination of both the taste and shelf-life studies for \$14,035. A discussion ensued about the temperatures to use for the studies. With the approval of any of the proposals, the Committee will exceed their research budget for 2010/2011. Mr. Balint stated that the Committee may ask the Board at their meeting on September 10, 2010, to fund this project from Board reserves.

Mr. Crain made a motion to move forward with the third proposal option from National Food Labs, both the taste and shelf life studies, at \$14,035. Mr. Steve Lindsay seconded the motion and it carried unanimously.

Chairperson Carriere stated that the next item, PPO Validation, was covered in the earlier discussion about the sensory and shelf life studies. He asked Mr. Eidsath to present the next item, statewide *salmonella* prevalence survey for inshell walnuts. Mr. Eidsath stated that at the annual Almond Board Food Safety Conference on August 1<sup>st</sup>, Dr. Jenny Scott of FDA made a presentation and she commented during that presentation that the walnut industry is not concerned with *salmonella*, and that they had isolated two *salmonella* species on walnuts (which was determined later to be a "clerical error"). Dr. Linda Harris was also present at that

conference and Mr. Eidsath discussed with her the possibility of conducting a *salmonella* prevalence and survey testing of walnuts during the 2010 harvest.

Mr. Eidsath stated that he and Mr. Gus Mariani visited Dr. Linda Harris and Tyann Blessington at U.C. Davis on August 12<sup>th</sup> to continue the discussion on conducting an orchard dragging. At that meeting, Dr. Harris dissuaded Mr. Eidsath from moving forward with an orchard survey; it is information that has already been collected and studied. Her recommendation was to analyze historical data including product and environmental testing for *salmonella* and to begin *salmonella* prevalence testing at time of receipt at the handlers. She recommended starting with 1,000 inshell samples (500g each) this season and the study would be designed to “blind” all samples to remove handler identification prior to testing at DFA in Fresno. Dr. Harris explained to Mr. Eidsath that in the studies in almonds and pecans, if the studies are correctly “blinded”, FDA will allow those studies and not report any positive findings into the registry. A discussion ensued about the way the samples will be collected and handled by DFA (DFA has agreed to absorb the cost of the testing of samples) and the expenses related to collection and shipping of the samples.

Mr. Guerra made a motion to set aside \$10,000 of the Grades & Standards research budget for miscellaneous expenses related to sampling for the prevalence study. Mr. Crain seconded the motion and it carried unanimously.

Mr. Carriere asked Mr. Eidsath to continue with the discussion on the potential of hull compounds as antimicrobials. Mr. Eidsath explained that Dr. Harris has conducted some studies that seem to indicate that some compound in walnut hulls seems to kill off *salmonella*. Dr. Harris is backlogged from the data analysis of the study that she presented at the winter meeting and unfortunately, has not completed review of the data. Once the data is summarized, analyzed, and evaluated, she will have a clearer picture and several recommendations for key studies at a later date.

Mr. Eidsath continued with the discussion on organic acid wash. He stated that in addition to Chico Wash, he also contacted two other companies that provide the service. He and Mr. Steve Lindsay had a discussion with one such company, BioSecure, regarding their product, a citric acid/ascorbic acid with bioflavonoids added. BioSecure is currently working with the Almond Board and an unnamed walnut handler. The product is applied either as a spray, a wash, or electrostatic application. The product has produced at least a four-log reduction on almonds and pistachios, however, there is no current data on walnuts as of yet. According to the BioSecure representative, it would take about four to six months for FDA approval after studies are completed on walnuts. Mr. Eidsath will present the information to the Food Safety Working Group to determine interest from the walnut industry.

Chairperson Carriere moved on to the next agenda item, other Food Safety Activity Opportunities. Mr. Eidsath commented that the walnut industry is close to catching up with the other nut commodities in scientific research as far as food safety risk assessment is concerned, and the prevalence study could direct what the next steps will be.

Mr. Balint presented the next agenda item, Review Meal Rule. He stated that the rule published in the Federal Register and handlers now have a choice in how DFA will inspect meal – the old method (inspection prior to chopping) or the new method of inspection after chopping. Each handler will need to make their inspection method selection with DFA prior to the start of each crop year. A discussion ensued about the lot size of meal that will be inspected.

The time and place of the next meeting will be determined by the Chairperson and staff. There was no need for Executive Session. Hearing no further business, Chairperson Carriere adjourned the meeting at 11:47 a.m.

## Minutes Of The Food Safety & Quality Working Group

27 July 2010

The meeting opened at 8:30 am with a presentation from a representative of Chico Wash. Chico Wash is a citric-acid based compound which, when added to water, is reported to achieve a five-log kill for pathogens when exposed to the solution for at least 30 seconds. The representative passed around raw and treated samples of almonds, hazelnuts, and pistachios for the members to taste. He also reported that Quality Nut has experimented with this material in inshell walnuts this past year, but the rep had no other information with regard to test results on walnuts.

The group considered a recommendation to the Grades & Standards Committee to sponsor a field research project which would look at the prevalence of *Salmonella* in walnut orchards. Of particular encouragement to the group was a recently-published study from the University of Georgia's Dr. Larry Beauchat which indicates that *Salmonella* dies when exposed to a slurry of pecan husks, inshell pecans, and soil due to the astringent qualities in pecan husks. This information seems to have some connection to Dr. Linda Harris' earlier study indicating that walnut hulls are a poor host for *Salmonella*. It was also pointed out that—unlike almonds where the hulls have some monetary value and are the grower therefore makes an effort to capture as many hulls from the orchard as possible—pecan and walnut growers do the opposite, making every effort to leave as much of the hull material on the orchard floor during harvest. The group emphasized that it was important to solicit a proposal from Dr. Harris for this study prior to the onset of the 2010 harvest, since the opportunity to gather material for this type of study only occurs during the roughly 6-8 weeks of the harvest each year. On a unanimous vote, the group approved the recommendation and forwarded it on to the Grades & Standards Committee for further action.

A good deal of time was spent discussing how the California Walnut Board should respond to a recent unfortunate event which occurred at the Almond Board of California's annual Food Safety Seminar. During the seminar, Ms. Jenny Scott of FDA erroneously reported that two positive hits for *Salmonella* had been discovered in walnuts. She also publicly commended the almond and pistachio industries for their pro-active responses to food safety, but declared that "the walnut industry does not seem too concerned about these issues". After the presentation, representatives of the walnut industry approached Ms. Scott to ask her for specifics on the positive walnut findings. She did not have them and later indicated in a memo to Carl Eidsath that she had reported in error "due to clerical errors". While she apologized, her muted written apology does not un-do the damage she created in a large public forum with her comments. The group agreed to address this issue on three fronts: a) on the *science*

front, the group recommends going forward with three separate studies or proposals for studies: 1) the field study referred to above; 2) the validation study being conducted by DFA for the efficacy of PPO as a kill step for walnuts; and 3) a proposal from DFA to consider gathering data on pathogens present on incoming inshell loads being graded by DFA (it is important to note that this last item would not be sponsored by the CWB, but the results—it was agreed—would certainly be helpful in beginning to assemble data on the presence, or lack of it, of *Salmonella* on walnuts from the field and huller; b) on the *political* front, it's clear that we need to more actively engage Ms. Scott in apprising her of what we're doing as an industry to address food safety. Dennis will make a point of meeting her when he is in Washington, and we also agreed that we need to encourage Dr. Harris to educate Ms. Scott on our research activities, as the two of them have a good working relationship. Carl Eidsath will plan to visit with Dr. Harris in August; c) on the *public relations* front, we need to ensure that we're communicating about the work we have done and are doing—from food safety seminars to GMP videos to research studies, not to mention emphasizing that the walnut industry has not had a recall for *Salmonella* and has actively participated in the formulation of the GMA Nut Industry Handbook that is now being used by walnut processors to guide their food safety programs.

There being no further business, the working group adjourned at 9:50 am.

**SUMMARY**  
**PRAC Orchard Management Working Group Meeting**  
**UC Davis**  
**August 24, 2010**

Attendance: Richard Buchner(co-chair), David Ramos (research director), Dave Keyawa (research committee), Jerry Moore (research committee), Dave Scheuring, Fred Spanfelner, Patrick Brown, Bruce Lampinen, Chuck Leslie, Alissa Kendall, Sonja Brodt, Janine Hasey, Elizabeth Fitchner, Janet Caprile, Rachel Elkins, Cliff Ohmart, Gabriele Ludwig, Joe Connell, Melanie Covert, Jim Thompson, and Bob Beede.

Richard Buchner gave a brief introduction and David Ramos followed with an overview and update of Production Research Advisory Council (PRAC) activities. Dave set the stage for the three power point presentations addressing sustainability issues in California walnut production.

**WALNUT SUSTAINABILITY PRESENTATIONS**

**Environmental Issues: California Almond Sustainability Program - Gabriele Ludwig, Assistant Director, Environmental Affairs, Almond of California.**

The California almond industry has an ongoing commitment and investment in Research. They are organized into industry, nutrition, consumer, and market research. In 2002, the environmental committee was formed. Their current budget is about 1 million dollars funding 13 projects in air quality, water quality, and stewardship/sustainability. New challenges include air quality, water quality, Endangered Species Act, international markets (MRLs), bees/pollinators, greenhouse gas regulations, and water availability.

Air Quality Challenges. These include volatile organic compounds (VOCs). EPA has just proposed more stringent federal ozone standards and DPR wants further restrictions on the use of Lorsban and Goal. Additional air quality challenges include PM10/PM2.5, Ag equipment motors and burn bans.

AB 32 passed in 2006 promises to reduce greenhouse gas emissions by 20% by 2020. Major gases include carbon dioxide, nitrous oxide, and methane. Grower sources include fossil fuel engines, nitrogen fertilizers, fertilizer/pest management inputs, and energy for processing/storage and transportation.

Regulations for Soil Fumigants. The common concern is emissions.

Water Quality/Irrigated Lands Program. Central Valley Regional Water Board (CVRWB) wants to know what growers are doing to prevent contamination. DPR is developing additional surface water regulations. CVRWB is expanding irrigated lands to include ground water. Will need ground water management plans. The focus is on nitrogen and salts. DPR has a ground water protection program in addition.

Endangered Species Act. EPA failed to consult with other agencies so their decisions are subject to legal review.

International Maximum Residue Limits (MRLs). Increased residue testing globally. MRLs are not harmonized, different use patterns, risk assessments, ability to process applications, and residue definitions.

Applied Research and Extension. Over two decades, public funding of agricultural research and extension has declined. UC Farm Advisors are critical with inability to fill vacant positions and a substantial wave of retirements.

Loss of Public Trust in Agriculture. Social License is the privilege of operating with minimal formalized restrictions (legislation, regulation or market requirements) based on maintaining public trust by doing what's right.

Public trust is a belief that activities are consistent with social expectations and the values of the community and other stakeholders. There seems to be a loss of public trust in agriculture being expressed by major buyers/corporations.

The point of these concepts is that they are unbalanced resulting in additional social control through regulation, legislation, litigation, and compliance. We may want to do a better job of informing others about the walnut industry.

Almond Sustainability Program. One definition of sustainability covers the three "E's": Ecologically Sound, Economically Viable, and Socially Equitable. The California Almond Sustainability Program utilizes production practices that are economically viable and are based upon scientific research, common sense, and a respect for the environment, neighbors, and employees. The result is a plentiful, healthy and safe food product. Almonds are working on grower focused self assessments for encouraging the use of best practices.

**"The Multi Commodity Sustainability Project" - Cliff Ohmart, VP for Professional Services, Sure Harvest.**

The project goals are to create a sustainable farming strategic plan and create an educational outreach tool to accomplish the strategic plan in the form of a self assessment workbook. There are 16 participating farm organizations. Cliff outlined three challenges to Implementing Sustainable Farming:

- 1) Defining it – What are the boundaries of the definition
- 2) Implementing it – How do I practice it on my farm
- 3) Measuring it – Tracking practices and performance

Cliff also covered the 3 "E's" of sustainable farming and described it as a continuum. Each grower needs to decide where they want to be with respect to sustainability. Some of the benefits of having multiple commodities include:

- Shared approach to sustainability
- Benefiting from others experience
- Commonality of certain issues like air quality, water use, energy use, pest management
- Better use of financial resources

In summary, they are working toward templates that growers can use to capture sustainable efforts.

**Carbon Footprint - Alissa Kendall, Department of Civil and Environmental Engineering, UC Davis.**

Alissa Kendall is working on life cycle assessment models that calculate primary input to final output and produce efficiency estimates. She can track material inputs for nut production and outputs such as greenhouse gases (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O) and present the data as CO<sub>2</sub> equivalents. The project would work with other researchers to model various inputs. For example, Ted DeJong's work on carbon modeling or information regarding fuel and tractor efficiency. Her work would be a good way to organize and evaluate the walnut production system as a whole and provide some basic background information that can be used to address the carbon cap and trade issue.

**Following the three sustainability presentations participants had a general discussion which resulted in the following thoughts, ideas and comments:**

What is driving all this are the big marketing corporations such as Walmart and Cargill. All major companies have someone working on sustainable issues. This is a rapidly changing landscape and commodities need to evaluate how they want to fit in. In the walnut industry, how do the packers and buyers weigh in on these issues?

In terms of sustainability, it might be better for the industry to steer the course rather than outside groups determining future sustainability in walnut production. The walnut industry needs to decide if it wants to get into a sustainability project and what are the issues and targets.

It might be more efficient to engage the issue from a multiple commodity stand point. Perhaps the three major nut crops.

Walnut growers are already doing a good job of using sustainable practices so one strategy would be to compile or package and advertise what we are already doing. Someone would have to be identified to lead that effort. One concern with this approach is that it might not generate adequate data to address regulatory issues. When working in the regulatory environment we need good scientific data to measure changes do to sustainable practices.

This is no longer a production system that allows growers to produce walnuts in a somewhat isolated sense. The entire industry will need to come together as part of the sustainable continuum.

It's important to find out how much pressure the handlers and buyers are feeling and how important are sustainability issues to them. How much does the walnut industry want to take the lead on this?

**OTHER ORCHARD MANAGEMENT WORKING GROUP ISSUES**

**Walnut Farm Advisor Support**

Butte County Farm Advisor Joe Connell led a discussion regarding a mechanism to get some funding support into farm advisor hands to help with research and extension programs in the counties. The cost would be something like \$3000 per advisor. The projects would not be large enough to warrant a full proposal. This money would provide local support that could be used at the discretion of the advisor. For example, if a walnut advisor saw an opportunity to do a quick field experiment, these monies would support that effort.

The PRAC Orchard Management WG supported this and suggests the research committee take it forward.

### **PDS Orchard Trials**

Kings County Farm Advisor Bob Beede led a discussion regarding the future of the paradox diversity trials and the value of harvest data from the Kings County plot now that the trees have filled their spaces. Tree size canopy determines yield. The discussion suggested that past data suggests no differences would be expected so harvest might be a great deal of work to document existing data. Bob brought up the issue of more efficient harvest equipment. The old nut carts are not very efficient for large walnut yield plots.

### **Canopy Management**

CE Specialist Bruce Lampinen led a discussion on walnut canopy management and his work with the new mule mounted light bar equipment. The light interception data might help with the work that Alissa Kendall wants to do in modeling the walnut system.

### **Postharvest Handling and Technology**

Retired CE specialist Jim Thompson led a discussion on improving walnut dryer efficiency. Current energy use (therms/ton) is about one half compared to 1976. The research strategy is to separate wet and dry nuts and dry accordingly to further improve efficiency. Dryer efficiency information would be a valuable input to the work Alissa is doing.

### **Orchard Nutrition**

Patrick Brown, Department of Plant Sciences, UC Davis, led the discussion regarding walnut nutrition and his work with the SCRI grant. The point was made that a one size fits all approach to water and nutrient management is not a sustainable practice. Tree crops are highly variable and we can improve input decisions using crop based indicators. This work would also be valuable for the Kendall modeling.

### **Walnut Grafting Video**

Lake County Farm Advisor Rachel Elkins led a discussion on the walnut grafting video. The PRAC Orchard Management Working Group thought this was a valuable project and should be supported.

### **Discussion of Current PRAC Orchard Management Working Group Research Priorities**

Pistillate flower abortion was changed from high to low priority. The ethephon work is winding up so the priority for additional research on the use of ethephon as a harvest aid will decrease as well. There is a need to include the walnut water use research by Fulton and Buchner. Also, the time frames for the various research approaches/objectives should be adjusted.

# CALIFORNIA WALNUT BOARD

## Summary report of Linda Harris visit 8/12/10

CWB rep: Carl Eidsath	
Date: 8/12/10	
Location: UC Davis, CA	
Purpose of trip: Discussion of Salmonella prevalence and survey testing of walnuts during 2010 harvest. Plan for ongoing Salmonella studies with walnuts for longer term.	
Additional persons present: Gus Mariani, Tyann Blessington	

**Orchard dragging discussion:** Our meeting started out with the topic of walnut orchard dragging. I spoke about recent discussions with Jenny Scott (FDA) about the FDA's attitude that "the walnut industry not too concerned with Salmonella" and what should be done to change this. Perhaps our lack of orchard Salmonella drag data and nut survey studies could be started? I stated that the walnut orchard drags could be useful to the industry and show the FDA we are actively investigating if walnut orchards are similar to almond orchards that show approximately 1% of drag samples tested positive for Salmonella. Linda reviewed some of her work (done with the California Dept. of Public Health and CAL-FERT) dragging almond orchards after the Salmonella outbreak serotype was identified as originating in 4 orchards. Except for the extensive work on these 4 orchards and publication of the results, Dr. Harris did not conduct follow up dragging of additional orchards that were not related to the outbreak. She did not believe this data would be of additional benefit to the almond industry and may in fact raise questions without easy answers. Along that same reasoning, Linda recommended against the walnut orchard dragging study this harvest and instead, focus on the following areas:

1. **Analyze historical data including product and environmental testing for Salmonella.** Dr. Harris stated that there should be substantial industry data on Salmonella testing of walnuts, both inshell and kernels. There should also be some data available from each handler on environmental monitoring for Salmonella. She recommended that this data be "pooled" and analyzed by a neutral party (such as UC Davis) to support the lack of Salmonella findings. This would require the cooperation of each handler to supply micro test results.
2. **Begin Salmonella prevalence testing at time of receipt at the handlers.** This is what the pecan industry is currently doing to survey the presence or absence of Salmonella in a raw product. Up to 1,500 samples will be taken from a minimum of 6 shellers throughout pecan harvest. If we conducted a similar survey at selected handlers it will show the FDA we are scientifically analyzing and assessing the risk of Salmonella entering our cracking facilities. Linda recommended with take 1,000 samples this season and there's many details to be worked out before harvesting begins. The pecan (and past almond surveys) study is designed to "blind" all samples to remove all handler identification prior to testing at DFA in Fresno. The risk in this approach is that Salmonella will be isolated on a walnut but the blind nature of submission will protect all the participants. On the other hand, what a story that would be if everything tested negative! The pecan study methodology is on a separate document for review.