MINUTES
STONE FRUIT RESEARCH SUBCOMMITTEE
January 26, 2010
Reedley, California

Chairman Bill Chandler called the meeting of the Stone Fruit Research Subcommittee to order on January 26, 2010, at 12:20 p.m. in the Conference Room of the California Tree Fruit Agreement in Reedley, CA. The Chairman recognized a quorum.

Committee Members Present:

Christeen Abbott	Bill Chandler	Michael Reimer	Eric Wuhl
Joe Bezerra	Rod Milton	Wayne Stogbauer	
Alan Butterfield	Ty Parkinson	Bill Tos	

Committee Members Absent:

Maria Barbis (A)	Eric Gaarde (A)
Ryan Metzler	Rod Riffel

Government Representatives Present:

Jerry Simmons, USDA

Others Present:

Dr. Luis Cisneros	Bob Dick	Dale Janzen	Dr. Richard Sexton
Kevin Day	Dr. Brad Hanson	Dr. Scott Johnson	Gary Van Sickle

The Chairman stated that while the group was waiting for lunch to arrive, he would begin with several of the agenda items, and then break for lunch.

Minutes

It was moved by Mr. Bill Tos, seconded by Mr. Rod Milton, to approve the September 24, 2009, minutes. The motion passed unanimously.

Educational Symposium

The Chairman stated he would present the proposal review after a brief discussion about the symposium. He noted that a moderator is needed for the morning session. Mr. Alan Butterfield volunteered to serve as moderator.

Endowment Task Force Update

The Chairman reported the Endowment Task Force Subcommittee had met earlier this morning, and they recommended having the endowment project tabled for 18-24 months. He reported that at the Fall Committee/Board meetings, held in December 2009, the industry was split on the issue, and since there wasn't a clear mandate to move forward, it would be best to table the endowment. He reported cost was the major concern for most people.

2010 Proposal Review (proposals are available upon request)

The Chairman stated he would begin with one of the presentations, and after that the group would recess for lunch. He then asked Dr. Brad Hanson to give his presentation for his proposal.

Hanson/Steam Auger Project - Dr. Hanson noted his background as a weed scientist, and mentioned that although he was originally working at the ARS Station in Parlier doing fumigation work, he recently accepted a Cooperative Extension position with the University of California, Davis. He reported his project is an evaluation of a steam auger that would be a non-chemical method to be used in replant situations. He explained most orchards are

replaced after 12-15 years, noting that second and future generation orchards can suffer from replant problems. In particular, the nematode risk is in 35% of the acreage in the production area, which can reduce productivity and lead to bacterial canker problems. He indicated the replant problem is compounded by agronomic and cultural practices. In regards to replant disease management, Dr. Hanson noted fumigation, in particular with methyl bromide and variations of Telone®, were quite effective, but regulatory issues, such as the methyl bromide phase-out, Telone® township caps, VOC (volatile organic compound) regulations and fumigant re-registration need to be addressed. Thus, he felt there is a need to research non-fumigant alternatives.

Dr. Hanson reported steam disinfestations have been used for decades, and explained the key is to get the soil up to 158 degrees Fahrenheit for 20 minutes, which will then kill most soil borne pests, such as nematodes, pathogens and weed seeds. Steam has been demonstrated to be effective in apple replants and in forest nursery situations. He noted there were economic issues due to current energy prices, and indicated the best application would be in a smaller area with a smaller number of tree sites that need to be treated.

Dr. Hanson reported the preliminary research includes conducting two almond replant trials that were initiated in December 2009. He noted the funding came from the Almond Board of California. He said they would be comparing the tree site steaming to strip fumigation. In this particular test, Dr. Hanson noted they will be using a 24-inch auger, and it will be going to a depth of 24-inches, with five minutes of steam being applied per tree site. Dr. Hanson stated the objectives of the project include optimizing tree sites and steam applications for control of the replant disease problem in stone fruit orchards with various soil physical parameters, which will also be related to the auger diameter, depth, time, soil type and soil moisture. It will also determine the effects for each tree site, steam applications on established and early growth of stone fruit trees. For this he would be establishing larger plots and would have two augers running in the plots. The project will assess the economic viability of the steam auger as a tree site disinfestation technique.

Dr. Hanson reviewed the work plan, which includes several trials, both at research stations and with grower cooperators, basic research will optimize the steam treatment efficacy, which will look at auger diameter, depth, application time, different soil types and/or soil moisture, and will monitor soil temperatures. There will be a comparison of the steam treatment versus fumigants and monitoring of tree establishment and early growth. An economic analysis, which will look for the optimized treatment for a larger plot size, will be conducted. Dr. Hanson then reviewed the requested funding, which is $33,763. He noted they have also been leveraging funds from other sources, such as one of the propane groups.

In response to a question from Mr. Alan Butterfield asking if they would be researching crown gall, Dr. Hanson indicated they had not discussed it, but it might be a possibility. In response to a question from Ms. Christeen Abbott asking how far into the soil the steam penetrates, Dr. Hanson indicated it penetrates about 4-6 inches. He noted this is why the injectors are spaced about 12-inches apart on some of the new equipment. In response to a question from Mr. Bill Tos asking if they would be testing dry soil conditions, Dr. Hanson indicated they would be testing both moist and dry soil conditions, as well as warm versus cold soil conditions. Dr. Hanson also stated this type of alternative to fumigation might help those with buffer zone problems in trying to utilize as much acreage as possible. The Chairman thanked Dr. Hanson for his presentation, and recessed the group at 12:50 p.m. for a 15-minute lunch break.

The Chairman reconvened the meeting at 1:08 p.m. He then asked Dr. Cisneros to present his proposal.

Cisneros/Promoting stone fruits for protection against the Metabolic Syndrome - Dr. Cisneros reviewed there are several chronic diseases that continue to increase in number in the United States. He reported 47 million Americans have *Metabolic Syndrome*, which consists of a group of conditions that increase a person's risk for heart disease, diabetes and strokes, with inactivity and obesity being a primary cause. These conditions are usually associated with pro-inflammatory and pro-oxidant environments, increases in the pro-inflammatory cytokines, and stress related proteins. Dr. Cisneros reported 70% of people who have type-2 diabetes and 50% who have coronary heart disease have Metabolic Syndrome. He reported 64% of adults are overweight, and 26% are obese. He stated it is estimated that 75% of the adults in the United States are projected to be overweight and 41% obese by the year 2015.

Dr. Cisneros explained part of the concept strategy for the project is to generate scientific information that has the potential to benefit the stone fruit industry, thus increasing the value, marketability and profitability of peaches, plums and nectarines. He reported they received hundreds of calls from magazines and various editors when their press release went out last spring. Dr. Cisneros then reviewed his proposal. He again stated the plan is to study the effects of stone fruits against the Metabolic Syndrome. He stated the hypothesis is that stone fruit phenolics will have multiple functions and will work against Metabolic Syndrome in different fronts simultaneously. He said the phenolics would then work to reduce inflammation, thus reducing insulin resistance and atherosclerosis. Dr. Cisneros reviewed that in year one, phenolic fractions from selective varieties of peaches, plums and nectarines will be studied to determine their anti-inflammatory properties using human umbilical vein in endothelial cells and fat cells. He said at the end of this process there will be a press release of the work through Texas A & M University. He then noted that in year two, phenolic fractions from selected stone fruits will be studied to determine their anti-diabetic properties and screening of stone fruit genome types for anti-inflammatory and anti-diabetic properties. At the end of the work, there will be a press release through Texas A & M University. He clarified the press releases would be coordinated with the industry to maximize the use of them for the crop season. He then reviewed that in year three, studies will be conducted using select stone fruit extracts to determine their effects against the Metabolic Syndrome *in vivo* using a special type of mice, which are appropriate for obesity, cardiovascular and diabetes studies. Dr. Cisneros noted there will be a press release at the end of the study. He also noted there will be journal articles forthcoming from this work. He felt the phenolics should be able to target specific organs, such as the waist fat tissue. He also noted they will determine when phenolics are applied, and if they produce good hormones and reduce the bad ones.

Dr. Cisneros explained this information would be very powerful, once confirmed. He reviewed, in regards to outcomes, there have already been 45 varieties of plum genome types with flesh colors ranging from white, yellow to dark that have specific anti-oxidant capacity. He noted the same is true for 19 peach genome types they have studied. He noted one of their findings was that the phenolics provide inhibition of breast MCF-7 tumor cell proliferation by the phenolic extracts from Rich Lady peaches and Black Splendor plums. He acknowledged they will try to publish the findings based on commodities without revealing varietal information. He noted for this breast tumor inhibition it is in the process of being published, but they currently do not have the release date, but expect it to be in the spring. Dr. Cisneros clarified the current work has been published in the Journal of Food Chemistry, and then provided several excerpts from various media stories regarding the antioxidant levels of stone fruits. He also stated at some point in the future they may need to bring an economist into the project. Mr. Michael Reimer advised, in regards to the press releases, that a schedule needs to be passed on to the marketing desks in the industry. In response to a question from Mr. Joe Bezzera regarding the number of replications that have been conducted on these various processes, Dr. Cisneros clarified six to nine replications are usually standard. In response to a question from Ms. Christeen Abbott asking if he is conducting work with other commodities, Dr. Cisneros informed he was also studying pecans, which he noted were very different from the stone fruits. He added the cosmetic market might be a secondary market with interest for the industry. The Chairman thanked Dr. Cisneros for his presentation.

He then asked Dr. Richard Sexton to review his economic research proposal.

Sexton/Quantifying the economic impact of tree fruit quality and postharvest innovation - Dr. Sexton reported the economic aspect adds to the work that Dr. Crisosto initiated last year for the industry. Regarding his background, Dr. Sexton stated since he has not worked specifically with stone fruits in the past, he has been working on fruit marketing and competition issues. He noted this particular project would look at the benefits of marketing fruit with quality attributes, which is very important. He reported there are studies available which show that consumers are willing to pay for quality attributes, and this proposal would be seeking to study specifically that aspect for stone fruit. He noted the project was based on the consumer survey from the consumer research that CTFA was supposed to be conducting, and his part would have been to add questions to the dimensions in regards to the willingness of people to pay. He was not sure at this time how the effect of CTFA canceling that work would affect the project and the survey. He also indicated it might be possible to review scanned data in regards to price points from the grower level to the retail level. He indicated this would also be used to translate the production side and what it means to the demand size in the equation. He stated this would be a three year project, and funds are mostly for the funding of a post-doc who would be working on the project. Mr. Reimer contributed that scanned data is already being

purchased by CTFA and would be available for his use. Dr. Sexton then asked if there were any other questions. The Chairman thanked Dr. Sexton for his presentation.

The Chairman then asked Dr. Scott Johnson to conduct the proposal review.

Adaskaveg/Epidemiology and management of pre- and post-harvest diseases of peach, plum and nectarine - Dr. Johnson reported Dr. Adaskaveg would be continuing with similar work as he has in the past on pre- and post-harvest diseases. He stated for this year he has also added Peach Leaf Curl work. Mr. Reimer noted that Dr. Adaskaveg might need to be concerned about Ziran® and its use in the future, indicating many growers are now staying away from this crop care material due to unconfirmed links to Parkinson's disease. Mr. Wayne Stogbauer commented there are very few replacements for Ziram®. Mr. Reimer added that in regards to Lorsban® last summer many retailers wanted assurance that it was not used on the crops.

It was moved by Ms. Christeen Abbott, seconded by Mr. Wayne Stogbauer, to recommend the project for funding. The motion passed unanimously.

Cisneros/Promoting stone fruits for protection against the Metabolic Syndrome - Mr. Bill Tos indicated he felt it was important for the industry to continue with the health research work.

It was moved by Mr. Bill Tos, seconded by Mr. Joe Bezzera, to recommend the project for funding. The motion passed unanimously.

In response to a question asking how many of the marketers were using results from this project last summer, Mr. Michael Reimer responded that almost all of the pro-active sales marketers were using it, and Metabolic Syndrome is the next big buzz word.

The Chairman called for the question and the motion passed unanimously.

When Dr. Cisneros returned to the room, it was clarified again that he needed to maintain the project to a commodity level and not at a varietal level. He was also asked to coordinate press releases with CTFA.

Byrne/RosBreed Supplement: Development of cultivars with higher soluble solids - Dr. Johnson explained this was a breeding project with an attempt to develop varieties with higher soluble solids.

There was consensus from the group to delay and to have a video conference with Dr. Byrne to get additional information regarding the project.

Crisosto/Updating peach, nectarine and plum inking and/or skin discoloration development information – Dr. Johnson reported that Dr. Crisosto has been studying this problem for several years.

It was moved by Mr. Bill Tos, seconded by Mr. Wayne Stogbauer, to recommend the project for funding. The motion passed unanimously.

Crisosto/Development of predictive tools for brown and sour rot resistance in peaches and nectarines –Dr. Johnson indicated Dr. Crisosto is also going to research powdery mildew as one of the other disease problems. There was discussion on the potential application of the genetic markers that are being developed in this project.

It was moved by Mr. Bill Tos, seconded by Mr. Michael Reimer, to recommend the project for funding. The motion passed unanimously.

Crisosto/Testing a fall Ethrel application for flower removal: A new thinning approach – Ms. Christeen Abbott stated she was not sure if the ethereal product was registered, and expressed concern about a registrant picking it up if it has not been registered. She reported it is quite expensive for the registrant to do this. The group then decided to table the decision on this project until the next meeting, and will try to get additional information on the product.

Crisosto/Establishing a tree fruit trained panel evaluation sensory tool to evaluate pre- and post-harvest technology on consumer acceptance - Dr. Johnson reported one of the components is to have a taste panel that will be looking at various post-harvest applications and their effect on taste attributes. It was suggested this project should be reviewed in tandem with the Sexton economic project. There was also concern expressed about the industry expectations of what the project will provide in regards to benefits, and whether the industry would adopt the findings. Mr. Rod Milton expressed concern regarding the cost for the project, and felt most growers know the economic impact of the management decisions that they employ in the growing of their crops. Mr. Reimer responded if the industry is able to show retailers how to make money, it will be able to influence them, thus changing mindsets.

It was moved by Mr. Rod Milton, seconded by Mr. Ty Parkinson, to table the project until the next meeting for further discussion. The motion passed unanimously.

Day/Development and testing of pedestrian orchard concepts – Dr. Johnson explained this was the development and demonstration of a pedestrian orchard concept.

It was moved by Mr. Eric Wuhl, seconded by Mr. Rod Milton, to recommend this project for funding. The motion passed unanimously.

DeJong/Using a 3-D Computer Simulation Model – Dr. Johnson explained this is Dr. DeJong's computer modeling of the peach tree, and in this past year, Dr. DeJong also added plum data to it. Mr. Reimer added that at the 2009 winter research meeting, Dr. DeJong gave a presentation on the modeling, which provided excellent information.

It was moved by Mr. Eric Wuhl, seconded by Mr. Joe Bezerra, to recommend the project for funding. The motion passed unanimously.

DeJong/Improved rootstock of peach and nectarine – Dr. Johnson reported Dr. DeJong continues to evaluate and has started releasing some of the new rootstocks. He has been focusing on the more promising ones.

It was moved by Mr. Eric Wuhl, seconded by Mr. Alan Butterfield, to recommend the project for funding. The motion passed unanimously.

Hanson/Evaluation of the steam auger for tree site disinfestation in stone fruit orchard replant situations- Dr. Johnson reported that Dr. Hanson had presented earlier in the meeting, and stated this would be a project that might be valuable for organic growers. Mr. Rod Milton questioned if there were any alternatives to the treatments. He noted, of course, those may not be economical. Mr. Bill Tos felt cost studies needed to be done for this project, but thought the technique might not be feasible as presented. He stated there needs to do additional testing with more than just a 24-inch auger. Mr. Reimer commented there needs to have some type of machine that would work in the soil after it has been ripped. It was the consensus of the group to have Dr. Hanson resubmit the proposal under a larger scale approach, such as a commercial orchard size.

Johnson, Marshall/Better understanding and management of Tenlined June Beetle – Dr. Scott Johnson pointed out that Dr. Johnson is continuing his project, but has not requested any financial funding for this year.

Johnson, Scott/Mechanical blossom thinning using a Darwin String Thinner – Dr. Johnson explained this project involved the Darwin String Thinner, and he will be trying to quantify the results of the usage this season. He noted staff has already tagged shoots to determine the removal factor for the thinner.

It was moved by Ms. Christeen Abbott, seconded by Mr. Alan Butterfield, to recommend funding of the Darwin String Thinning project. The motion passed unanimously.

Johnson, Scott/Improving the efficiency of foliar zinc sprays in peach orchards – Dr. Johnson clarified he had been doing work on this issue for some time, and has found that spraying earlier in the fall might actually be more efficient for zinc uptake into the tree. At this time, Dr. Johnson excused himself from the room.

It was moved by Mr. Wayne Stogbauer, seconded by Ms. Christeen Abbott, to recommend funding for the zinc project. The motion passed unanimously.

Knight/New monitoring options for Peach Twig Borer and Oriental Fruit Moth in MD orchards – Ms. Christeen Abbott expressed concern regarding the project and its relationship to OFM. Mr. Bill Tos indicated the industry currently is not using disruption for PTB. He did not see a big benefit from this particular project. Mr. Wayne Stogbauer added the bait buckets can provide as much info to a PCA as this project might.

It was moved by Mr. Bill Tos, seconded by Mr. Eric Wuhl, to recommend that the project not be funded for the coming season. The motion passed with one nay cast. (Mr. Alan Butterfield)

McKenry/Field confirmation of the value of a new approach to replanting stone fruits – Mr. Kevin Day explained this is an ongoing project, known as the "Starve and Switch" project, which Dr. McKenry has been conducting.

It was moved by Mr. Bill Tos, seconded by Mr. Joe Bezzera, to recommend the project for funding. The motion passed unanimously.

Michailides/Sources of inoculums, biology, epidemiology and management of sour rot in stone fruit orchards – Ms. Christeen Abbott reported that Dr. Michailides has been making good progress. Mr. Wayne Stogbauer agreed. Mr. Van Sickle added this is the last year for this project, and Mr. Michailides is cleaning up some loose ends.

It was moved by Mr. Joe Bezerra, seconded by Ms. Christeen Abbott, to recommend the project for funding. The motion passed unanimously.

Suslow/Microbial food safety and postharvest fruit disinfection – Mr. Van Sickle informed that Dr. Suslow is researching several aspects, including contaminated water uptake within the tree, a potential kill step, and at microbial pathogens' potential to survive on a tree. Mr. Reimer added the water uptake issue for this project is very important. Mr. Bill Tos related that during this past season an inspector saw that there was water coming from their field toilets, and expressed concern that the water would result in an uptake into the tree of pathogens. Mr. Reimer stated this needs to be proved or disproved.

It was moved by Mr. Bill Tos, seconded by Mr. Joe Bezerra, to recommend the project for funding. The motion passed unanimously.

Walse/Treatment of stone fruit to Australia with methyl bromide or phosphine to eliminate the possible introduction of Peach Twig Borer – Mr. Van Sickle reminded the group that Dr. Walse had visited with them at the September 2009 meeting and was working on the PTB Australia project. He reported a TASC grant had been secured for this project, but a small amount of funding is needed in order for Dr. Walse to purchase fruit, which is not covered under the TASC grant.

It was moved by Mr. Michael Reimer, seconded by Mr. Ty Parkinson, to recommend the project for funding. The motion passed unanimously.

Primus/Residue Study – Mr. Michael Reimer reported this project is now starting to pay off with some dividends for industry, as several marketers have started using the results in their marketing programs.

It was moved by Mr. Bill Tos, seconded by Ms. Christeen Abbott, to recommend the project for funding. The motion passed unanimously.

Contingency – Mr. Van Sickle explained the contingency is budgeted at $10,000 for emergency work to occur during the season.

It was moved by Mr. Bill Tos, seconded by Ms. Christeen Abbott, to recommend the project for contingency funding. The motion passed unanimously.

Issues to Discuss at Future Meetings

The Chairman informed that time had been set aside on either February 10 or February 11 for the Subcommittee to meet to discuss the five proposals that need further review. It was the consensus of the Subcommittee to meet at the Kearney Ag Center on February 11, 2010, at 9:00 a.m., which would include the video link with Dr. Byrne at Texas A & M University.

The Chairman asked if there was any other business. Hearing none, he adjourned the meeting at 3:55 p.m.

Respectfully submitted,

Gary W. Van Sickle

Gary W. Van Sickle
Research and Regulatory Compliance

GVS/ss