

California Walnut Board

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CALIFORNIA WALNUT BOARD

RESEARCH COMMITTEE MEETING MINUTES March 1, 2011

The CWB Research Committee met on Tuesday, March 1, 2011, at the California Farm Bureau Federation in Sacramento, CA. Chairperson Jerry Moore called the meeting to order at 10:27 a.m. Ms. Steindorf called the roll and a quorum was established. The following committee members were present:

Jerry Moore, Chairperson
Robert Driver, Vice-Chairperson
Bert Crane
Lynn Morgan
Bill Tos
Pete Turner

Committee member David Keyawa was absent. Also in attendance were David Ramos, CWB Research Director; Bruce Lampinen, Extension Pomologist, UC Davis; and CWB staff member Dana Steindorf.

The first agenda item was the approval of the minutes from the January 28, 2011 meeting. Mr. Driver made a motion to approve the minutes, Ms. Morgan seconded and the motion carried unanimously.

Chairperson Moore introduced the next agenda item, Reports of the PRAC Working Groups. He asked Mr. Driver to report on the joint Genetic Improvement and Plant Pathology Working Group meeting. Mr. Driver stated that the groups met on June 30, 2010 and discussed several ongoing projects and areas of interest, including: the *Juglans* genomics project; marker assisted breeding; clonal rootstock plots; clonal propagation; somatic embryogenesis/mature tissues; transgenic rootstocks; germplasm screening; and *Juglans* pathology (thousand cankers, walnut blight, phytophthora, armillaria, nematodes, blackline and botryosphaeria and phomopsis canker). Dr. Ramos stated that the PRAC Plant Pathology WG had a follow-up meeting on walnut blight on February 1, 2011 since the subject was not very well covered during the June working group meeting.

Mr. Tos then gave the report of the PRAC Entomology Working Group that met on December 16, 2010. The discussion topics were on-going projects and issues including: codling moth and the puffer technology; navel orangeworm; web-spinning mites; walnut husk fly; and biocontrol. The working group decided to focus its priorities on more general topics rather than spend large amounts of time going over specific sub-objectives.

Chairperson Moore gave the report of the PRAC Orchard Management Working Group meeting of August 24, 2010. There were three presentations on sustainability: the first one was from Gabriele Ludwig of the Almond Board of California – she discussed air quality, regulations for soil fumigants, water quality, and the endangered species act; the second presentation was on the Multi Commodity

Sustainability Project from Cliff Ohmart of Sure Harvest - he explained the goals of the project; the third presentation was from Alissa Kendall of UC Davis on carbon footprint – there is a proposal on this subject that the Committee will be discussing today. The working group then discussed what is driving the issue of sustainability – large corporations such as WalMart and Cargill.

Chairperson Moore stated that the Orchard Management working group then discussed other issues such as walnut Farm Advisor support, PDS orchard trials, canopy management, postharvest handling and technology, orchard nutrition, walnut grafting video and current working group research priorities.

Chairperson Moore asked Dr. Ramos to continue with the next agenda item, Sustainability. Dr. Ramos explained that the discussion at the Orchard Management working group was an attempt to address the needs of the processors and handlers to document and justify that the walnut industry is sustainable. He mentioned that Mr. Dave Keyawa, at that working group meeting, suggested that the walnut industry develop an industry-wide approach and not engage the growers in extra work to document practices through surveys and workshops. The Almond Board has developed elaborate sustainability modules and has an environmental committee that receives a substantial amount of money (separate from production research). Dr. Ramos stated that if we wanted to develop a program, Cliff Ohmart of Sure Harvest could be a resource or we could explore the possibility of hiring a person to head up a sustainability project. He mentioned Carolyn Pickel as a possible source as she is retiring from the UC Extension service in June. Carolyn has developed programs on environmentally responsible pest management for prunes, almonds and peaches. A discussion ensued about the industry's need to have a direction in sustainability.

Mr. Tos made a motion to advise Board staff to explore the possibility of hiring Carolyn Pickel to head up a sustainability project and make a report at the next meeting of this Committee. Mr. Driver seconded the motion and it carried unanimously.

Chairperson Moore moved to the next agenda item, Commercialization of an RNA_i-based Crown Gall Resistant Paradox Rootstock: Progress and Next Steps. Dr. Ramos stated that about a year ago, this Committee began discussions about commercializing the transgenic crown gall resistance rootstock. At that time, the Committee discussed running a marketing study to find out if consumers would accept a transgenic rootstock. Before running the marketing study, Mr. Balint needed ammunition; the ammunition that we needed was to document clearly that the graft union is a barrier. Based on that, the Committee approved Dr. Dandekar's project on studying the graft union and transmissibility of gene products. That study began in October 2010 and is on this year's project list as well (it has already been funded).

Dr. Ramos explained that Dr. Dandekar had to create forward grafts (transgenic root from Chandler scion) as well as reverse grafts (Chandler root with a transgenic scion). He will begin the sequencing of small RNA in the next one to two months. The analysis of the movement of small RNA and metabolites in the forward graft will be completed in the next six months; the analysis of proteins requires more tissue and will be completed in the following six months. The reverse graft will be studied during that same period. Dr. Ramos commented that by this time next year, we should have some good data to report on this project.

Chairperson Moore asked Dr. Ramos to comment on the next agenda item, Status Report: Walnut Breeding Program and Geneticist/Breeder Position. Dr. Ramos presented a copy of a letter he wrote to Dr. Chris van Kessel, Chair of the Department of Plant Sciences at UC Davis, regarding the potential loss of the walnut cultivar breeding program due to budget cuts. Dr. van Kessel wrote back to Dr. Ramos indicating that he is well aware of our interest in the situation. Dr. Ramos explained that decisions on staffing are made by faculty in departments, not by deans or the administration. He has been told that the letter he wrote to the Chair of the Department is sufficient for now; it can be counter-productive if we push too hard. The Department will develop an academic plan over the next couple of months, and so far, we have been at the top of the list for the next hire of a geneticist/molecular biology person. Dr. Ramos will report at the next meeting on progress.

A discussion ensued about the transgenic rootstocks that Chuck Leslie has ready to plant. Dr. Ramos explained that they are ready to go to the field; Dan Kluepfel has suggested putting them on campus land that is available. Mr. Leslie feels strongly that we need to have information about how the transgenic rootstocks perform in the field. Dr. Ramos asked the Committee if they have any objection to the field trials; the Committee agreed that they have no objection.

Chairperson Moore asked Dr. Ramos to begin discussion about the next agenda item, Review and Decisions of FY 2010/2011 Research Proposals. Dr. Ramos first distributed a revised proposal for project #18 to be reviewed today. Chairperson Moore stated that the Committee, at their September 9, 2010 and January 28, 2011 meetings, approved projects totaling \$324,998. The total budget available for 2010/2011 is \$1,042,000; the remainder available to be allocated is \$717,002. Dr. Ramos distributed a document listing his funding recommendations for the Committee based on research needs and priorities. His funding recommendations total \$711,517, within the amount still to be allocated.

The Committee then went through each project and made funding recommendations as follows:

		<u>Budget Request:</u>
<u>GENETIC IMPROVEMENT</u>		
1.	Walnut Improvement Program – 92 WMB 2	
	Leslie (Ongoing with review)	302,230
<p>Dr. Ramos explained that the budget was increased significantly from last year due to the need for an additional person to replace the loss of Gale McGranahan. Dr. Ramos recommended that the Committee approve this project at \$292,230 with a consulting contract for Wes Hackett of \$10,000 for eight months. Mr. Driver made a motion to approve funding as recommended by Dr. Ramos. Mr. Tos seconded the motion and it carried unanimously.</p>		
2.	First International Symposium on Wild Relatives of Subtropical and Temperate Fruit and Nut Crops – 11 CWB 1	
	Aradhya/Kluepfel (New 1 of 1)	3,000
<p>The Committee approved this project at the budget amount requested.</p>		
3.	Walnut Genome Analysis – 11 CWB 2	
	Dandekar (New 1 of 1)	30,000
<p>The Committee approved this project at the budget amount requested.</p>		
4.	Regeneration Systems for Pyramiding Disease Resistance into Walnut Rootstocks – 11 CWB 3	
	Dandekar/Preece (New 1 of 3)	54,000
<p>The Committee agreed to fund at \$40,000.</p>		
5.	Crown Gall Resistant Walnut Rootstocks: Analysis of the Graft Union for Transmission of Genetic and Biological Materials – 11 CWB 4	
	Dandekar (New 1 of 2)	60,404

The Committee approved this project at their September 9, 2010 meeting.

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| 6. | Clonal Propagation of Walnut Rootstock Genotypes for Genetic Improvement – 11 CWB 5 | | |
| | Leslie/Hackett | (Renewal 1 of 4) | 65,500 |

The Committee approved this project at their January 28, 2011 meeting.

PLANT PATHOLOGY/NEMATOTOLOGY

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| 7. | Etiology and Management of Crown and Root Rots of Walnut – 11 CWB 6 | | |
| | Browne | (Renewal 1 of 4) | 23,500 |

The Committee approved this project at their January 28, 2011 meeting.

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| 8. | Generation and Evaluation of <i>Juglans microcarpa</i> Hybrids and Paradox Rootstock Selections for Crown Gall Resistance – 11 CWB 7 | | |
| | Kluepfel | (Renewal 1 of 4) | 27,000 |

The Committee approved this project at their January 28, 2011 meeting.

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| 9. | Genomic and Horticultural Approaches to Manage Blackline Disease in Walnuts – 11 CWB 8 | | |
| | Sudarshana/Rowhani | (Renewal 1 of 4) | 40,000 |

The Committee approved this project at their January 28, 2011 meeting.

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| 10. | Methyl Bromide Alternatives – 11 CWB 9 | | |
| | McKenry | (Renewal 1 of 4) | 24,000 |

The Committee approved this project at their January 28, 2011 meeting.

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| 11. | Epidemiology and Management of Walnut Blight – 03 WMB 7 | | |
| | Adaskaveg | (Continuing 4 of 4) | 55,000 |

The Committee agreed to fund this project at \$52,000.

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| 12. | Walnut Blight Control Using Integrated Pest Management – 11 CWB 10 | | |
| | Buchner | (Renewal 1 of 2) | 12,861 |

The Committee agreed to fund this project at \$11,861.

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| 13. | Engineering Rootstock Transmitted Resistance to Walnut Bacterial Blight – 11 CWB 11 | | |
| | Dandekar | (New 1 of 3) | 69,268 |

The Committee did not fund this project.

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| 14. | Studies on Thousand Cankers Disease of Walnut in California – 11 CWB 12 | | |
| | Bostock/Seybold | (New 1 of 2) | 42,804 |

The Committee did not fund this project.

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| 15. | Managing Botryosphaeria and Phomopsis Cankers in Walnut and their Interaction with Walnut Scale – 11 CWB 13 | | |
| | Michailides | (New 1 of 2) | 26,150 |

The Committee did not fund this project.

ORCHARD MANAGEMENT

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| 16. | Walnut Orchard Management: Pilot Projects, Field Testing, Adaptive Research and Problem Solving by CE Farm Advisors and Specialists – 92 WMB 1 | | |
| | Lampinen | (Ongoing with Review) | 49,033 |

The Committee agreed to fund this project.

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| 17. | Refining the Relationship between Canopy Light Interception and Yield in Walnut – 09 CWB 1 | | |
| | Lampinen | (Continuing 3 of 4) | 30,431 |

The Committee agreed to fund this project.

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| 18. | Root Growth Dynamics and Constraints on Aboveground Growth and Yield of Walnuts – 11 CWB 14 | | |
| | Comas | (New 1 of 3) | 31,074 |

The Committee agreed to fund this project.

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| 19. | Walnut Culture and Management – 11 CWB 15 | | |
| | Grant | (New Ongoing with Review) | 24,000 |

The Committee agreed to fund this project.

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| 20. | A Life Cycle Assessment of Energy and Greenhouse Gas Emissions for Walnut Production in California – 11 CWB 16 | | |
| | Kendall | (New 1 of 1) | 36,093 |

The Committee did not fund this project.

ENTOMOLOGY

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| 21. | Biology and Control of Walnut Husk Fly Using Reduced Risk Products – 11 CWB 17 | | |
| | Van Steenyk | (New 1 of 3) | 59,482 |

The Committee did not fund this project.

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| 22. | Pheromone-Based Codling Moth and Navel Orangeworm Management in Walnuts – 10 CWB 2 | | |
| | Pickel/Grant/Connell | (Continuing 2 of 3) | 37,000 |

The Committee agreed to fund this project.

- 23. Optimizing Puffers for Control of Codling Moth in Walnuts: Reducing Program Costs without Loss of Efficacy – 11 CWB 18**
Welter (Renewal 1 of 1) 49,034

The Committee agreed to fund this project.

- 24. Releases of Sterile Codling Moth to Supplement Pheromone Mating Disruption – 11 CWB 19**
Welter (New 1 of 1) 21,517

The Committee did not fund this project.

- 25. Selective Pesticides and Biological Control in Walnut Pest Management – 11 CWB 20**
Mills (Renewal 1 of 3) 21,726

The Committee agreed to fund this project.

- 26. Biological Control of Spider Mites in Walnuts – 11 CWB 21**
Welter (New 1 of 1) 30,128

The Committee agreed to fund this project.

Mr. Driver made a motion to approve the following projects at the budget amounts requested unless otherwise noted: #1 (approved at \$292,230 with a \$10,000 consulting contract for Wes Hackett), 2, 3, 4 (at \$40,000), 11 (at \$52,000), 12 (at \$11,861), 16, 17, 18, 19, 22, 23, 25, and 26. Projects #5, 6, 7, 8, 9, and 10 were also approved at earlier meetings. The total budget amount of all projects and consulting contracts approved by the Committee for 2010/2011 came to \$1,036,515. Ms. Morgan seconded the motion and it carried unanimously.

The next agenda item was Recommendation to the Board for Research Funding for 2011/2012. The Committee discussed several projects and expenditures that will continue next year. Mr. Tos made a motion to recommend to the Board a Production Research budget for 2011/2012 of \$1,036,000. Mr. Crane seconded the motion and it carried unanimously.

The time and place of the next meeting will be at the discretion of the Chairperson and staff.

An executive session was not necessary. Hearing no further business, Chairperson Moore adjourned the meeting at 3:21 p.m.