

**USHBC RESEARCH COMMITTEE
MEETING MINUTES
March 2, 2007**

USHBC Research Committee Chairman Dave Brazelton called the meeting of the USHBC Research Committee to order at 2:30 pm on Friday March 2, 2007. The meeting was held at the Hilton Walt Disney World in Orlando, Florida. Committee members Amy Howell, Leslie Wada, Brian Caster, Dave Trinka, Mike Mainland and Parm Bains were in attendance.

Dave Brazelton opened the meeting by adding an additional 7 items to the agenda: PETA update, Blueberry Powder, Compendium Funding, Ehlenfeld Request, Placebo Development, Engaging USDA Decision Making Process, and Research Publication Management.

Standardized Product for NIST

Leslie Wada reviewed the latest correspondence from Kathleen Sharpless of the National Institute of Standards and Technology (NIST) in which she stated that she was planning to measure organic acids and anthocyanins and wanted to know if any of the members would be interested in assisting in this process. Amy Howell expressed surprise that they did not have the analytical procedures already established and suggested that Wada ask her what they have done for other berries as ideally one would want to see the same lab used for all of their standards. Even though we have measured anthocyanins, phenolics, ORAC and other nutrients, it was proposed that we do not share this data until they have run their own tests. Mike Mainland also suggested we find out what other substances they are measuring for besides organic acids and anthocyanins.

Berry Nutraceutical Symposium 2007 Update

Wada presented an update on the International Berry Health Symposium. The Program Committee is still looking for more sponsors. Susan Davis of WBANA is chairing the PR subcommittee, which Ruth Lowenberg (Lewis & Neale PR) is a member of. Separate PR sheets are being developed for each berry. Our sheet will have to be approved by USDA. Willy Kalt is scheduled to speak on the "Distribution of Anthocyanins in Body Tissues After Long Term Blueberry Feeding" which appears to be the information from the Milbury/Kalt pig tissue analysis study. Howell mentioned that there might be some controversial talks (e.g. Dr. Crozier's work suggesting lack of anthocyanin absorption, Prior's work with rats gaining weight with blueberry feeding). Dave Trinka suggested that questions need to be raised if questionable statements are made. Leslie Wada will be in attendance.

USHBC Research Study Progress Reports and Final Reports

Wada reported that Dr. DeCabo has submitted a draft report on his study titled, Complex Learning Performance in Blueberry Fed Rats Following Post-Partem Neonatal Ischemia. There was no significant effect on the learning performance of rats born to mothers who were fed blueberries or in those who were given a blueberry diet after birth. The authors conclude that the results may be due to factors such as inadequate ischemia and damage or perhaps the age of the pups allowed them to overcome deficits. Howell felt that this was surprising since this is an area he should be very familiar with. She suggested that Wada contact him to get more information on the study from

him, and ask if he plans to publish the results. As this report was a draft, there was some missing information such as the data on plasma and tissue antioxidants.

Wada reported that Dr. Arjmandi submitted a final report describing his study, Blueberries: Impact on Bone Strength. There was a slight effect of blueberries at the highest dose on bone architecture but no effect on bone loss. He has written up the results from his preliminary study that he conducted prior to receiving funding from USHBC and is submitting that for publication. In that study he found that blueberry could prevent bone loss. When asked by Wada, he stated that he used blueberries in this first study that he received from USHBC, but no one in the committee recalls providing any blueberries, and the powder was not available at that time. Wada is to call him again to get more information on the blueberries used in the first study.

Wada reported that Dr. Milbury has finally received his anthocyanin standards despite being held up by security at the NY airport. By now he should be have started analyzing the remaining pig tissue samples. A technician from Willy Kalt's lab will be spending time in Dr. Milbury's lab in order to help with the analysis.

Wada just received an email from Dr. Willy Kalt giving more information on her vision study. They have 60 people enrolled in the new vision study. All of them participated in the first study. There will be two age groups, slightly older groupings than the first study. The participants will be on blueberry juice or placebo for 3 months, followed by a 2-month washout, followed by the remaining treatment. There will be two vision tests in each treatment and washout period. The dark adaptometry test has been modified to make the test easier which should result in better quality data. The first of 3 pre-tests began on Feb 26. They will start consuming the juice or placebo on April 20 and testing will begin 8 weeks later. Willy also sent a description of some animal work conducted by the co-investigator, Dr Tremblay. These studies were indirectly supported by USHBC in that the funds used were provided by Agriculture Canada and Agri-Food Canada as matching funds to the original funds provided by USHBC in the first vision study. They conducted a study using a rat model of retinal degeneration induced by prolonged exposure to bright light and measured retinal function using electroretinography (ERG). Rats were fed either 4.25 mg or 8.5 mg anthocyanin/kg body weight. Exposure to bright light reduced the ERG in the control and 4.25 mg group, but not in the higher anthocyanin group. They actually had higher ERG than controls. Additional studies suggested that although the anthocyanins protected against the retinopathy, there was no effect once the damage had occurred. In another study when rats were given a brighter light for a longer period, retinal activity decreased to a greater extent (84%) however the rats fed the higher anthocyanin dose showed a decrease of only 35%. Given these encouraging preliminary results her group would like to conduct more preliminary studies in order to strengthen a proposal they will submit to the Canadian Institutes of Health Research. She has asked if the USHBC would be willing to provide \$25,000 to fund these additional studies that would look at blueberry dosage, duration of feeding, other models of retinopathies and other cell types in the retina. Dave Trinka moved that we ask that she submit a full application for consideration and that we verify that highbush blueberries will be used. The motion was seconded by Mike Mainland and was approved.

Dr. Losso has submitted a progress report for his project entitled, A Systemic Study of the Synergistic Effects of Blueberry Phytochemicals Against Age-Related Macular Degeneration. He has seen significant effects of blueberry powder and blueberry anthocyanins on reducing

angiogenic proteins in retinal pigment epithelium cells that may have an effect on age-related macular degeneration. He outlined work to be finished by June 2007. Amy Howell suggested that he be allowed to omit the task of determining the anthocyanin profile of the blueberry powder since that information is already known and he may be able to use the funds for other work.

There was no update on Dr. Joseph's past or current project.

Dr. McGuire's manuscript describing her previous study was discussed. Mainland asked if publicity on this manuscript could be increased through Loyola similar to the way Tufts publicizes Joseph's work. Howell suggested that information could also be disseminated through Parkinson's organizations. Wada will contact Dr. McGuire to see if she would work with Loyola to publicize her work. It was also suggested that she might want to present her work at the meeting in Minnesota.

Dr. Demirci's final report had already been circulated. There were no further comments. It will be sent to the Food Safety Committee.

The revision of the final report for Dr. Todd's study was received. It will be sent to the Food Safety Committee.

Review of 2007 Research Budget and Funds Committed to Date

The budget was reviewed with the recommendation of considering a possible increase of the Blueberry Research Bank item from \$10,000 to \$15,000 if another batch of powder needs to be produced. There was clarification that the \$5,000 allotted to Blueberry Research Travel is for inviting speakers to present at the Council meetings.

Review of 2007 USHBC Research Proposals; Study Selections and Finalization of 2007 Research Budget

The brief comments of the outside reviewer were discussed. The projects were sent to Dr. Ahmann, a diabetes specialist, but no comments have been received yet. If they come and there are major issues to discuss, a conference call of the research committee will be held. It was suggested that in the future, reviewers should be selected based on their expertise on the topic of the proposals.

The proposal by Dr. Obin was discussed. Mike Mainland moved that we approve it pending any negative comments from Dr. Ahmann. Brian Caster seconded the motion and the motion carried.

The proposal by Dr. Bolling was discussed. There was discussion on the possible comparison to cherries since this group conducted a similar study with cherries which should be published soon. Howell cautioned against their overemphasis on anthocyanins as the primary factor. There was also discussion and questions about the composition of their rat diet. They propose using a 1% blueberry diet but Joseph and others have used 2%. Wada will contact them and ask them to reconsider. Dave Trinka moved to approve funding and Mike Mainland seconded, the motion carried. .

The committee discussed Dr. Basu's proposal entitled, Chronic Effects of Freeze-dried Whole Blueberry Drink Consumption on Biomarkers of Lipid Peroxidation and Inflammation in Subjects with Metabolic Syndrome (MeS). This study involved a very high usage of our blueberry powder (~495 lbs) and Amy Howell felt that the placebo described in the proposal would not be acceptable. Dr. Basu offered to decrease her dose to 100 g but that would still be high. Dave Brazelton suggested she use a juice but that would require working with a juice manufacturer. It was suggested that she use 2 cups of frozen blueberries perhaps in a sorbet and not use a placebo. Mainland motioned to approve pending finding an appropriated delivery method and Dave Trinka seconded. The motion carried.

The cost of the 3 approved studies is \$133,000. An additional \$70,000 was earmarked for the Pennington diabetes study, which may also have problems with subjects consuming a large amount of powder.

Howell brought up the issue of the drug-food interaction situation in which there was a patient taking the blood thinner warfarin who died due to high levels of warfarin. The patient had been drinking large amounts of cranberry juice and it was speculated that the cranberry juice interfered with the deactivation of warfarin, thus allowing levels to build to toxic levels. Subsequent studies by Dr. David Greenblat at Tufts showed that the specific level of interaction between cranberry juice and the cytochrome p450 enzymes did not support this claim. Amy suggested that we take a proactive approach and look at blueberry and drug interactions. She will approach Dr. Greenblat and investigate the cost of doing this type of research.

Discussion of USHBC Position Statement on Blueberries on Health in Light of Third Party Health Claims.

Brazelton stated that we can't develop position statements without further understanding from the USDA. Dave Trinka suggested that we have an obligation to monitor claims and refer them to the FDA until the USDA can give us further clarification.

Engaging USDA Decision Making Process

Brazelton suggested that we may need to visit USDA to meet and clarify the decision making process. Approval for statements has been arbitrary and the process has changed with changes in the administration.

Ehlenfeld Request

Brian Caster has communicated with him. He would like funding for release of a new blueberry selection. The committee voted against this funding and Dave Brazelton will draft a letter to him.

Compendium Funding

A request for \$1,000 has been submitted for helping to fund the revision of the Compendium of Blueberry and Cranberry Diseases. Mainland noted that there is no major author from the South. Since this resource helps farmers, it was motioned by Mike Mainland that we support them with

\$1,000 but encourage them to include an author from the Southeast region. Brian Caster seconded the motion and the motion carried. .

Wada described a request for powder from researchers at the University of Kansas. Three cans were sent for a rat study to look at longevity and skin changes with aging. The researchers are also feeding the rats green tea and pomegranate juice along with the blueberry powder. They will need an additional 14 cans in the future that they will be charged for.

Rafael addressed the committee and described the changes in personnel within his office. If we want to schedule a meeting, we should send him possible dates and cc the request to Sonia Jimenez@usda.com.

PETA

Amy Howell felt that it was less of an issue, as we have not received a second letter.

Managing Studies

Brazelton brought up the concept suggested by Howell of formulating a matrix of all the types of studies we have funded to see which areas we have built up a significant database. Wada will work on that and present a draft at our next meeting.

As it was approximately 6:30pm, the meeting was adjourned.