

**MINUTES
TCJJP
SEPTEMBER 26, 2002
LOS ANGELES, CA**

I. INTRODUCTION

Chairman Martin Stutsman called the meeting to order. The minutes of the May 2, 2002 Arlington, VA meeting were approved. New members were welcomed and introductions around the room were made.

II SECRETARY-TREASURER REPORT

Secretary Treasurer, Kristen Gunter, reported that the balance to the TCJJP account was \$15840.62 as of 9/3/02 and paid memberships as 9/26/02 showed 29 members. 23 persons (including guests) attended the meeting in Los Angeles. An attendance list with emails was collected.

III. UPDATE ON RESEARCH GRANTS

A. BMIS by HPLC-PAD: David Hammond reported that Nick Low completed his work on developing an HPAF-PAD or capillary gas chromatographic- flame ionization detection (CGC-FID) method to detect the presence of beet medium invert sugar to apple juice concentrate. Both approaches were unsuccessful in identifying a fingerprint oligosaccharide in BMIS. The identification of peak ratios of two peaks in the CGC-FID chromatogram showed promise but results were inconclusive in the work done to date. Additional work would be needed to develop this approach. A copy of the report is available upon request. The work was funded by PAI, NJPA and TCJJP. TCJJP was not mentioned as a sponsor and will request credit as a sponsor. Consideration of additional work on the method to see if marker peaks for BMIS can be distinguished from peaks caused by heat was deferred until next meeting. **Action:** Contact Dr. Low for TCJJP sponsorship credit in future publications.

B. Total Anthocyanin Summary- Dr. Ron Wrolstad and Jungmin Lee of Oregon State reported that progression on this work (which was started years ago and funded by TCJJP) was somewhat thwarted since the data submitted to AOAC of the in-house study was lost. Since then, protocols for experiment design have been changed by AOAC and suggestions made that the study be redesigned and reconducted. Wrolstad reported that he had a list of 12 collaborators. David Hammond is the General Referee and is working with Wrolstad.

ACTION: Approved up to \$2000.000 to reimburse initial out of pocket cost for shipping and handling. Invoice with detailed actual costs to be

sent to TCJJP Treasurer Kristen Gunter for payment. Wrolstad agreed to provide regular updates in progress.

IV. **PRESENTATION BY US CUSTOMS ON COUNTY OF ORIGIN
COUNTY OF ORIGIN DETECTION IN APPLE FRUIT**

Dr. Peter Sandusky of US Customs, Savannah, GA made a presentation explaining the work being done by US Customs to develop methods to identify the county of origin of apple juice. This type of work by Customs has the interest of US Customs since their mission includes the enforcement of tariffs and antidumping orders. In the case of apple juice, the US tariff for apple juice from some countries is 0% and from China, over 50%, so there is a strong economic interest to misrepresent the origin of Chinese apple juice and avoid the payment of duties. US Customs is looking at a series of ways to predict origin, including trace metals and elements with ICPMS, light stable isotope analysis, SNIF-NMR and IRMS. In the work with light stable isotopes, they focus on the geographic variation of rainwater and the isotope ratios associated with the water and sugar in apple juice. Sandusky indicated that the use of carbon stable isotope ratios as probes for geolocation using plant material has shown promise. Sandusky also showed with just a few data points that apple juices from New Zealand tended to have different C¹² and C¹³ ratios than juices from South Africa or from New Zealand. Similar trending was seen when sugar ethanol methyl was looked at. These methods could be developed as useful tools to the alternative methods using trace metals. Dr. Sandusky indicates at this point, there was no regulatory database for apple juice from China. In discussion, TCJJP members raised questions of data base sample authenticity when often apples can be commingled in juice production from various countries and bulk juice is also commingled. Since the distinguishing feature with the stable isotopes are related to “weight” (i.e. German apple juice isotopes will be “heavier” than Chinese), the addition of BMIS to apple juice could make “heavier” juices look more like Chinese juice. Concerns were expressed that incomplete understanding of the limitations of these methods as well as in adequate databases made these methods unpredictable enforcement tools At this point. Dr. Sandusky was invited to join TCJJP, thanked for his excellent presentation and members stressed that comments were all intended to be constructive. No Action

V. **Collaborative and other research:** Status reports

1. **CAP-GC heat v. beet second NFPA paper:** David Hammond reported that Nick Low will resubmit his paper to AOAC.

2. **Phlorin, Didymin and Narirutin by CZE and HPLC:** Paul Cancalon was authorized reimbursement of actual supply and handling costs up to \$1500.00 for his collaborative study. Any invoices for actual expenses are to be sent to TCJJP treasurer, Kristen Gunter.
3. **Anthocyanins:** Dr. Wrolstad's report seen is sec. III (B) above.
4. **Limonin in orange juice by HPLC-CT8:** David Hammond reported that this IFU-TCJJP collaborative effort continued to show problems with poor replications between labs. Interest in the method may also be waning.
5. **Polyphenols:** Tom Eisle reported with the HPLC method, there have been issues with the stability of standards and he was not taking his work forward to a collaborative study. Sue Martin reported that the polyphenal work from NFPA had been located. It will be given to Tom Eisle to look at. **Action-** Tom Eisle to report back.
6. **CAP-CE for organic acids:** Sue Martin reported that Paul Cancalon's Capillary Electrophoresis method to analyze organic acids was rugged and seemed to work quite well. Steve Kupina's attempt at a PVM for his method for acids using CZE has been dropped. Any questions should be directed to Steve Kupina.
7. **Stability of apple juice concentrate:** Tom Eisle reported that his 12-month storage study was complete. 8 labs participated. Samples were tested over time for polyphenolics, patulin, O-Malic, sugars & minerals. While there was some minor change in the values for polyphenolics, the other analytes showed little change during the 12 months of storage. **Action:** Tom Eisle will contact NIST and report back on the costs involved with development of standards for the constituents tested.

VI. **TCJJP database/website update:** Eric Wilhelmsen reported that he will add links to the TCJJP website, and post the current list of fruit juice methods that are organized as an appendix to the draft Codex fruit juice standard **Action:** Kristen Gunter to send Codex appendix to Eric Wilhelmsen for inclusion in TCJJP website. **Action:** Authorized \$3000.000-\$5000.00 to Wilhelmsen to put remaining data into the TCJJP database from the website. **Action:** Wilhelmsen to complete the work by next meeting and will attempt to be prepared to have database access demonstrated at the Spring TCJJP meeting.

- VII. **Update on proposed AOAC Fee Structure for method validation:** Lars Reiman reported the AOAC has proposed a fee structure of \$35,000.00 per method validation. No Action.
- VIII. **PAI Update:** Steve Cockram advised that PAI's latest focus was reviewing the new FDA HACCP Guidance document.
- IX. **Proficiency Testing:** Greg Joseph reported that his survey requesting interest in the testing that analytical performance of labs showed approximately 20 companies/labs would be interested in such a program. It was pointed out that periodic performance testing was required by ISO 17025 and any program designed should meet ISO guidelines. Several supplier options were estimated at approximately \$200 per test, including shipping. Members agreed there was little advantage to a closed system. TCJJP would suggest what analytes and the priority of juices to be tested in the program. **Action-** Susan Martin, Greg Joseph, and Lars Reiman were asked to make a supplier and program recommendation at the next meeting, so the program could be ready to go in the spring.
- X. **Workshop Planning:** Members discussed the fact that no plans were underway yet for the workshop that had been discussed in conjunction with Pittcon, which will be held in Orlando in March 2003. Members agreed that \$250.00 would be charged and a consultant should be hired to make the arrangements. Action-Betsy Woodward first option (or George Fong) would be contacted to see if there was adequate time to plan a workshop at Pittcon site. A fallback plan would be the ACS Meeting in the fall. Members would be advised of early decisions based on contact reports. TCJJP Authorized a consultant fee of \$3000.00 to \$5000.00 to put workshop together. Proceeds from participation could offset the cost of the consultant. The workshop would focus on analytical interpretation. (After meeting note: The Spring Pittcon workshop idea was cancelled since it was too late to organize with Pittcon).
- XI. **Update on EC study on apple, orange, and pineapple juice:** David Hammond reported this \$1.5 million, 3 year, study is publicly funded with 7 participating labs to test samples and compile data that could be used to predict origin, detect the addition of core wash and peel wash in juice, etc. It is only the third month of the study with no results to report.
- XII. **SGF/IRMA Code of Labeling For Raw Materials:** Ian Howard presented the model drum label program initiated by SGF/IRMA. The program specifies information to be included on fruit juices used in manufacturing on bulk containers. Eleven information fields include the following information: Additives; Product Code; Acidity; County of origin; Traceability information; Storage Directions; Fill Date; and Net Weight.

Howard reported that the Code's model label is beginning to be used, particularly by SGF members. The Code is expected to evolve so that bar coding will be added. The Code and model label is designed to standardize labeling practices to enhance information, communication and traceability by customer and vendor.

- XIII. **Results of Elections:** Secretary Kristen Gunter announced that balloting results showed Paul Cancalon, Lars Reiman, and Steve Kupina to be elected. Retiring board members Ian Howard, Carla Barry & Steve Cockram were thanked for their service. Effective immediately, the following persons are the officers and board of TCJJP:

Chair, Martin Stutsman- (September 2001-September 2003)
Chair Elect, Susan Martin- (September 2001-September 2003)
Secretary-Treasurer, Kristen Gunter- (September 2001-September 2004)
Board Members (3 year terms)
Paul Cancalon- (September 2002-September 2005)
Lars Reiman- (September 2002-September 2005)
Steve Kupina- (September 2002-September 2005)
Stacie Hammack- (September 2000-September 2003)
Greg Joseph- (September 2001-September 2004)
Mike McLaughlin- (September 2001-September 2004)
David Hammond- (previous chair no vote end September 2003)

- XIV. **Next Meeting:** The next meeting will be held in Orlando, Florida tentatively scheduled for the week of March 9, 2003. Details, data and location to follow.

- XV. **Other Business:** Andree Behrens of Foss N.A. presented results of a Fourier-Transform infrared spectroscopical method which can determine various parameters of fruit juice (such density, Brix, pH, total acid, malic acid sorbit and sucrose, The apple juice sample described was analyzed directly (without sample preparation) in less than two minutes. Contact Andree Behrens for more information. 952-974-9892 x125