

TECHNICAL COMMITTEE FOR JUICE AND JUICE PRODUCTS
Minutes of Meeting Held in Kansas City
on 13th September 2001

The meeting was called to order by the Chairman, David Hammond @ 9.05. The minutes of April's TCJJP meeting were approved.

1) Membership & treasures report

At the meeting there was no membership or treasurer's report to present due to the terrorist problems on the East Coast of the United States, but the following detail was added after the meeting. There were 30 paid up members as of the 13th September. The bank balance stood at \$13,902 as of August 2001. This covered incoming payments to the account from membership fees and out goings, mainly to Eric, for on going work to the Web page. The Secretary-Treasurer is in correspondence with the IRS to request and Exempt Organization Determination Letter.

2) Grants

2.1) **Grant to Prof Low University of Saskatchewan:** David Hammond reported on behalf of Prof. Low on the work that he had been conducting with funding from the TCJJP, NFPA, NJPA & PAI. He has hired a student and she has been looking at the separation of the peaks from BMIS and those found in apple juices. He has found one peak which is present in BMIS and not in apple juice. However, this peak elutes as a shoulder of another peak in apple and it could be difficult to detect the BMIS peak in some apple juices if they contain high levels of this natural component. To date a wide range of solvent gradients have been attempted to separate these two peaks but so far an ideal solution has not been found. He is considering using PA-100 columns rather than PA1 used to date to see if this improves the resolution.

2.2) **Grant to Prof. Ron Wrolstad Oregon State University:** David Hammond also reported on the communications that he had with Prof. Wrolstad concerning the analysis for total anthocyanins in red black juices using a pH differential method. This method had been submitted to AOAC for collaborative testing. However, this has been held up in the "new world" order at AOAC that may require payment for doing collaborative trials (see section 14 for more information on this issue). The test involves the measurement of the spectral absorbances of solutions at two pH values, one which is characteristic of the coloured oxonium ion and the other at which the anthocyanins are in their colourless hemiacetal form. Under these conditions the presence of polymeric degraded pigments and other interfering materials can be assessed. The study will involve 12 labs most of which are TCJJP members. It will be processed through AOAC in due course.

3) **Overview of US Customs Service Lab in Savannah GA by Carson Watts.** The work of this laboratory was to be reviewed by Dr. Watts who heads up the lab. However, due to the security problems of the week, Mr. Watts was unable to attend the meeting. The lab is about to undertake a research project to determine if the origin of apple juices, particularly those from China, can be determined using trace minerals, by ICP, and isotopic methods (deuterium & carbon). DAH will contact him to see if he would be able to come along to our next meeting to give us this overview.

4) **Reference Material Preparation Development:** Storage of an apple juice concentrate has been undertaken by Tom Eisele. Samples were sent out at time = 0 and 6 months and will be

sent out shortly for analysis after 12 months storage. The analysis of the samples suggested that there was probably more variation in the data seen from the various labs involved than seen in the sample after 6 months storage. Tom will collate the final set of data prior to the next meeting so that this can be discussed there. At that point we will decide if we want to pursue the NIST route to supply this type of material as a reference control. Work has been done in this area by the Bureau de Commission de Reference (BCR) in Europe and it was found very difficult to prepare a stable material which could be sold as a reference standard with defined analytical values.

5) ***Collaborative & Other Research (update):***

5.1) *Cap-GC method heat vs beet second NFPA paper:* The second paper which was rejected by J. Agric. Food Chem., as the original draft was considered not to be original enough, has been re-drafted by one of the authors and is still under review by another of them prior to re-submission to either J. Agric. Food Chem. or possibly J.A.O.A.C. I. **NHL & DAH**

5.2) *Phlorin, didymin & narirutin by CZE & HPLC:* The HPLC method will be adapted from a French approach used for the analysis of phlorin and the CZE method is available from Paul Cancalon. These will be distributed along with three samples to assess the methods compatibility during the winter with a review at the next meeting in the Spring. **PC & DAH**

5.3) *Assessment of total anthocyanins* See 1.b above

5.4) *Limonin analysis by HPLC (IFU/TCJJP collab):* Jonathan Hache' gave a report on this study, data from eight labs had been returned. However, a number of laboratories reported difficulties with obtaining appropriate separation between juice peaks and limonin using the CN bonded column and it was found to be highly dependant on the type of CN bonded column used. The data will be forwarded the DAH for statistical analysis. **JH & DAH**

5.5) *Polyphenols by HPLC:* In the initial study, conducted by Roy Lyon, it was found that the CV for the analysis of most of the components were between 20 & 100% and in some cases even higher which was unacceptable. Also as the collaborative study was run using acetic acid as an acidulant in the mobile phase, rather than the original phosphate buffer proposed by Kirksey and Wade, a lot of the useful spectral information available for arbutin was lost due to the higher UV cut-off of this solvent.

One other problem that was also felt to have been a limitation in this original study at the time was the variable quality of the standards available from Sigma/Aldrich for some of the standards. However, it seems if standards of higher, more controlled quality, are now available from Chromadex in New Jersey. It was proposed that the method should be repeated using the phosphate buffer. However, due to changes in peoples' jobs there is a need for an AR to run this collaborative study. **Undefined**

5.5.a) A copy of the presentation given by Roy Lyons at the 2000 AOAC meeting in Houston was obtained from NFPA. I-Pin Ho from NFPA will look through Roy Lyon's files at NFPA to see if he could find original raw data from the original collaborative study. **IPH**

5.6) *CZE for organic acids:* Steve Kupina reported that only one set of data had been returned for the PVM study. Also not all of the instructions were followed in the study so the PVM will

have to be repeated if it is felt worthwhile to carry it out. If it is repeated it we will have to be stressed the need to follow the PVM instructions. **SK**

5.7) *Patulin study using SPE rather than Solvent extraction:* Tom Eisele reported on some data that he had collected using a method examined by Mary Truckass at the FDA. This uses an Oasis solid phase extraction cartridge sold by Waters. This study looked at the analysis of patulin in apple concentrates in the various factories within the Tree Top group and it was found that the recovery of patulin using this approach was significantly improved up to *ca* 95% and it reduced the laboratory variation by half. Mike McLaughlin will discuss with Mary Truckass about whether she would like to conduct a PVM using this modified approach for patulin. If she does not TCJJP may pick it up and conduct a PVM. **MM & A N other**

6.0 Election for Board places:

The results of the election recorded by ballots received at the meeting and via mail are as follows (final tabulation by the TCJJP Secretary after the meeting):

Susan Martin	Chair elect	term 2001-2003
Greg Joseph	Board seat	term 2001-2004
Mike McLaughlin	Board seat	term 2001-2004

The Chair congratulates Susan, Greg & Mike and thanks the other candidates for their willingness to serve.

7.0 TCJJP database:

A discussion was had at the meeting about the usefulness of the database. Although some people had used the database, on a limited basis, most people at the meeting had not. As there was only a limited amount of interest in the use of the database it was the decision of the meeting that further work should be suspended on this topic.

It was felt that the database should be put into such a state that it could be disseminated to any interested parties and it should also be left in a state that if interest is rekindled, at a later date, it could be updated. However, as only a small portion of the membership was present at the meeting this decision should not be considered as binding. If any of the membership has any comments to add to this please contact DAH who will compile them for the next meeting, my e-mail is david.a.hammond@rssl.com.

8.0 Web Site development:

An investigation was made into the cost of moving the Web site to a professional organisation rather than running it as a part time operation under Eric's control. Based upon another quote, it was found that it could cost \$1000 to prepare a new "spiffy" web page as a one time cost and then \$450/year for 3 updates. If we adopted a less original design it could cost approximately \$500 as a one time cost, with a similar ongoing rate for updates. These costs are approximately twice what TCJJP is paying Eric to run the TCJJP Web page at present. Due to lack of people at the meeting, no decision was made. However, while Eric is still willing to undertake this task, the past chair suggests that it be left in his capable hands.

9.0 TCJJP the way forward

This topic will be discussed at the next board meeting. Some suggestions that were put forward for new topics of discussion and leadership in the juice field were:-

- a) To look at defining appropriate HACCP conditions for a juice manufacturer.
- b) To look at microbiological issues for juices.

10.0 PAI update (Lynn Hageman)

There has been discussions within the PAI about the developments within Codex and the parameters which will be defined in the standard when it is published.

There has also been some discussion at PAI meetings about Patulin. Although it appears as if no formal regulation had been published for patulin, setting a maximum level, some authorities were acting on the level at present. Mike McLaughlin will look into this to see if the guidance has been published or when it will be. **MM**

11.0 NFPA Update (I-Pin Ho)

There have been discussions within the membership of NFPA about the developments within Codex and what they will mean for the US industry.

There have also been some new developments within the Japanese market. There have been some new additions to the list of allergenic materials that have to be certified as absent in products exported to Japan. The list now includes 28 items, apart from the expect materials such as peanuts, tree nuts, milk & gluten, it also included apple, orange & peach. The membership did not know that these were considered allergenic. A full list should be supplied by NFPA for inclusion with the minutes. IPH

12.0 An International format for labelling fruit concentrates (Ian Howard)

Ian described some of the developments that are going on in Europe towards standardisation of the labels used on juice concentrates. In Europe this is considered as an important issue to ensure good traceability of samples. During the course of Ian's talk a number of examples were given where problems had occurred where labelling of products was poor or left some things to be desired.

The developments to define this industry standard "Euro" label are being fronted by AIJN who would like these developments to be picked up in other areas around the world so that the label could be used world wide and simplify the labelling requirements for producers and data capture for users.

13.0 Developments within AOAC

As some of you may know there has been a lot of discussion recently concerning the direction that AOAC is taking and the problems that they face financially. DAH attended a number of meetings during the five days of the annual meeting and it appears as if some of the rumours that are circulating are incorrect.

There is a lot of work going through AOAC at the moment from analytical kit manufacturers' seeking AOAC approval for their products. This will take a lot of time and is also felt that it could supply AOAC with some urgently required money. This type of work will receive the highest attention but it will not stop other collaborative studies going ahead. It was stated that there would not be a fee for our normal type of work that required collaborative study. During the meetings the Chair strongly put forward the view that the need to pay AOAC to front collaborative trials when most of the work was conducted by volunteers was unacceptable and could mean less rather than more work for AOAC in the long run.

13.1 Method Categorisation

Another new development within AOAC is the work that has recently been going on to better define categories of methods and the requirements for each of these. The AOAC working party came up with five levels (1-5) of method:

#1: Fully published AOAC method with full collaborative study etc in OMB format to

#5: pre-validated method only requirement a paper or report for rapid communication of methodology which would allow further developments.

There was some discussion that these methods might become available on a web site for perusal, either as partial information or full methods.

It was felt that this would ease the problem of mutual recognition between AOAC, EPA, ISO, CEN bodies. During the meeting it was highlighted that these categories were very similar to those which have been put forward by CCMS, a Codex committee, which has been set up to define criteria for methods for standardisation.

There was also some discussion as to what the difference was between method types 1 & 2 were as both had under gone a collaborative study etc. In some cases it was felt that these would be equivalent and in the view of the meeting AOAC should re-look at this categorisation. A copy of the categories and their separate requirements will be included with the minutes of the meeting for information.

14 Spring meeting of TCJJP 2002

Mike McLaughlin stated that the next meeting would be held in the Washington area in the spring of next year. There were no firm plans as yet but it was hoped to place the venue either in the city or on a convenient Metro line so that people could travel into Washington if they wanted. **Notice of the next meeting will follow to all members and will be posted on the website.**

The Meeting was adjourned at 1pm.