



Conference for Food Protection
Produce Washing Committee
Meeting Minutes October 26, 2017 2-3pm (EST)

Charges:

Committee Charges:

- 1. Review science and public health impact of water treatment options to minimize cross-contamination when using a water bath for washing, rinsing, crisping, processing, and/or other treatments of Raw Agricultural Commodities (RACs) and ready-to-eat (RTE) fruits and vegetables in food establishments;**
- 2. Identify conditions of use, including types of RACs and RTE fruits and vegetables, and methods for assuring efficacy of use;**
- 3. Review applicable rules and regulations pertaining to the use of water and chemicals for washing, rinsing, crisping, processing, and/or other treatments of RACs and RTE fruits and vegetables as it relates to food establishments to avoid creating conflict.**
- 4. Consult with appropriate professional produce trade organizations; and**
- 5. Report back with recommendations to the 2018 Biennial Meeting of the Conference for Food Protection.**

Working Group 1

Charge 1

Working Group 2

Charge 3

Attendance: A. Staroben, K. Matthews, Barbara Ingham; Chris Zetterland; Jane Lipe, Susan Kenrick, Vannesa Cranford

Several non-voting members.

Anna: Welcomed group.

Anna: Attendance.

The final report was sent to all voting members and opportunity for comment was provided. All comments were considered and text modified as appropriate. All members were pleased with final prepared document.

Anna provided background information.

Barb: 2nd page charge #2. Recommend that number of surveys that were returned. Revision will be made.

Preparation of report based on format provided by board.

Should submit by Nov 1. Must prepare issues by Dec. 12th. Suggestions at bottom of document.

Not all committee calls included since limited of scope.

Anna summarizing the written text by each section and requesting comments as we move through the document.

- Create new or re-create the existing committee to address charge #1.
- Will suggest work on the guidance document over the next couple of years.
- Anna noted definition of crisping not included in the food code. The definition of “crisping” was indicated and the potential to include definition of crisping to the code.
- Mentioned presentation that we arranged for interested parties to attend.
- Propose three issues to submit...by Dec. 12th. Perhaps more important than report

Barb questioned the terminology in definition included in food code.

Barb: “used in accordance with manufacturer’s instructions” Will the manufacturer include new information on label specific to crisping. Not certain whether this is appropriate to address at the stage.

Anna: concluded mtg indicating that we will continue with development of issues.

Requested interest in joining group to write issues.

Karl: Send invitation to entire group to work on issues.

Meeting concluded.



**Conference for Food Protection
Produce Washing Committee**

Agenda: July 27, 2017 2:00 to 3:00 PM (EST)

Charges:

Committee Charges:

- 1. Review science and public health impact of water treatment options to minimize cross-contamination when using a water bath for washing, rinsing, crisping, processing, and/or other treatments of Raw Agricultural Commodities (RACs) and ready-to-eat (RTE) fruits and vegetables in food establishments;**
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Working Group 1

Charge 1

Working Group 2

Charge 3

Topic of discussions

- Progress on white paper
- Issues that arose during preparation of white paper
- General discussion
- New business

All the issues discussed were resolved, no additional notes were taken.

Call in Information:

Date: 07/27/17

Time: 2:00 – 3:00 PM (Est)

Call in number: 877-394-5901.

Moderator number is 6800708.

Access code is 3988523.



Conference for Food Protection
Produce Washing Committee
Meeting Minutes May 25, 2017 2-3pm (EST)

Charges:

Committee Charges:

- 1. Review science and public health impact of water treatment options to minimize cross-contamination when using a water bath for washing, rinsing, crisping, processing, and/or other treatments of Raw Agricultural Commodities (RACs) and ready-to-eat (RTE) fruits and vegetables in food establishments;**
- 2. Identify conditions of use, including types of RACs and RTE fruits and vegetables, and methods for assuring efficacy of use;**
- 3. Review applicable rules and regulations pertaining to the use of water and chemicals for washing, rinsing, crisping, processing, and/or other treatments of RACs and RTE fruits and vegetables as it relates to food establishments to avoid creating conflict.**
- 4. Consult with appropriate professional produce trade organizations; and**
- 5. Report back with recommendations to the 2018 Biennial Meeting of the Conference for Food Protection.**

Working Group 1

Charge 1

Working Group 2

Charge 3

Attendance: A. Starobin, K. Matthews, Barbara Ingham; Chris Zetterland; Jill Hollingsworth; Marlene Gaither, Susan Kendrick, Diane Johnson,

Anna: Welcomed group.

Karl: Attendance.

Anna: Will vote on approval of minutes by email.

Presenters for the group.

Jim Gorny – Produce Marketing Association. Presentation: Safe washing and Crisping of Produce. Gave 25 minute presentation. For aspects of the talk please refer to the PDF of the talk.

Q&A. Use of antimicrobials. Can it be done effectively in grocery stores?

Water changing, water antimicrobials, risk assessment.

Water antimicrobials: Prevent cross-contamination. Not trying to reduce microbial load on commodity

When washing: Small volume, one commodity

Anna: Thanked Jim for presentation.

Dan Dahlman – Ecolab Presentation: Q&A for Produce washes and treatments

The group asked questions during the presentation

Open to discussion:

Q. Jill: Antimicrobials: Efficacy hurdles that must be met to claim it is an antimicrobial

Q. Is a requirement 3-log, 5-log reduction

Anna: Meeting adjourned, since time had elapsed.



Conference for Food Protection
Produce Washing Committee
Meeting Minutes April 27th, 2017 2-3pm (EST)

Charges:

Committee Charges:

- 1. Review science and public health impact of water treatment options to minimize cross-contamination when using a water bath for washing, rinsing, crisping, processing, and/or other treatments of Raw Agricultural Commodities (RACs) and ready-to-eat (RTE) fruits and vegetables in food establishments;**
- 2. Identify conditions of use, including types of RACs and RTE fruits and vegetables, and methods for assuring efficacy of use;**
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- 4. Consult with appropriate professional produce trade organizations; and**
- 5. Report back with recommendations to the 2018 Biennial Meeting of the Conference for Food Protection.**

Working Group 1

Charge 1

Working Group 2

Charge 3

Attendance:

Anna: Welcomed group

Karl: Attendance.

Karl: Indicated that sufficient voting members were not present on the call to approve the 3/23/17 meeting minutes that it would be sent out electronically for voting.

- Anna: Introduction of Kris Zetterlund, Director of Quality Assurance with Darden who gave an overview of Darden's current practices as it relates to produce washing in foodservice.
 - Darden several chain locations including Olive Garden, Seasons 52, Long Horn and Capital Grill and their procedures are about reducing and managing risk.
 - The focus is on prevention and traceability utilizing key strategic partners with knowing their suppliers down to the field level. Focusing on the raw material and supply chain is the starting point. They have developed and are using a Supplier Expectations Manual that outlines the best practices their suppliers should be implementing.
 - The distribution chain of partners is defined for where products can be purchased and sourced to the locations. If they run out of product they do permit the locations to go to another restaurant or to a grocer like Wal-Mart for obtaining replacement product.

- The restaurant brands use some washed and some RTE produce at the locations with a wide range of usage.
- Darden does not use any chemical antimicrobial treatment in their washing procedure.
- Cutting Tomatoes:
 - The items that are prepared in-house they focus on preparation temperature for cutting tomatoes and cutting head lettuce, once these items are cut in accordance with the FDA Food Code it becomes a TCS product. Tomatoes arrive pre-chilled and there is not a wash step at the packing houses providing the tomatoes. In some locations like Capital Grill to maintain the quality integrity, they do not store the whole tomatoes refrigerated prior to rinsing and cutting tomatoes but they are placed on a time stamp for 4 hrs at room temperature and if not used then discarded.
 - In other locations the whole tomatoes are pre chilled and once rinsed the product is processed immediately and placed into shallow pans for cooling. Only food that is pre-chilled is permitted to be taken to the line. If it is not pre-cooled it would not make temperature on the line. The cut product if not held on time needs to be maintained <41F.
 - The tomatoes are rinsed with tap water in a colander and then sliced or diced for usage, placed into shallow pans and cooled.
- Cutting Head lettuce:
 - Long Horn is known for their Steakhouse but they also pride themselves on their hand chopped salads.
 - The processing begins with following their recipes that exist for each product to clean and sanitize the sink.
 - The sink is then filled with tap water and ice is added to bring the temperature to 35-38F.
 - The outer leaves of the head lettuce are removed as needed due to visible soil or damage to the leaves.
 - Whole head lettuce is washed by rinsing in a colander basket
 - On a clean and sanitized cutting board the whole heads are cut, chopped, and then placed into the sink with water agitated.
 - A skimmer tool then removes the lettuce from the sink and places in into a salad spinner to be spun dry.
 - The product is placed into bus tubs and it can get to 43F in batches, so the cut product is given 4hrs to cool to <41F.
 - Salad spinners and salad mix may do 2-3 batches in a shift. The salad spinner is cleaned at the end of the shift. It is 24” tall and fits in the dish machine but the base needs to be cleaned with a CIP procedure.
- Verification of the Processes:
 - Verification that the locations are following the procedures occurs during the 3rd party audits that are received at the locations. They obtain 2x per year audits and for some locations 3x per year.
- The following questions were asked:
 - Karl: What is the frequency of changing the water?
 - The water is changed for each batch of lettuce in the sink.
 - Karl: What is the procedure for removing outer head lettuce leaves?
 - They are removed only if damaged or bruised.
 - Jill: Are the whole tomatoes being washed at the packing houses?
 - No, tomatoes are not being washed at the packing houses.
 - Jill: Is there a specific temperature for soaking the iceberg and romaine in water.
 - No, the ice is used to help bring the temperature down when using tap water.
 - Vanessa: Are you using cut gloves? If so, how are they cleaned? Are slicers and dicers being used for cutting the tomatoes? If so, how are they cleaned?

- They are using cut gloves. A glove is placed over the hand cutting the tomato, then a cut glove, and another glove is placed over the cutting glove. They are run through the dish machine for cleaning.
- The slicers the blades are removed and then sent through the dish machine.
- The dicer uses a different device and the dicers are not generally able to be cleaned since it is CIP on the parts and not run through the dish machine. This is something that is continually being monitored during the audits at the locations.

Anna:

- Thanked Kris for his presentation which was very informative and insightful.
- Indicated that Dan Dalham with Ecolab was not able to present on regulatory requirements for antimicrobial washes it is a very long document that was requested to be condensed into 4-5 slides and very difficult will continue to work on this for the next call.
- It was requested to the CFP Board permission to share the raw data that had been obtained on the responses from retail and foodservice regarding washing practices. There were 3,800 responders. The Board approved the request but it needs to have a disclaimer CFP offers no opinion on the raw data. The raw data can be found on the FoodShield site.
- Will share the draft of document for the final report being created.

Anna: Meeting adjourned.



Conference for Food Protection
Produce Washing Committee
Meeting Minutes March 23, 2017 2-3pm (EST)

Charges:

Committee Charges:

- 1. Review science and public health impact of water treatment options to minimize cross-contamination when using a water bath for washing, rinsing, crisping, processing, and/or other treatments of Raw Agricultural Commodities (RACs) and ready-to-eat (RTE) fruits and vegetables in food establishments;**
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- 4. Consult with appropriate professional produce trade organizations; and**
- 5. Report back with recommendations to the 2018 Biennial Meeting of the Conference for Food Protection.**

Working Group 1

Charge 1

Working Group 2

Charge 3

Attendance: A. Staroben, K. Matthews, Barbara Ingham; David Crownover; Jill Hollingsworth; Vanessa Cranford; Alison Hurysz, Susan Kendrick.

Anna: Welcomed group.

Karl: Attendance.

Anna: Introduction of Jennifer McEntire, VP Food Safety and Technology, United Fresh Produce Association.

- Jennifer gave a PPT entitled “Produce Crisping Risks and Mitigations”. The PPT was provided to the entire committee.
- The talk lasted approximately 15 minutes and was followed by a Q&A session.
- Risk associated with handling of a commodity in a retail setting was discussed.

Anna: Thanked Jennifer for her presentation. Indicated working group 1 has completed charge. Only a few papers remain that need to be reviewed. Requested that additional papers can be posted, but must be accompanied by a review. Introduced subject of development of a “white paper” and requested volunteers to serve on the preparation of the document. It was felt that having a few people involved in construction of the paper would be best. A draft of the document could then be provided to the full committee for comment and review. Jill volunteered to serve on committee preparing the initial draft.

Anna: Meeting adjourned.



Conference for Food Protection
Produce Washing Committee
Meeting Minutes February 23, 2017 2-3pm (EST)

Charges:

Committee Charges:

- 1. Review science and public health impact of water treatment options to minimize cross-contamination when using a water bath for washing, rinsing, crisping, processing, and/or other treatments of Raw Agricultural Commodities (RACs) and ready-to-eat (RTE) fruits and vegetables in food establishments;**
- 2. Identify conditions of use, including types of RACs and RTE fruits and vegetables, and methods for assuring efficacy of use;**
- 3. Review applicable rules and regulations pertaining to the use of water and chemicals for washing, rinsing, crisping, processing, and/or other treatments of RACs and RTE fruits and vegetables as it relates to food establishments to avoid creating conflict.**
- 4. Consult with appropriate professional produce trade organizations; and**
- 5. Report back with recommendations to the 2018 Biennial Meeting of the Conference for Food Protection.**

Working Group 1

Charge 1

Working Group 2

Charge 3

Attendance: A. Starobin, K. Matthews, Barbara Ingham; David Crownover; Jill Hollingsworth; Vanessa Cranford; Marlene Gaither; Susan Shelton, Diane Johnson, L. Williams.

Anna: Welcomed group.

Laurie Williams – FDA consultant on committee; Alternate is Vanessa Cranford. Will confer on all items.

Barbara: Provided update on working Group 1. Reviewed 32 articles on the relevance to the charge of group. Main portion of work near completed.

Anna: Asking for volunteer to serve as chair of working group 1. No volunteers.

Tom: Industry connections to answer questionnaire.

Karl: Reviewed paper on cross-contamination in retail setting: “Sanitizer efficacy in preventing cross-contamination of heads of lettuce during retail crisping” (2017).

Tom: Commented on relevance of paper.

Anna: Meeting adjourned.



**Conference for Food Protection
Produce Washing Committee**

Minutes – January 26, 2017 2-3pm (EST)

Voting Members in attendance: A. Starobin, K. Matthews, J. Hollingsworth, Vanessa Cranford, Alison Hurysz, Jayne Lipe, Susan Kendrick, Susna Shelton, Diane Johnson, Priya Nair, and others.

Welcome: Anna

Attendance: Karl

Vanessa provided update working Group 1. Publications uploaded to Food Shield and check list provided for assessment of each article based on charge.

Karl: Provided background on Jan 11 group call. Review of assessments was initiated. Completed 17 reviews of assessments.

Anna commented that all members should look at questionnaire to post only paper that are relevant. Difficult to keep focused on each charge.

Encourage all members to review materials that we have for all charges. The document that we are preparing is fluid.

Can remove scheduled mtgs for Group II.

Anna discussed approach to address charge 2. Developed questionnaire. Responses to questionnaire – total 3800 responses. Went through breakdown. Low participation from grocery chains. The data is available on the FoodShield website.

Anna asked for volunteers to write report that is due March 1, 2017. Jill Hollingsworth volunteered.

Open to group discussion:

Tom: Separate organic from conventional. Non differentiation in data being collected.

Anna: Does not impact charge.

Daveine - Not within the charge

Tom: Single step in process. Response: Needed to focus on charge.

Jill: Did not request info on temp., chemical used, etc. Is it a common practice?

Tom: Must recognize that other countries have different methods of processing – Two steps, one step.

Remember in literature review process – must post paper and assessment.

Jill: Point on charge. Can we provide evidence of outbreak associated with cross-contamination at retail level. Levels of pathogen contamination of produce that will be crisped. So, even if present is there a public health impact. FDA may have data.

Tom: Has ARS been contacted. Increase in hyper-local produce.

General discussion. CDC data – general contamination. Did commodity come into the facility contaminated. Must stay focused on charge was final conclusion. Should consideration be given to only specific commodities.

Anna closed the meeting

October 27, 2016

Produce Wash Committee Meeting Notes, Issue 2016 III-026

Call begun at 2:02 pm by Anna Starobin

- Roll call (Anna)

Voting members in attendance: Anna Starobin; Barbara Ingham; David Crownover; Jill Hollingsworth; Vanessa Cranford; Dan Goldberg; Alison Hurysz; Jayne Lipe; Marlene Gaither; Elizabeth Green; Diane Johnson; Keith Jackson

Karl Mathews; Hilary Thesmar; Susan Kendrick; Susan Shelton; Laurie Williams sent a note prior to the call about the schedule conflict they had.

Committee at large members in attendance: David Abney; Robert Brown; Christina Meinhardt; Tim Mitchell; Ellen Thomas; Woo-Jin Yoo; Kris Zetterlund; Aubry Kreske; Dan Dahlman; Steve Hails; Diane Johnson;

Tim Mitchell; Ellen Thomas; Stan Goldman; Peter Hibbard; Layra Dykman; Joshua Funk; Thomas Johnson sent a note prior to the call about the schedule conflict they had.

- Approval of Produce Wash Committee Meeting Notes of September 29, 2016
- Call frequency: Anna suggested that fewer calls might give people a chance to more actively participate in working groups. It was noted that the schedule of calls (table format) was incorrect.
 - ➔ Participants should email Anna with ideas/recommendations for call frequency. Anna.Starobin@ecolab.com
 - ➔ Number of calls will be reduced, when working group 2 would complete it work (most likely soon).
 - ➔ It was suggested to meet earlier November, due the Thanksgiving, and not to meet in December, and then meet again in January.
 - ➔ A revised schedule of Committee and Working Group calls will be distributed, taking into account major holidays such as Thanksgiving (current date for the next Committee call).
- FoodSHIELD: A FoodSHIELD group has been created for the CFP Produce Wash Committee. <https://www.foodshield.org/member/login/> If you are unable to login- contact the FoodSHIELD help desk. Important Committee items are now posted to the FoodSHIELD site (and more are being added). helpdesk@foodshield.org When logged into the FoodSHIELD site, look in apps, open "Documents" and look for information in the relevant Folders for downloaded documents.
 - ➔ Participants should make sure that they have access to FoodSHIELD.
- Jennifer McEntire presentation: A suggestion has been made to ask Jennifer McEntire (VP Food Safety & Technology, United Fresh Produce Association) to present to the entire Committee. A recommended focus for the presentation would be to discuss how the industry assesses risk of cross contamination and determines if there is an appropriate preventive control that can be used to eliminate or minimize risk under FSMA.
 - ➔ Suggestions/concerns related to this potential discussion/presentation should be directed to Anna Starobin.

- Progress update Working Group 1 (Vanessa). Notes from work group meetings can be found on the FoodSHIELD site. On the October 12th call, Karl reported that there are no peer reviewed articles related to crisping but there are 2 theses. Dr. Trevor Suslow has contributed information (placed on FoodSHIELD) related to published papers in the area of produce washing; there is a manuscript that has been submitted to JFP relative to washing and Dr. Suslow has offered to determine if it would be possible to share the manuscript pre-publication – no decision has been made. Dr. Eliot Ryser indicated that most produce washing research which he has directed has dealt with cross contamination during processing steps of cutting, dicing, etc. (not retail). The pertinent information would pertain to the efficacy of sanitizers. There is a comprehensive position paper forthcoming in JFP addressing the efficacy of sanitizers. Work Group 1 has been gathering information for a literature review or white paper; the actual structure of the work group’s output has yet to be determined. Whether the Work Group will focus on particular commodities or on general recommendation has also not yet been determined. The next call for the Work Group will focus on more literature review as well as more time spent in outlining the final paper/report.
- Progress update Working group 2 (Anna). Work Group 2 has focused on defining regulatory terms, and has looked at particular wording in the FDA Food Code. Registration jurisdiction for antimicrobial treatments will be placed in the simplified version of the decision tree available in the Annex of the Code. Additional information was included regarding the current citation within the Food Code for washing fruits and vegetables. 3-302.15 & 7-204.12
- A question was presented on potable water. Washing may or may not include a chemical treatment. Potable water regulated by EPA. EPA definition and reference for potable water added to the definition table. Brief discussion on bottled water, regulated by FDA. Perhaps could be used during natural disaster...emergency situation. Determined to be out of scope of the committee work, addressed in other CFP emergency related guidelines. Will not be discussed.
- Regulations differences in various states were researched by Susan Shelton. Information collected was place on FoodSHIELD site. Example of the differences: In Washington State: If produce is soaked/immersed, the rinse step is required. Regulations are changed after consultation with WA University.
- Tom Johnson emailed particular concerns related to developing an understanding of the regulations and the appropriate regulatory authority related to produce (“food contact sanitizers”). Anna shared Tom’s email with the regulatory advisors to Produce Wash Committee and is awaiting a response. “Food contact sanitizers” and regulations pertained to them are outside of the scope of this committee charges.
- A questionnaire is being developed to understand how retail is washing produce today. It was suggested that certain segments of the industry be targeted to respond to the survey, with particular point-people named:
 - Hilary Thesmar –FMI
 - Jill Hollingsworth – National Grocery
 - David Crownover – National Restaurant Association. David will investigate NRA polices regarding distribution of surveys.
 →Targeted survey distribution.
- Keith Jackson commented on the committees good progress.

The Committee returned to a discussion of call frequency and the need to update the calendar of upcoming calls (see notes under Call frequency – page 1).

Call ended at 2:41 pm.

Notes are taken by Barbara Ingham

September 29, 2016

Produce Wash Committee Meeting Notes, Issue 2016 III-026

Voting members in attendance: A. Starobin, K. Mathews, B. Ingham, D. Crownover, H. Thesmar, V. Cranford, D. Goldberg, A. Hurysz, S. Kendrick, S. Shelton, J. Patel, L. Morgan.

Anna:

Welcome and attendance

Dates for each group and entire committee to meet were presented: Group 1 – Second Wednesday each month at 2PM; Group 2 – Third Wednesday of each month, 2PM; Entire committee – Fourth Thursday of each month, 2PM.

The issue of providing materials to group and concerns with copy write materials was put forth. CFP will cover costs associated with securing publications associated with literature. The process requires 2 to 3 days to complete for approval.

CFP is looking into depository space. Until space is determined for depository of material will be sent via email.

Vanessa: Group 1: Confirm dates of call to groups and committee. Must have definitions for various terms – crisping, washing, etc. Decision that two-buckets of literature will be filled, 1) focus on wash water, 2) on other areas. Will sort out later. Will focus on whole and cut commodity.

Anna: Format of final document has yet to be determined. Adhoc committee associated with CFP will look at how documents will be used.

Keith: Emphasis – Focus on water, not microbial load reduction on commodity.

Tom Johnson: Look at commercial processing. May have initial wash and then sanitizing wash. Concern with temperature differential. May need to consider sequential processing of product.

Karl: Emphasize that charge is control of microbial load in water. Focus on retail NOT commercial production.

Tom: Must look at totality of research not just retail segment.

Anna: Emphasize charge of working group. Focus is retail. Will not dismiss information associated with commercial process.

Barbara: Need to have process flow diagram so committee will know what focus is and to narrow the literature search.

Dan: Recall we have distinct processes – washing, re-hydrating, treating, crisping.

Barbara: Perhaps should develop flow diagram similar to type used when developing HACCP plan.

Anna: We will seek information on current retail practices. Will send email to committee. Reminder – not all produce is washed in similar fashion. Should look at FSMA regulations and definitions.

There are experts at USDA in Produce Safety unit that can provide guidance.

Meeting adjourned

August 31, 2016

Produce Wash Committee Meeting Notes, Issue 2016 III-026

Voting members in attendance: A. Starobin, K. Mathews, B. Ingham, D. Crownover, J. Hollingsworth, H. Thesmar, V. Cranford, D. Goldberg, A. Hurysz, J. Lipe, M. Gaither, A. Pierce, S. Kendrick, S. Shelton, E. Green, D. Johnson, P. Nair, J. Patel, L. Morgan, L. Williams.

Anna Starobin welcomed the committee and covered the agenda for the meeting.

Karl read the antitrust statement.

Due to the 2/3 voting members' attendance requirement in order to have a quorum, it is important to make sure that the voting members are calling in on a regular basis. Anna discussed the basis for being removed as a voting member in cases when members are not able to meet this requirement. Karl will send a poll to vote whether 2 or 3 calls can be missed, before being moved to a non-voting status member.

Question was raised on the frequency of committee meetings.

Discussed the best system for sharing information. Dropbox is not available to several members. Several members are not allowed to use a personal Dropbox at work. Shared systems cannot be used because of security. Until a better system is found, information will be shared via e-mail. Deadlines were discussed. All deadlines were provided to the committee electronically. Final report is November 1st 2017.

Committee Charges

Karl provided the key points that drove the issue to be brought before the CFP committee.

Anna indicated that the issue as submitted was not approved, and the committee was created.

Five charges: Reading of charges by Anna (available to committee electronically)

Discussion on best approach to address the charges. Suggested creating two working groups.

Jill Hollingsworth provided insight into charge #2 (Identify conditions of use, including.....)

Cas Tryba shared a concern that if not properly parsed then a single group, addressing regulatory related issues, will have an onerous charge. Karl and Anna further discussed to provide understanding of Jill's suggestion for making the workload more equitable. The task for investigating regulations under charge #3 could be completed in a timely fashion. Suggestion was made that we consult a range of academic institutions – domestic and international.

Anna suggested two groups.

Group 1 (sub-committee) – Charge #1;

1. Review science and public health impact of water treatment options to minimize cross-contamination when using a water bath for washing, rinsing, crisping, processing, and/or other treatments of Raw Agricultural Commodities (RACs) and ready-to-eat (RTE) fruits and vegetables in food establishments;

Group 2 (sub-committee) – Charge #3;

3. Review applicable rules and regulations pertaining to the use of water and chemicals for washing, rinsing, crisping, processing, and/or other treatments of RACs and RTE fruits and vegetables as it relates to food establishments to avoid creating conflict.

Entered into discussion on regulations and guidelines. Anna brought back discussion to charge of committee.

Jill requested final clarification on working groups. Anna confirmed that two groups will be formed: Group 1(sub-committee) – Charge #1; Group 2 (sub-committee) – Charge #3

The decision was made to hold polls on the following topics:

- Will hold poll so that members can indicate choice for serving on a given sub-committee.
- Will hold vote on number of working groups (sub-committees).
- Will hold poll to determine how often working groups (sub-committees) will meet.
- Will hold poll on meeting notes approval
- Will hold poll on the next meeting date

Will use Google poll and send individual e-mails to those members that cannot access Google poll.

Meeting is brought to an end.

Next Meeting will be held on the date identified by the poll.



Conference for Food Protection
Produce Washing Committee: Working Group 1

AGENDA / NOTES – September 27th 2016 2-3pm (EST)

Charge: Working Group 1:

Review science and public health impact of water treatment options to minimize cross-contamination when using a water bath for washing, rinsing, crisping, processing, and/or other treatments of Raw Agricultural Commodities (RACs) and ready-to-eat (RTE) fruits and vegetables in food establishments;

Volunteers on Working Group 1:

Working Group 1:	Call 9/27 Attendance
Vanessa Cranford- Group 1 Lead	Present
Ali Hurysz	
Anna Starobin	Present
Hilary Thesmar	Present
Priya Nair	Present
Susan Kendrick	Present
Susan Shelton	
Karl Matthews	Present
Barbara Ingham	
Laurie Williams (FDA consultant)	Present
Marlene Gaither	Present
Jane Lipe	
Jill Hollingsworth	Present
Sue Tyjewski	Present
Woo Jin (Joey) Yoo	
Cas Tryba	

Agenda Working Group 1:

- Determine call frequency of the Working Group 1
- Discuss the criteria that will enable a document to be used as a scientific reference.
- Determine plan for researching information and also plan for how the summarized data will be submitted to the Produce Committee from Working Group 1.
- Food Code References on Washing (Review existing references and where additional references are needed).
- Define the terms listed in the charge. (Review on crisping and water bath provided)
 - Review definitions in reference to the FSMA Produce Rule.

Discussion:

Frequency of Working Group Meeting:

- The working group discussed the meeting dates and it was determined that the group would meet 1x per month.
 - Working Group 1 every 2nd Wednesday at 2pm
 - The Working Group 2 Anna explained was meeting every 3rd Wednesday at 2pm
 - The Produce Washing Committee as a whole meets on the last Thursday of the month at 2pm.
 - The three missed calls standard only applies to the Produce Washing Committee and not to the working group meetings.
 - Please provide an email if you will be missing a call and unable to attend.

Criteria for Scientific Reference:

- It was questioned if there was a defined reference established by CFP for a scientific reference? Anna indicated she would confirm with CFP.
- Line references in the Food Code Annex 3.
- Anna indicated references have been FDA Guidance documents, publications, and peer reviewed literature.
- It was suggested by Jill that we could gather all information and place into two categories:
 - Peer Reviewed Scientific Publications and Government Guidance Documents
 - Opinion papers and educational articles
- The group agreed on this approach as it would enable all data to be considered before it was disqualified.

Plan for Researching Information:

- Jill explained that when the charge had been submitted for Produce Washing it was not with the intent for microbial logarithmic reduction on the product. It was aimed to focus on the prevention of cross contamination on the wash water.
- It was discussed the differences between retail produce washing and commercial produce washing:

Commercial	Retail
Large Scale Processing	Small volume of product
Single line and single product washing	Possibility that multiple products washed together
Whole produce washed and some products like leafy greens or cabbage, cut and then washed.	In the Food Code 302.15 indicates Raw fruits and vegetables shall be thoroughly washed in water to remove soil and other contaminants before being cut, combined with other ingredients, cooked, served, or offered for human consumption in ready-to-eat form except as specified in ¶ (B) of this section and except that whole, raw fruits and vegetables that are intended for washing by the consumer before consumption need not be washed before they are sold.
Control of wash water ppm concentrations	Challenging to have a measurement system in the retail environment.
Produce Processing Facility Controls	Produce but also may handle other

	commodities like meat, fish, etc.
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- Treatment of the water to prevent cross contamination if washed in the same container and possibly co-mingled. What are the risk mitigation approaches if we treat the water?
- Using a chemical treatment is not currently required in the Food Code.

References and Terms on Washing:

- Washing, crisping, rinsing, terms for review and discussion when water is placed into a container and used for washing produce in retail. The analysis to review all the words that accompany these actions and the definitions.
- It was discussed that fresh running water is a different scenario than water in a container that may potentially be re-used.
- Whether RAC and RTE items would the same container be re-used. The application that when one product is washed to another product without changing the water or between RAC and RTE commodities.
- Laurie indicated that FDA does not prohibit the usage of chemicals it is just not required.
- Jill explained that with CFP 'may' or 'shall' references a must do action. It is suggested that as a best practice it is reviewed and submitted for a common water bath but then you would be required to use a chemical.
- It was suggested that the group would divide reaching out for produce washing research to the following:
 - Vanessa: Trevor Suslow UC Davis and Elliott Ryser MSU
 - Priya Nair: Larry Bushat GA
 - Anna Starobin: Science using Antimicrobials
 - Jill Hollingsworth: United Fresh
 - Marlene Gaither: PMA
- All research being obtained must focus on the applicability of usage in a retail environment.
- It was also suggested that the FSMA changes should be included in the review from the Working Group 2.

Next Call: in accordance with the planned meeting schedule **Oct 12th 2pm.**

Food Code References:

3-302.15 Washing Fruits and Vegetables.

1. Beuchat, L. 1998. Food Safety Issues. Surface Decontamination of Fruits and Vegetables Eaten Raw: A Review. World Health Organization. 42 pp.
2. Chia-Min, Lin, Cheng-I Wei*, 1997. Transfer of Salmonella montevideo onto the Interior Surfaces of Tomatoes by Cutting. J. Food Prot. 60(7): 858-863.
3. Geldreich, E.E. and R.H. Bordner, 1971. Fecal contamination of fruits and vegetables during cultivation and processing for market. J. Milk Food Technol. 34:184-195.
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6. Satchell, F.B., P. Stevenson, W.H. Andrews, L. Estela and G. Allen, 1990. The survival of Shigella sonnei in shredded cabbage. J. Food Prot. 53:558-562.
7. Steinbrugge, E.S., R.B. Maxcy and M.B. Liewen, 1988. Fate of Listeria monocytogenes on ready-to-serve lettuce. J. Food Prot. 51:596-599.

7-204.12 Chemicals for Washing Fruits and Vegetables, Criteria.

1. Code of Federal Regulations, Title 21, Part 173.315, Chemicals used in washing or to assist in the peeling of fruits and vegetables.
310

Annex 2 – References

2. Code of Federal Regulations, Title 21, Part 173.405, Secondary Direct Food Additives Permitted in Food for Human Consumption; Sodium Dodecylbenzenesulfonate.

Definitions: (Provided by Jill Hollingsworth)

Crisping: "crisping" is a secondary benefit of washing. The FDA Food Code refers to "washing" but the same procedures apply to crisping (also sometimes referred to as "re-hydrating.") The practice of crisping is therefore regulated at retail/food service the same as washing, by the same regulatory authority (state, local, etc.) that regulates the facility. The FDA supports crisping as part of the industry guidance posted on the FDA Web site. Crisping best practices are included in the Commodity Specific Guidance for Leafy Greens.

Commodity Specific Guidance for Leafy Greens

<http://www.fda.gov/downloads/food/guidanceregulation/ucm169008.pdf>

The Guidance specifically states: Lettuce may be re-crisped by placing fresh-cut lettuce/leafy greens in containers with tap water. The small amounts of chlorine present in the re-crisping tap water may be quickly inactivated by the organic load presented by lettuce/leafy greens. This may increase the potential for lettuce/leafy greens cross contamination particularly if additional lettuce/leafy greens are added to the re-crisping container (Wachtel and Charkowski, 2002).

Things to Consider (Retail and Foodservice):

- When re-crisping whole lettuce, reduce the potential for water and utensils to contaminate lettuce/leafy greens. Clean and sanitize the sink or container first and use water supplies that meet drinking water standards for re-crisping. The water should be changed at a frequency sufficient to ensure that it is of appropriate microbial quality for its intended use.
- Evaluate use of running water to re-crisp lettuce as needed, in lieu of re-crisping by water soaking, to reduce the potential for cross contamination.

FMI Produce Guidance - includes best practices crisping

<http://www.fmi.org/docs/default-source/food-safety/produce-safety-best-practices-guide.pdf?sfvrsn=2>

The Science of Crisping _ Article from Produce Retailer

http://www.produceretailer.com/produce-retailer-research/the_science_of_crisping_122998618.html

Waterbath (as a treatment option): "Water bath" is a term frequently used to describe a method of washing produce. The term describes a method whereby a container (including a sink, bucket or similar container) is filled with water and produce is submerged into the water (similar to a person getting into a tub of water for a bath.) The term is used to differentiate the soaking/submerging of produce into a container of water from the practice of washing fresh produce under a stream of running water.

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Conference for Food Protection
Produce Washing Committee: Working Group 1

AGENDA / NOTES – Oct 12th 2:00-3:00pm (EST)

Charge: Working Group 1:

Review science and public health impact of water treatment options to minimize cross-contamination when using a water bath for washing, rinsing, crisping, processing, and/or other treatments of Raw Agricultural Commodities (RACs) and ready-to-eat (RTE) fruits and vegetables in food establishments;

Volunteers on Working Group 1:

Working Group 1:	Call 9/27 Attendance
Vanessa Cranford- Group 1 Lead	Present (Late)
Ali Hurysz	
Anna Starobin	Absent
Hilary Thesmar	Present
Priya Nair	Absent
Susan Kendrick	Present
Susan Shelton	
Karl Matthews	Present
Barbara Ingham	
Laurie Williams (FDA consultant)	Present
Marlene Gaither	
Jane Lipe	
Jill Hollingsworth	Present
Sue Tyjewski	
Woo Jin (Joey) Yoo	
Cas Tryba	

Agenda Working Group 1:

- Updated from persons contacted on produce research updates.

Discussion:

Frequency of Working Group Meeting:

- Karl welcomed participants to the call.
- Jill will contact folks at United Fresh and ask if they are willing to join one of the group's conference calls. Provide insight on produce manufacturing. Under FSMA there is no specific requirement for utilizing a chemical antimicrobial in water. Most companies do use a chemical antimicrobial to prevent cross-contamination.
- Jill spoke with Jennifer McEntire at United Fresh and Jennifer agreed to share document associated with validation methods for preventing cross-contamination

- Karl indicated that a review of the literature shows no peer reviewed publications specific to the practice of crisping. There are two published thesis.
- Jill mentioned that Anna has a portal “Food Shield” that can be used as a depository for literature. All participants should have received an email with link and password.
- Vanessa provided an update from contacting Trevor Suslow at UC Davis that there is a PDF collection of available current publications and a post-reviewer white paper manuscript to JFP from the IFSH/FDA Wash Water Working Group that had been submitted. Trevor suggested he could ask for permission to forward a pre-pub copy of the manuscript if interested.
 - The group expressed interest in the PDF collection and the JFP manuscript.
- Vanessa provided an update from contacting Elliott Ryser at MSU that he indicated most of the produce washing work has been done at the processing rather than retail level. However, many of the same rules regarding sanitizer efficacy still apply. Within the next few months, a comprehensive position paper from a group of experts regarding the efficacy of produce sanitizers will appear in JFP so we should keep an eye out for this article. Most of his work was published in JFOPP with a few papers in Food Control and the International Journal of Food Microbiology. Some of the work on bacterial transfer and slicing/dicing work has also been aimed at retail.
 - The group determined that the work done on slicing and dicing at retail is not the focus on the charge on produce washing but an interest exists on the JFP article on sanitizer efficacy.
- Priya Nair: Larry Bushat GA- Priya was not able to be on the call and will provide an update on the next call.
- Anna Starobin: Science using Antimicrobials- Anna was not able to be on the call and will provide an update on the next call.
- The question was put forth concerning the type of document that the group was to develop. Through discussion it was suggested that the document resemble a literature review or critical paper. A specific outline for the document must be developed that will guide construction of the document.
- The suggestion was made that members of the group reach out to stakeholders at the retail level such as Krogers, Shoprite, on current practices etc
 - Jill volunteered to reach out and contact suppliers.
- A revision was made to the table in the previous minutes containing differences between commercial and retail practices that was previously sent to the group. Specifically, the statement “In the Food Code it is not permitted to cut and then wash a product 302.15 indicates that raw fruit and vegetables should be washed before being cut” was modified to the exact verbiage in the food code.
- Should we consider risk associated with a given commodity being processed at the retail level? For example, would Romaine lettuce represent a greater risk of being contaminated then a cucumber? Do we need to consider developing a matrix on different commodities and washing combination pros and cons? To be discussed more in depth on the next call.

Next Call: in accordance with the planned Working Group 1 meeting schedule **Nov 9th 2pm.**

Food Code References:

3-302.15 Washing Fruits and Vegetables.

1. Beuchat, L. 1998. Food Safety Issues. Surface Decontamination of Fruits and Vegetables Eaten Raw: A Review. World Health Organization. 42 pp.
2. Chia-Min, Lin, Cheng-I Wei*, 1997. Transfer of Salmonella montevideo onto the Interior Surfaces of Tomatoes by Cutting. J. Food Prot. 60(7): 858-863.
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310

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Definitions: (Provided by Jill Hollingsworth)

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Commodity Specific Guidance for Leafy Greens

<http://www.fda.gov/downloads/food/guidanceregulation/ucm169008.pdf>

The Guidance specifically states: Lettuce may be re-crisped by placing fresh-cut lettuce/leafy greens in containers with tap water. The small amounts of chlorine present in the re-crisping tap water may be quickly inactivated by the organic load presented by lettuce/leafy greens. This may increase the potential for lettuce/leafy greens cross contamination particularly if additional lettuce/leafy greens are added to the re-crisping container (Wachtel and Charkowski, 2002).

Things to Consider (Retail and Foodservice):

- When re-crisping whole lettuce, reduce the potential for water and utensils to contaminate lettuce/leafy greens. Clean and sanitize the sink or container first and use water supplies that meet

drinking water standards for re-crisping. The water should be changed at a frequency sufficient to ensure that it is of appropriate microbial quality for its intended use.

- Evaluate use of running water to re-crisp lettuce as needed, in lieu of re-crisping by water soaking, to reduce the potential for cross contamination.

FMI Produce Guidance - includes best practices crisping

<http://www.fmi.org/docs/default-source/food-safety/produce-safety-best-practices-guide.pdf?sfvrsn=2>

The Science of Crisping _ Article from Produce Retailer

http://www.produceretailer.com/produce-retailer-research/the_science_of_crisping_122998618.html

Waterbath (as a treatment option): "Water bath" is a term frequently used to describe a method of washing produce. The term describes a method whereby a container (including a sink, bucket or similar container) is filled with water and produce is submerged into the water (similar to a person getting into a tub of water for a bath.) The term is used to differentiate the soaking/submerging of produce into a container of water from the practice of washing fresh produce under a stream of running water.

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Conference for Food Protection
 Produce Washing Committee: Working Group 1

Call Minutes – Nov 9th 2016 2-3pm (EST)

Charge: Working Group 1:

Review science and public health impact of water treatment options to minimize cross-contamination when using a water bath for washing, rinsing, crisping, processing, and/or other treatments of Raw Agricultural Commodities (RACs) and ready-to-eat (RTE) fruits and vegetables in food establishments;

Volunteers on Working Group 1:

Working Group 1:	Call 11/9 Attendance
Vanessa Cranford	Present
Ali Hurysz	
Anna Starobin	Present
Hilary Thesmar	Absent- sent email notification
Priya Nair	Present
Susan Kendrick	Absent- sent email notification
Susan Shelton	Present
Karl Matthews	Present
Barbara Ingham	Present
Laurie Williams (FDA consultant)	Present
Marlene Gaither	Absent – sent email notification
Jane Lipe	
Jill Hollingsworth	Present
Jaymir Patel	
Woo Jin (Joey) Yoo	Present
Cas Tryba	
Dan Goldberg	Present
Ellen Thomas	Present

Minutes Working Group 1:

1. Review of items currently obtained in Food Shield Linked to Working Group 1
 - The group discussed the approach for reviewing the documents in Food Shield and how the group should approach the review.
 - Jill discussed that the review of the documents include how is it relate to crisping, washing, does it look for reduction in surface or wash water, what chemical is being used, and what is the outcome of the study. Did the study look at just the product or also cross contamination, identifying things in the literature that we need to pull out – did they inoculate with pathogens, what commodity, and what did the study prove.
 - When reviewing the information we should be looking to identify can we use this study and is it relevant to the charge of the group.

- Barb and Karl agreed that it was a great approach for reviewing the documents. To have a brief overview of the document but looking to determine if it controls the wash water. Also, the commodity washed and the procedure used.
 - Anna explained wash water had a standard requirement by EPA
 - Priya- The reviews should consider the effects on different wash water disinfectants water quality and cross contamination prevention.
 - Vanessa volunteered to create a template to be shared with the group to be used for performing a documentation review based on the components highlighted on the call.
 - Barb suggested that articles are assigned for reading and performing the review in Food Shield. Karl, Prya and Jill all agreed to that approach.
2. Discuss the criteria of items still needing to be obtained for scientific literature review based on Food Code requirements.
- Anna- Food Code recommends washing before cutting of produce (RAC).
 - Laurie- The food code does not prohibit the use of chemicals. 302.15 explain washing fruit and vegetables. If it is going to be cut then it must be washed. You can still wash after the product has been cut but it has to be washed before it is cut.
 - Anna- If you wash it before you cut it you may get E.coli into the product you cannot cut and then wash the product.
 - Laurie- The product has to be washed before it is cut. Annex 3 it is silent for washing after cutting. For example if you have unpeeled carrots, it can be peeled and then sliced for a salad bar. Carrots can be washed remove dirt and debris, then you can take the tops off, peel, and then wash again.
 - Anna- Any produce item going to be placed into a water bath and submerged is a risk for cross-contamination in the product. Does adding chemical reduce the risk and is it important to public health that it should be mandated? Did the treatment prevent cross contamination and what does the science in the study show.
 - In the review it may conclude that an article is irrelevant to the charge given by CFP and not relevant for including in the final summary.
3. What scientific data still needs to be captured?
- Once the review is performed on the existing documents in Food Shield, then the group will know what data is still missing or needing to obtain.
 - Priya informed the group that she recently uploaded a document related to crisping.
4. Survey
- The group discussed the survey as it was determined that the survey needs to be cut back and ask only a handful of relevant questions.
 - Anna indicated that questions not relevant would be removed
 - Jill included that the questions have a foodservice focus and needs to include a retail approach as well
 - Anna- The survey goal to be 10 minute max for completing. Is there a way that participants can check more than one component for when multiple components apply to simplify the form.
 - Anna- The survey will be revised for simplicity and including retail.

Food Code References:

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Things to Consider (Retail and Foodservice):

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Conference for Food Protection
Produce Washing Committee
Minutes – January 11, 2017 2-3pm (EST) Working group 1

Voting Members in attendance:

Working Group 1:	Call 1/11 Attendance
Vanessa Cranford	NO
Ali Hurysz	NO
Anna Starobin	YES
Hilary Thesmar	YES
Priya Nair	YES
Susan Kendrick	YES
Susan Shelton	YES
Karl Matthews	YES
Barbara Ingham	YES
Laurie Williams (FDA consultant)	YES
Marlene Gaither	NO
Jane Lipe	YES
Jill Hollingsworth	YES
Sue Tyjewski	No longer on committee
Woo Jin (Joey) Yoo	YES
Cas Tryba	NO

Dan Golberg, Bob Norgella

Welcome: Anna

Attendance: Karl

The group required time to access materials on FoodShield so that all participants could participate in the review process. This also served as a learning process.

The focus of the call was to continue review of "Literature Review Assessments". All "assessments" were available in a specified folder located on FoodShield.

Karl called out each "assessment" and read the key information: title, pathogens, commodity, inclusion of document in review, etc. Discussions of each review ensued. The group determined disposition of each assessment – YES, NO, MAYBE. Papers that received an assessment review of MAYBE could have utility in writing the introductory materials.

The group completed review of 17 assessment reports.

Meeting Adjourned: 3:20PM

Conference for Food Protection

Produce Washing Committee: Working Group 1

Minutes of the Conference Calls February 8, 2017 2-3:40 pm EST

Voting Members in attendance:

Working Group 1:	Call 2/8 Attendance
Vanessa Cranford	No longer on committee
Ali Hurysz	YES
Anna Starobin	YES
Hilary Thesmar	NO
Priya Nair	NO
Susan Kendrick	YES
Susan Shelton	NO
Karl Matthews	NO
Barbara Ingham	YES
Laurie Williams (FDA consultant)	YES
Marlene Gaither	NO
Jane Lipe	YES
Jill Hollingsworth	YES
Woo Jin (Joey) Yoo	YES
Cas Tryba	YES

Welcome: Anna

Attendance: Barbara

The Working Group continued a review of documents posted to Food Shield

<https://www.foodshield.org/>

The Working Group was presented with a list of articles to review (table below); with reviewers completed on items #1-17 January 11, 2017. The Working Group continued with the review, considering items #18-32 in the table below (15 articles). A summary of the outcomes of all reviews is listed below.

Article summaries are posted to Food Shield in the **Completed Literature Review Assessments** folder.

Naming of files posted to the site should follow this style: First author name, abridged title, reviewer

#	Author	Citation	Reviewer	Outcome
1	Shen	Dynamic effects of free chlorine concentration, organic load, and exposure time on the inactivation of <i>Salmonella</i> , STEC, and non-O157 Shiga toxin-producing <i>E. coli</i> (2013)	Woo	YES
2	Eifert	Chemistry of chlorine sanitizers in food processing (2002)	Woo	YES
3	Pirovani	Reduction of chlorine concentration and microbial load during washing-disinfection of shredded lettuce (2004)	Cranford	Maybe

#	Author	Citation	Reviewer	Outcome
4	Pangloli	Reduction of <i>Escherichia coli</i> O157:H7 on produce by use of electrolyzed water under simulated food service operating conditions (2009)	Gaither	Maybe
5	Suslow	Water disinfection: a practical approach to calculating dose values for preharvest and postharvest applications (2001)	Gaither	Yes
6	Parish	Methods to reduce/eliminate pathogens from fresh and fresh-cut produce (2003)	Cranford	Maybe
7	FAO	Microbial hazards in fresh leafy greens and herbs (2008)	Cranford	Maybe
8	Van der Linden	Minimal processing of iceberg lettuce has no substantial influence on the survival, attachment and internalization of <i>E. coli</i> and <i>Salmonella</i> (2016)	Matthews	Maybe
9	Suslow	Production practices as risk factors: microbial food safety of fresh and fresh cut produce (2003)	Gaither	No
10	Gil	Fresh cut produce sanitation and wash water disinfection: problems and solutions (2009)	Hollingsworth	Maybe
11	Lou	A pilot plant scale evaluation of a new process aid for enhancing chlorine efficacy against pathogens	Hollingsworth	NO
12	Beuchat	Food safety issues: surface decontamination of fruits and vegetables eaten raw: a review	Ingham	NO
13	Lopez-Galvez	Prevention of <i>Escherichia coli</i> cross-contamination by different commercial sanitizers during washing of fresh-cut lettuce (2009)	Ingham	YES
14	Luo	Fresh-cut produce wash water reuse affects water quality and packaged product quality and microbial growth in romaine lettuce (2007)	Ingham	NO
15	Luo	Fresh cut produce wash water reuse affects water quality and packaged product quality and microbial growth (2007)	Cranford	NO
16	Fishburn	Efficacy of various consumer friendly produce washing technologies (2012)	Kendrick	YES
17	Luo	Improving produce safety by stabilizing chlorine in washing solutions with high organic load (2012)	Matthews	NO
18	CA dept public health	Retail fruit and vegetable marketing guide	Hollingsworth	YES
19	Gombas	Guidelines to validate control of cross-contamination during washing of fresh-cut leafy vegetables (2017)	Matthews	NO** (use in lit review ?)
20	Suslow	(duplicate of #9)	Gaither	
21	Gombas	(duplicate of #19)	Matthews	
22	Van der Linden	(duplicate of #8)	Matthews	
23	Hilgren	Antimicrobial efficacy of peroxyacetic/octanoic acid mixture in fresh-cut vegetable process waters (2000)	Matthews	NO**
24	Luo	(duplicate of #17)		

#	Author	Citation	Reviewer	Outcome
25	Han	The effects of washing & chlorine dioxide gas on survival and attachment of EC O157 on green peppers (2000)	Hollingsworth	NO
26	Industry trade groups	Commodity specific food safety guidelines for the lettuce and leafy green supply chain	Ingham	MAYBE (litreview)
27	Fishburn	(duplicate of #16)	Kendrick	NO**
28	Nou	Chlorine stabilizer T-128 Enhances efficacy of chlorine against (2011)	Kendrick	MAYBE
29	FDA	Center for produce safety reveals 10 research grants	Kendrick	NO
30		Code of hygienic practice for fresh fruits and produce	Kendrick	MAYBE
31	Jung	Sanitizer efficacy in preventing cross-contamination of heads of lettuce during retail crisping (2017)	Matthews	YES
32	Jung	(duplicate of #31)	Matthews	

**Changed from reviewer/previous recommendation.

Articles not yet been reviewed – posted in the Working Group 1 Literature Search folder in Food Shield.

#	Author	Citation	Reviewer	Outcome
33	Zhou	Inactivation dynamics of Salmonella enterica, Listeria monocytogenes, and Escherichia coli O157:H7 in wash water during simulated chlorine depletion and replenishment processes (2015; Food Microbiology)	Goldberg	
34	Zhang	Efficacy of antimicrobial agents in lettuce leaf processing water for control of Escherichia coli O157:H7 (2009; JFP)	Goldberg	
35	Wisniewsky	Reduction of Escherichia coli O157:H7 counts on whole fresh apples by treatment with surface sanitizers (2000; JFP)	Goldberg	
36	[training resources]	Program Information Manual: retail food protection storage and handling of tomatoes		
37	Starobin	Fruit and vegetables washing in food retail environments (2017; Food Protection Trends)		
38	Palma-Salgado	Whole-head washing prior to cutting provides sanitization advantages for fresh-cut iceberg lettuce (<i>Latuca sativa</i> L.) (2014; IJFM)		
39	Keskinen	Efficacy of chlorine, acidic electrolyzed water and aqueous chlorine dioxide solutions to decontaminate Escherichia coli O157:H7 from lettuce leaves (2009; IJFM)		
40	Hoelzer	Reduction of Listeria monocytogenes contamination on produce – a quantitative analysis of common liquid fresh produce wash compounds (2014; Food Control)		
41	Goodburn	The microbiological efficacy of decontamination methodologies for fresh produce: a review (2013; Food Control)		

#	Author	Citation	Reviewer	Outcome
42	Jung	Sanitizer efficacy in preventing cross-contamination during retail preparation of whole and fresh-cut cantaloupe (2017; Food Control)		



Conference for Food Protection Produce Washing Committee

Meeting Minutes June 19, 2017, 2-3pm (EST)(Working group 1)

Charges:

Committee Charges:

- 1. Review science and public health impact of water treatment options to minimize cross-contamination when using a water bath for washing, rinsing, crisping, processing, and/or other treatments of Raw Agricultural Commodities (RACs) and ready-to-eat (RTE) fruits and vegetables in food establishments;**
- 2. Identify conditions of use, including types of RACs and RTE fruits and vegetables, and methods for assuring efficacy of use;**
- 3. Review applicable rules and regulations pertaining to the use of water and chemicals for washing, rinsing, crisping, processing, and/or other treatments of RACs and RTE fruits and vegetables as it relates to food establishments to avoid creating conflict.**
- 4. Consult with appropriate professional produce trade organizations; and**
- 5. Report back with recommendations to the 2018 Biennial Meeting of the Conference for Food Protection.**

Working Group 1

Charge 1

Working Group 2

Charge 3

Attendance: A. Starobin, K. Matthews, Barbara Ingham; Jill Hollingsworth; Susan Kendrick. (Hilary Thesmar and Priya Nair indicated they could not make the call). Laurie Williams – FDA regulatory

Anna: Welcomed group.

Karl: Attendance.

Anna:

Anna indicated she merged comments that she had received from the committee concerning draft of the white paper. Basically, went line by line to vet comments.

Jill: Due we need to have quorum to proceed. Anna, indicated that we should keep going and then request mandatory meeting.

Based on Laurie's comments requirements to use antimicrobial chemicals in water will not be accepted by

FDA. So, will come-up with "best practices" or SOPs to address the issues.

Clarified individuals that reviewed document at FDA – individual (Cecilia) part of produce safety team.

Anna – would like to create guideline

Barbara – Perhaps the introduction should start with an "Executive Summary"

Jill and other agree. Take a step back from requiring chemicals. Best practices and guidance would be best.

So, from the white paper the recommendation of the committee would be “best practices” guidance document to address concerns raised

Conclusion. Let’s include executive summary.

Start with what we are proposing and then explain why.

Start with Food Code language.

At this point went through each comment and agreed that the paper would be reorganized.



Conference for Food Protection
Produce Washing Committee
Meeting Minutes September 12, 2017 (working group 1)

Charges:

Committee Charges:

- 1. Review science and public health impact of water treatment options to minimize cross-contamination when using a water bath for washing, rinsing, crisping, processing, and/or other treatments of Raw Agricultural Commodities (RACs) and ready-to-eat (RTE) fruits and vegetables in food establishments;**
- 2. Identify conditions of use, including types of RACs and RTE fruits and vegetables, and methods for assuring efficacy of use;**
- 3. Review applicable rules and regulations pertaining to the use of water and chemicals for washing, rinsing, crisping, processing, and/or other treatments of RACs and RTE fruits and vegetables as it relates to food establishments to avoid creating conflict.**
- 4. Consult with appropriate professional produce trade organizations; and**
- 5. Report back with recommendations to the 2018 Biennial Meeting of the Conference for Food Protection.**

Attendance: A. Starobin, K. Matthews, Jill Hollingsworth; Laurie Williams, Vanessa Cranford, Keith Jackson
Anna: Welcomed group.

Anna: Attendance.

Anna provided summary of the 8/29/17 call.

Due to the limited time left before the final report submission, we will work on the issue submission, rather than working on the guideline outline alone.

Within the issue we will recommend to create, or recreate a committee with a charge to write a retail produce handling guideline. We will include a list of the topics, which we recommend to be covered in this guideline.

The 'chapters' may include, but not limited to the following:

1. Scope
2. Target audience
3. Type of produce covered
4. Receiving the produce
5. Storage of the produce
6. Produce washing facilities, sinks
7. Equipment cleaning and sanitation
8. Employees personal hygiene
9. Washing produce
10. Produce crisping
11. Produce display and merchandising
12. Record keeping (with examples of the forms)

Further discussions of the outline:

It was proposed not to name sections of the outline as “chapters”.

Additional topics for the outline were proposed:

- Fresh cut produce handling
- Rewashing of prewashed produce
- Sample SOP
- Definitions
- References

It was suggested to create subcategories in the document. (I tried to organize it based on this recommendation after the call. Will discuss during the next call- AS)

1. Scope
2. Target audience
3. Definitions
4. Type of produce covered
5. Produce Handling (RAC, Fresh cut produce)
 - Produce Receiving
 - Produce Storage
 - Washing produce
 - Washing produce in water
 - Produce washing chemicals (detergents)
 - Produce washing with a/m treatments
 - Re-washing of prewashed produce
 - Produce crisping
 - Produce display and merchandising
 - Record keeping (with examples of the forms)
 - Sample SOP (with examples of the forms)
6. Produce washing facilities, sinks
7. Equipment cleaning and sanitation
8. Employees personal hygiene
9. References

Team will start working on the report. Karl will put together a draft to report on Charge 1:” Review science and public health impact of water treatment options to minimize cross-contamination when using a water bath for washing, rinsing, crisping, processing, and/or other treatments of Raw Agricultural Commodities (RACs) and ready-to-eat (RTE) fruits and vegetables in food establishments;”

Anna will put together a draft to report on Charge 3: “Review applicable rules and regulations pertaining to the use of water and chemicals for washing, rinsing, crisping, processing, and/or other treatments of RACs and RTE fruits and vegetables as it relates to food establishments to avoid creating conflict.”

Everybody interested in helping Karl and Anna, please let us know.

Drafts of the documents are due on 9/27, and will be send to the team on 9/26 for review (or before if ready). Keith and Davene will provide Anna and Karl with the required format for these documents.

Next call is scheduled for 9/27, 4-5 (Est)

Anna: Meeting adjourned.



Conference for Food Protection

Produce Washing Committee: Working Group 2, Oct 19th, 2016

Participants: Karl Matthews, Anna Starobin, Vanessa Cranford, Dan Dahlman, Liz Green, David Crownover, Hillary Thesmar, Susan Shelton, Lisa Morgan.

Initiated discussion on definitions and terminology.

Dan Dahlman and Laurie Williams drafted the “terminology jurisdiction” report to define terms used in produce wash/treatment discussions and to outline the regulatory jurisdiction of the use of antimicrobial chemicals. Exercise also helped determine whether there were discrepancies between agency definitions. Committee members must use terminology correctly. Example: “Disinfectant” – not appropriate terminology for a treatment of fruits and vegetables.

Other comments- Which definition should we use...CDC, FDA, EPA, Web? Should use definitions associated with agencies that have regulatory function, enforceable.

Summary: Will use official FDA definition if available, otherwise will use definition from other sources in order to help the group conversations (e.g., Google).

Regulatory bodies have problem defining “washing”. The group should not try to define “washing”. Work with definition from the “Food Code” in 3-302.15. If needed then the committee could develop definition for “washing” (and any others pertinent terms)

Discussion of table (EPA/FDA jurisdiction) on antimicrobials. Reviewed table as provided

Additional information was included regarding the current citation within the Food Code for washing fruits and vegetables. 3-302.15 & 7-204.12

A question was presented about FSMA and relevance to this discussion. Retail is exempt from FSMA requirements. Need to determine if produce controls under FSMA would impact retail process.

A question regarding the regulations in Europe was presented. Follow-up needed.

A question was presented on potable water. Washing may or may not include a chemical treatment. Potable water regulated by EPA. EPA definition and reference for potable water added to the definition table.

Brief discussion on bottled water, regulated by FDA. Perhaps could be used during natural disaster...emergency situation. Determined to be out of scope of the committee work, addressed in other CFP emergency related guidelines. Will not be discussed.

Other discussion items

Are all establishments using potable water? Is it municipal or well?

Is portability of water ever questioned? Can receive potable water certificate.

Food Code does not cover emergency situations and implied that starting with potable water. Food Code uses term drinking water and drinking water is potable water.

Is there a requirement that a restaurant has potable water? Will allow well water but must be tested/monitored regularly.

What is federal document on well water quality? *Will investigate.*

Regulations related to a process. For Rinsing. Water quality should be same as for washing. Is there a difference in regulation of washing and rinsing? Discussion quality of water not the action...washing or rinsing. Need to concentrate on water application not on the water itself.

Crisping and rehydration of leafy greens. New area must address. No definitions exist.

No regulations about soaking. Soaking implies a long period of time for produce being immersed in water. For example, soaking beans overnight as opposed to five minutes of washing. What is difference in uptake of a chemical agent if added to the water? See statement in Food Code and the annex.

Chemicals if registered should have a specific contact time. Must have information for a specific commodity and chemical. Must study residues and determine acceptable levels of consumption.

Annex portion has public health reason to support codified section.

In Washington State: If produce is soaked/immersed, the rinse step is required. Regulations are changed after consultation with WA University. During crisping process likely have uptake of liquid, chemicals and microbial contaminants. Not addressed by Washington study. If using chemical then must follow EPA regulations concerning use and contact times. Contact time is approved based on toxicology studies.

Closing point: What are food safety issues with current practices and if so what needs to be changed to improve food safety.

September 21, 2016

Working group 2

Produce Wash Committee Meeting Notes, Issue 2016 III-026

Attendance: A. Starobin, D. Crownover, H. Thesmar, V. Cranford, S. Shelton, L. Morgan, L. Williams, Dan Dalhman, Robert Maldonado

Anna Starobin welcomed the committee and covered the agenda for the meeting.

Working group charge: Review applicable rules and regulations pertaining to the use of water and chemicals for washing, rinsing, crisping, processing, and/or other treatments of RACs and RTE fruits and vegetables as it relates to food establishments to avoid creating conflict.

Agenda items:

1. Working group lead volunteer
2. Call frequency
3. How our final product needs to look like?
4. What are washing, rinsing, crisping, processing, and/or other treatments of RACs and RTE fruits and vegetables, and regulatory agency (Laurie Williams, Dan Dalhman)
5. Regulation decision tree

There were no volunteers to lead the working group. Unless it changes, Anna will lead the group.

It was decided to have one call a month, on the third Wednesday of the month at 2 pm (a week prior to the whole committee update call).

Sharing information is still a challenge for the government members of the committee. We will send the documents via e-mail. Big files will be zipped.

Materials will be gathered and the format of the delivered result will be discussed.

Laurie Williams (FDA) covered current relevant Food Code requirements which pertain to produce wash. They included in 3-302.15 and 7-204.12. Additional information is available in the relevant areas of the Code's Annex.

Food Code recommends water wash as a main process for the produce treatment; antimicrobials could be used as an additional option for this application. Chemistries which are allowed for produce washing are discussed in 7-204.12.

Some changes of this section of the code are being considered by FDA based on CFP III-027 submission in order to include other than Ozone currently listed as an antimicrobial treatment option.

Dan Dalhman (ECOLAB) provided definitions of the terminology used in the sub-committee charge and briefly discussed registration responsibilities of the produce antimicrobials between EPA and FDA. Laurie Willams asked for clarification on the source of some definitions, since EPA and FDA definitions may not be the same. Dan will provide the summary of the information presented, with the relevant references to the source of information.

It seems like that there is no clear definition for “crisping”, Laurie and Dan will investigate further on FDA and EPA position for this process. Anna will contact Jill Hollingsworth, one of the issue submitters, for clarification. Need to understand the difference between crisping vs. rehydration. Suggestion was made for adding “crisping” definition to the code, and to come up with a temporary definition. Hilary expressed a concern over a consensus on such definition among FMI members.

Crisping practices were discussed. It a common practice in food retail to soak produce in ice water in order to maintain produce appearance. This practice may lead to water uptake by produce. Annex of the code advises against soaking produce, and use 10F water/produce difference in order to reduce the uptake of water. Guidelines based on which these recommendations are made, need to be evaluated. Literature search related to this recommendation need to be included into a working group 1 list.

Anna asked if any state regulators are looking for proper amicrobial products registrations during routine audits. Susan Shelton (WA state regulator) stated that water is the main method used for produce wash in WA State. WA State requires rinse step for any soaking or crisping process. Anna commented that this requirement may not match EPA registered label approved procedures for some antimicrobial products when soaking, or crisping done.

Susan Shelton suggested to look into any applicable international regulations. Dan Dalhman and David Crownover will connect with international colleagues to provide such information.

Regulations related to onsite generators need to be covered as well (both working group 1 and 2).

Follow up tasks

- Laurie and Dan will provide materials they presented during a call.
- Dan, and David will research and provide any international regulations covering produce treatment related practices.
- Laurie connect with other FDA experts to find out if there is crisping definition in any FDA documents
- Anna will connect with Jill Hollingsworth to better understand charges of the group, and possibly find a reference to “crisping”.

Meeting is brought to an end.

Next meeting is scheduled for 10/19 at 2 pm (Est)

