

**NPRC Food Safety Committee Conference Call  
March 20, 2017; 11:00 a.m.**

- Committee members on call: Karen Holzberg, Rolf Haugen, Eric Larson, Corey Havard, Antonio Dominguez.
- Others on call: Allison Beadle, Hakim Fobia, Britt Burton-Freeman, Kaiping Deng, Alvin Lee.
- Antonio moved to accept the minutes of January 18, 2017. Corey seconded. Unanimously approved.

Summary of Discussion

- Rolf said he's on board with the proposal. Asked about cost and funding.
- Britt said IFSH would need input from industry on development of the spray bar and this is the one area where there might be some variability with budget.
- Britt and Kaiping gave an overview of the research project
- Karen asked for comments from people who IQF raspberries on the chlorine wash and how this could potentially affect quality of raspberries. Antonio: In Chile, not everyone washes raspberries. Some people do a light spray with chlorine. If using a freezing tunnel it is less complicated. If using a freezer room, you cannot wash or put any moisture on the fruit because they will stick together. So, these would be sold as straight pack. Limited experience in Chile using chlorine with raspberries. Blueberries and raspberries are dunked in water with chlorine. Eric asked if this has been validated and Antonio said that he did not think so.
- Karen expressed concern about spending so much money on this process when the likelihood is there are companies already using this process that probably have the validation and have the answers. She was also concerned that these studies may be repeating the things that the industry has been doing. She asked about a mist where X PPM touches the raspberry with X level of pressure resulting in X level decrease on some of these indicators, stating that this would be a practical takeaway. Britt responded that this is what is being proposed...various levels of PPM over specific dose ranges to keep the research study from becoming too expensive.
- Antonio: In the case of Chile without the experience or information, there is not a motivation to use it.
- Discussion turned to UV. Allison reminded the committee that the NPRC funded Sablani's research and key findings, and that it was determined that it was not feasible to apply this in the plant setting at this time. Corey commented that it is

because there is not way to get the UV light into the inside of the berry or for sufficient exposure time. Karen asked about quality of product after UV exposure. Corey: Yes, but good controls must be in place, removing excess water, ability to fluidize, etc.

- Question was raised about cold plasma as discussed during the last call. Britt said that this is still an investigational treatment and as such, the FDA cannot conduct in depth research on this...they are supposed to be working on current technologies/validating. She reminded group that the direction was to validate processes currently in use by the industry now and provide some guidance to their use; then having a study that runs in parallel and looks at an alternative to chlorine (peracetic acid). And then a THIRD step would be to look at new/other technologies: pulse light, UV, cold plasma. She noted that her FDA colleagues also have experience with cold plasma.
- Karen asked for clarification on the purpose of the study. Kaiping provided a thorough explanation of the project proposed.
- Antonio said the goal was to *minimize* contamination, with it very difficult to *eliminate*. His point of view was that the industry needs to do this type of study.
- Karen's concern was the expense of a study on a fruit that doesn't have many microbial issues. She asked what kind of study can be done to really focus our efforts on pathogens and how to decrease risk?
- Kaiping asked if it would be better to just focus on norovirus or listeria. Karen and Antonio both thought so, along with Hepatitis A. Corey added Listeria is the major concern of U.S. packers because everything is machine harvested. Antonio believed this research would be very helpful for other countries because of hand picking.
- Britt: The proposal calls for evaluating efficacy of different concentrations of chlorine and different exposure times to find the sweet spot as guidance to the industry. In Chile, this might be the data that is needed to get people to start using chlorine. Karen asked if any of these studies already been done? Britt: Not that I have seen, at least not on raspberries. For raspberries, we cannot find that data. But that doesn't mean that a grower or processor hasn't done it, it just hasn't been published. She asked if anyone has access to this, that would be great and then maybe we don't need to do this research. She then could validate what already exists but hasn't been published.
- Karen asked Antonio if anyone in Scandinavia has conducted this research given all the issues they have with norovirus. He did not think so.

- Britt asked how the committee would like to proceed. From my perspective and from industry conversations, having the guidance on what is currently being used is valuable. It's valuable for the current users and for distributing throughout the industry. And per Antonio's comments, if there was some research to validate it, Chileans may support the practice. She asked if PAA should be added to this proposal as a lot of companies are using it and are working with it. It is an unknown if it will be that much better than Chlorine (to offset the price).
- Karen: It just seems so logical that if there is an answer in chlorine (if we use chlorine at X level), then that is what should be investigated. Antonio was interested in knowing the maximum amount of chlorine to be used.
- Britt suggested she send a short list of questions, for example, dwell time between spraying and the time of entry to the tunnel.

#### Next Steps

- Britt will revise proposal for Norovirus, Listeria, and Hepatitis A and look into cost difference between Chlorine and PAA, and provide that input to the committee so they can decide if they want to include PAA in the study or not.

The call was adjourned at 12:29 p.m.