Remaining Questions from “Post-Harvest Water: Things to Consider”

October 13, 2022

Below are the questions from the Q&A session that were not answered due to time. Identifying information has been removed and grammatical or spelling errors corrected (expressed in brackets), but the content of each question has not been changed from how it was submitted.

1. [W]hich type of water is suitable for sanitizer action[,] like tap water or like [d]eionized water?
   Not sure what this question is asking, but if the person wants to know what water should be used for making dilutions, distilled is probably the easiest solution (no pun intended). Easy to find and cheap. DI (deionized) water can be used but not as easy to find. When possible, keep it simple.

   -KS

2. [W]hat is the implication of testing my recycled water for [*E. coli*] to see if I meet the 0 CFU/100 ml requirement?
   The implication is that if you find it, then you might find yourself in a recall situation as the water you’ve used was not fit for its intended use. Additionally, since a test may take several days before the results are available, you may not want to ship product until a negative test is returned. Typically, it is not recommended to test your water on a regular basis, rather use a sanitation regime that is validated to eliminate generic *E. coli* from recirculated water. Periodic sampling then can be used to verify that your validated treatment is still working.

   -KS

3. If you had to give your best guess with the information given[,] [w]hat would you think is the best amount of chlorine and [pH] for an apple dump tank[?]
   Almost impossible to say without more data. What we can say is if you’re using a hypochlorite-based chemistry like sodium hypochlorite (aka: bleach), should target a pH around 6.5 to 7.5 (you may see pH recommendations of 6.0 to 7.0 but that is still in the same ballpark). The amount of free chlorine you have at that pH will depend on how clean the water is, how often its changed, etc. I’ve seen recommendations from 50-200, though 100 ppm should work in all but the most contaminated flume situations. Remember as the demand goes up, so does the need for increased sanitizer. If you have cleaner water or are using a single pass system, 10-50 ppm could be adequate.

   -KS

4. What is the recommended PAA residual for a recirculated system such as an ice injector or chiller[?]
   Again, it depends on the load in the system, but typically levels are between 40-80 ppm. There is little research on lower levels of PAA and its effectiveness. I hate to say this, but it really depends on your situation.

   -KS

5. I would like an [in-depth] look at using products to sanitize food contact surfaces as well[.]
   There is a lot of information out there. Not sure what the question is asking for, but here are some websites that offer information on sanitizers on food contact surfaces, some specifically for produce, and one website on the National Organic Program (NOP) requirements. If this doesn't answer your question, please feel free to drop me a line.
   - https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?FR=178.1010
   - https://hgic.clemson.edu/factsheet/farm-food-safety-choosing-a-sanitizer-for-washing-fresh-produce/
   - https://ucfoodsafety.ucdavis.edu/sites/g/files/dgvnsk7366/files/inline-files/26414.pdf
   - https://www.ams.usda.gov/sites/default/files/media/8%20Cleaners%20and%20Sanitizers%20FINAL%20RGK%20V2.pdf
   - https://www.ebpsupply.com/blog/food-grade-sanitizers
   - https://www.foodprotection.org/files/food-protection-trends/may-jun-21-fraser.pdf

   -KS

6. Does the free chlorine measurement include both the HOCl and OCl- forms of chlorine (this was Don's question that I think deserves to be answered here as we lost a lot of folks before I could answer).
   Yes, it does. When you make a free chlorine determination, it includes the free and active HOCl and the free and less active OCl-; which is why we want to control pH and have the majority in the HOCl form, if possible.

   -KS