**Conference for Food Protection**

**2016 Issue Form**

**Issue: 2016 III-041**

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| **Council Recommendation:** | Accepted asSubmitted |  | Accepted as Amended |  | No Action |  |
| **Delegate Action:** | Accepted |  | Rejected |  |  |  |

*All information above the line is for conference use only.*

**Issue History:**

This is a brand new Issue.

**Title:**

Biofilm definition

**Issue you would like the Conference to consider:**

There are five instances of the word "biofilm" in the 2013 FDA Food Code, all of which are in Annex 3, Public Health rational. Section 1-201.10 of the FDA Food Code provides no definition for this (relatively) new word. Though the word first appeared in literature in the Journal Microbial Ecology, (1975: Mack WN, Mack JP, Ackerson AO, "Microbial film development in a trickling filter," 1975, Volume 2, Issue 3, pp 215-226), it has only come into common parlance over the course of the past ten to fifteen years. It is now well known that biofilms are a problem in food and beverage operations, including potable water and ice handling and dispensing systems in both food and beverage processing and in the retail food industry. This is a Priority foundation item.

**Public Health Significance:**

Biofilms protect their microbial inhabitants from oxidizing agents and augment their resistance to cleaners and sanitizers. Understanding the characteristics of biofilms, their formation, propagation, growth and the support that they provide to the thriving symbiotic multi-species communities they build is critical to controlling certain risk factors for food borne disease transmission. Now that there are so many publications that identify and characterize biofilms and their myriad microspheres, it is time for the FDA Food Code to be updated to acknowledge biofilms role in food borne disease transmission by providing them with an accurate definition in Section 2-201.10.

**Recommended Solution: The Conference recommends...:**

a letter be sent to the FDA requesting the 2013 Food Code be amended as follows (language to be added is underlined):

**Section 1-201.10**

"Biofilm" means an assemblage of microbial cells along with inorganic particles (minerals and soils) that bind to surface. Pseudomonas aeruginosa is a pathogen in many if not most biofilms. Other pseudomonads are often in the biofilm brew, some of which have long stalks enabling them to hold-fast the colony. Some common biofilm pseudomonads are motile, using flagella to propel themselves along with any of their attached friends. Protozoa (eg., amoeba) feed on the biofilm chunks that the colony sacrifices and cuts loose once they are no longer needed for processing their mineral and nutrient specialties. Mineral precipitates are an attraction to biofilms, both due to their functional structure, but also because that are necessary for the metabolic survival of the many and varied species of organisms that make the colony. Gentle rinsing of food contact surfaces or sanitization without effective prerequisite cleaning is not effective due to the variable bio-burden and adhesion characteristics of biofilms. Biofilms must be removed from food contact surfaces before the application of an approved food contact surface sanitizer. Plumbing lines that are used to convey liquid foods are especially vulnerable to biofilm propagation due to the inability to inspect, clean and sanitize internal wetted surfaces.

**Submitter Information:**

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