**Conference for Food Protection**

**2016 Issue Form**

**Issue: 2016 III-040**

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| **Council Recommendation:** | Accepted as  Submitted |  | 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:**

Add a definition for ATP

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

Adenosine triphosphate (ATP) is well known as the "molecular unit of currency" of all intracellular energy transfer. It is a nucleoside triphosphate (NTP) and is among the nucleotide derivatives necessary for all life comprising the building blocks of nucleic acids, eg., DNA and RNA.

For food safety purposes, the measurement of ATP on surfaces is a measure of the total bioburden (that would otherwise consume the oxidizing character of any approved sanitizer) on the sampled surface. Until now, the entire focus of hygienic operations has been on sanitizing. Incredible sums of money are spent evaluating the efficacy of sanitizers and (to a lesser extent) their toxicological effects. Every approved food contact surface sanitizer found in section 7-204.11 of the 2013 FDA Food Code which references Title 40 of the Code of Federal Regulations, section 180.940 (40 CFR180.940), where it is identified by its chemical identifier which in turn is given its own specific "maximum contamination level" (MCL) for its listed applications. It seems ironic that the U.S.. Congress refers to the sanitizers that they have "approved" as safe within their MCL's, as contaminants. Congress did not stop there with their disparaging descriptions these "approved" chemicals. The short title of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) found on its page 3 describes all of the products regulated by FIFRA as ***ECONOMIC POISONS.*** All of the chemicals regulated by FIFRA are lumped into the genre of "pesticides", whether they are sanitizers, disinfectants, insecticides, fungicides, or rodenticides. What is an economic poison? We are told that they are poisons to the vermin and pests that diminish yields which impacts our economy. Unfortunately, these very same products poison us causing myriad of maladies reducing total factor productivity, adding huge health care costs many of which are now paid for by government programs, the results of which is a diminished, poisoned economy.

All of this focus on sanitizers reduces the focus on clean. What is "clean" and how do you measure it? Clean "to sight and touch" is very subjective and qualitative, and is of no practical use for food contact surfaces. Edible oils and animal fats can be on surfaces and be "invisible". We do not "touch" food contact surfaces with our bare hands or fingers, as to do so is to contaminate that surface. Until now, the only quantitative measure used to determine efficacy of a cleaning and sanitizing regime has been the efficacy of the sanitizer alone as tested in a laboratory. Efficacy is expressed in terms of log reductions of American Type Culture Collection (ATCC) test organisms by microbiological assay. New technology for accurate quantitative measure of "clean" is now available from multiple manufacturers in the form of luminometer's that measure the bioluminescence of luciferace. ATP should be defined in the FDA Food Code.

**Public Health Significance:**

We can improve that which we can measure. ATP is well known and understood to be the molecular unit of energy at the core of all intracellular exchange processes. ATP persists even after the loss of virulence, cellular death, and inactivation or denaturing of microbial cells and NTP. Today, using a new, accurate and affordable technology, we have the opportunity to broaden our understanding of one of the most, if not the most significant of all risk factors for disease transmission; cross-contamination. ATP luminometers effectively measure the bioburden on a surface. This measure enables us to more effectively clean, so that when we sanitize our chances of eliminating the target pathogens is far greater.

References:

http://www.cdc.gov/HAI/toolkits/Appendices-Evaluating-Environ-Cleaning.html https://en.wikipedia.org/wiki/Adenosine\_triphosphate

**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**, Definitions

**ATP** means adenosine triphosphate. ATP is the molecular unit of currency of all intracellular energy transfer. The amount of ATP on a surface measured in relative light units (RLU's) by an ATP luminometer is indicative of the degree of contamination on a surface. ATP measurements enable reasonable accuracy for cleaning (decontamination) process validation. Clean food contact surfaces are prerequisite to sanitization.

**Submitter Information:**

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It is the policy of the Conference for Food Protection to not accept Issues that would endorse a brand name or a commercial proprietary process.