**2-BREWERY SAMPLING**

**1-Brewery air**

The microbial population of brewery air, either compressed or ambient, is most conveniently evaluated by sampling with an air sampler. Capella Innovation can go on site and sample the air for you and provide you with the identification of various bacteria, yeast and molds present within your facility.

**Process equipment and surfaces**

In order to assess sanitary conditions of brewing equipment, lines, tanks or surfaces have to be sampled using swabbing techniques. Those methods are described in detail in food surfaces sampling procedures on this website. Capella Innovation will provide you with the swabs, and those can be shipped back to our laboratory for microbiological analysis. These samples allow for the identification of various pathogens (bacteria, yeast or molds).

**2-Swab surface using ATP Bioluminescence**

The following methodology provides a general swabbing method to be utilized to determine the hygiene of brewery surfaces using adenosine triphosphate (ATP) bioluminescence detection instrumentation. Unlike the methods described above, the results obtained are either negative (clean) or positive (dirty) but do not allow for the identification of a specific pathogen.

**Reagents** (a) Swabbing and analysis supplies, as required by the manufacturer's protocol for the specific luminometer being utilized (i.e., ATP-free swabs, wetting agents, enzyme reagents, sampling pens, etc.). Capella Innovation will provide you with the swabs, which can be shipped back to the laboratory for ATP analysis using a Luminometer.

**Method**

Moisten an ATP-free swab with sterile wetting/rinse solution. This step is unnecessary if the test swabs being used are already premoistened. Swab the designated surface test area (typically 12 x 12 cm) with a zigzag pattern in one direction and again in the perpendicular direction while rotating the swab. Maintain a light downward pressure on the swab during this process.

Please refer to food sampling for procedure.

**3-Process water**

The analysis of water, process water, make-up water, rinse water, and wastewater are a requisite of the brewing and related laboratories and the methods employed are outlined in Standard Methods of Water Analysis. Capella Innovation can provide you with the microbiological analysis of your water from 100mL samples. The water sampling procedures are described elsewhere on this site.

Reference

1. American Public Health Association. Standard Methods for the Examination of Water and Wastewater, 17th ed. The Association (website: www.apha.org), 1989.

Please refer to water sampling for procedure.