1. PURPOSE

This Standard Operating Procedure (SOP) describes the methods for routine monitoring for potential microbial pathogens in laboratory animal facilities.

The goals of the program are the following:

·   To ensure that sanitization procedures result in a significant decrease in bacterial surface contamination.

·   Eliminate pathogens from items that are mechanically washed.

·   Demonstrate a significant decrease in bacterial loads on items that are washed by hand, with particular concern for pathogens.

·   Ensure that water in automatic water systems meets the specifications of the local public drinking water sanitary standards.

2. RESPONSIBILITY

Facility manager, veterinarian

3. MATERIALS

3.1.   Sample collection materials

3.2.   Adenosine triphosphate (ATP) surface hygiene monitoring equipment

4. PROCEDURES

4.1.   Items to be sampled:

4.1.1.   Water:

4.1.1.1.   From taps where bottles or tanks are filled

4.1.1.2.   From automatic reverse osmosis watering systems

4.1.1.3.   From autoclaved bottles

4.1.2.   Cages, equipment, and enclosures

4.2.   Sample collection:

4.2.1.   Sample items immediately after they are sanitized and dried. Items must air dry, do not wipe dry.

4.2.2.   Identify all samples with the description of the item sampled and sampling date.

4.3.   Automatic Cage Washers:

4.3.1.   Monitor water temperature of automatic cage washers daily using a chemical indicator strip. If the cage washer is used less than once a week, use a chemical indicator strip for each run. Rinse water temperature should reach 180° F (82° C). Record results and keep on file in the facility.

4.3.2.   Record all service and routine maintenance. Maintain records at the facility.

4.3.3.   Monitor efficacy of cage washer sanitation on a quarterly basis. Sample items as described in Section 4.2 immediately after they are washed and (dripped) dry.

4.3.4.   Sampling:

4.3.4.1.   Swab the interior of cages and enclosures with swabs. Refer to written measures on ATP Detection System.

4.3.4.2.   The veterinarian will establish the pass/fail limits for the ATP test.

4.3.4.3. If the ATP test fails, a RODAC (Replicate Organism Detection And Counting) imprinting test is to be used.

4.4. Equipment washed by hand:

4.4.1. Monitor the efficacy of sanitation on a quarterly basis for rodents and rabbits and yearly for other species (NHPs).

4.4.2. Sample items as described in Section 4.2 immediately after they are washed and (dripped) dry.

4.4.3. Sampling:

4.4.3.4. Swab the interior of cages and enclosures with swabs. Refer to written measures on ATP Detection System.

4.4.3.5. The veterinarian will establish the pass/fail limits for the ATP test.

4.4.3.6. If the ATP test fails, a RODAC (Replicate Organism Detection And Counting) imprinting test is to be used.

4.5. Autoclaves:

4.5.1. Perform weekly monitoring using chemical and biological indicators.

4.5.2. Record all service and routine maintenance. Maintain records at the facility.

4.6. Automatic Watering Systems:

4.6.1. Sample systems quarterly to yearly depending on the recommendation from the veterinarian (based on system and results).

4.7. Exceptions to Testing Standards:

4.7.1. Research animals housed in an agricultural setting and those animals whose husbandry does not require environmental sanitization, such as fish, may or may not be included in the microbiological monitoring program at the discretion of the veterinarians and the Facility Animal Care Committee (FACC).

4.8. Evaluation of results:

4.8.1. Results will be interpreted by a veterinarian.

4.8.2. Consideration is given to:

4.8.2.7. The method of sanitation

4.8.2.8. The species concerned

4.8.3. All results will be recorded and/or archived at CMARC.

5. REFERENCES

5.1. Turner, D. E., Daugherity, E. K., Altier, C., & Maurer, K. J. (2010). Efficacy and limitations of an ATP-based monitoring system. Journal of the American Association for Laboratory Animal Science : JAALAS, 49(2), 190–195.