A. Purpose

The Guide for the Care and Use of Laboratory Animals Eighth Edition (Guide) states “Assessing the Effectiveness of Sanitation Monitoring of sanitation practices should fit the process and materials being cleaned and may include visual inspection and microbiologic and water temperature monitoring”, (Guide for the care and use of laboratory animals, 2011, p. 73). Additional information regarding sanitation expectations is available in WSU IACUC policy #1 Adequate Animal Care in Study Areas and Satellite Animal Housing Locations at https://iacuc.wsu.edu/policies/

Described below are procedures employed in sanitizing caging and equipment used in animal care and the monitoring protocols to be used to ensure adequate sanitation is being achieved.

B. Expectations

1. COMMERCIAL CAGE WASHING UNITS: Cage washing units rely on water pressure and either high temperatures (≥180° F) OR disinfectant agents to achieve cleanliness and sanitation. Cage washers are monitored on a regular basis to ensure unit is working properly and adequate sanitation is being accomplished.

   a. Visual Monitoring: Items washed in a commercial cage washer are inspected after each load to ensure items appear clean. All visible dirt and scale should be removed by the washing process, but if items do not appear clean, items are re-washed prior to use and unit should be evaluated by a qualified service technician.

   b. Temperature Monitoring: If high temperature (≥180° F) is the mode of disinfection of the cage washing unit, an adhesive, heat monitoring device is run through the washing unit with cages/equipment at least once per week. The tape is dated and stored in a permanent record. If the tape indicates the washing unit did not reach sanitation temperature (≥180° F), the load is re-run, and additional monitoring is performed. If continued testing indicates unsatisfactory results, unit is evaluated by a qualified service technician. The facility manager is to inform the Office of the Campus Veterinarian of system failures and discuss a backup plan for effective sanitation.

   c. Surface Monitoring: In order to ensure the cage washing unit is sanitizing all surfaces of the cages/equipment effectively, washed items are monitored for the presence of bacteria quarterly.

1. HAND-WASHED EQUIPMENT: Cleaning items by hand-washing relies on physical removal of dirt, debris and scale and the use of an effective disinfectant agent to sanitize items. Items which are hand-washed on a regular basis are monitored at least annually to ensure sanitation is being achieved.

   b. Visual Monitoring: Cages/runs/equipment which are hand-washed are inspected after each washing to ensure items appear clean. All visible dirt, debris and scale should be removed by the washing process, but if items do not appear clean, items are re-washed prior to use.
c. Surface Monitoring: In order to ensure the hand-washing protocol is sanitizing all surfaces of the cages/equipment effectively, washed items are monitored for the presence of bacteria. Items used for feeding such as feed/water bowls, water bottles, and sipper tubes as well as small primary enclosures such as small rodent or bird cages, are monitored to verify that the cleaning procedures are effective. Once individualized cleaning procedures have been documented to be effective, monitoring will continue at least annually and repeated if the cleaning procedure is modified.

2. AUTOCLAVE UNITS: Autoclave units used to sterilize caging and equipment used in animal care are monitored to ensure the unit is working properly and sterilization is being achieved.

   a. A steam sterilization integrator strip is run with each load processed in the autoclave unit. Color change indicates sterilization criteria were met. A minimum of Class 5 must be used. Strips are placed inside the item to be sterilized to ensure interior surfaces are adequately sterilized. If bulk supplies are being autoclaved (i.e. bedding, feed, wrapped packs, etc.), the strip is placed/buried within (wrapped packs) or between (bedding/feed) the material. If the integrator strip indicates sterilization criteria was not met, the load should be re-run. Further monitoring is performed and the evaluated and serviced by a qualified service technician. The Office of the Campus Veterinarian is to be notified.

   b. A biological indicator is used to test autoclave units. “Biological indicators (BIs) are the most accepted means of monitoring the sterilization process because they directly determine whether the most resistant microorganisms (e.g., Geobacillus or Bacillus species) are present rather than merely determine whether the physical and chemical conditions necessary for sterilization are met. An inactivated BI indicates that other potential pathogens in the load have also been killed.”

   The Office of the Campus Veterinarian recommends following the CDC guidelines for biological indicators (https://www.cdc.gov/infectioncontrol/guidelines/disinfection/sterilization/sterilizing-practices.html). Although, for autoclaves used less frequently a modified schedule (monthly or with each load) may be adequate. A record must be kept of the biological indicator test results. If biological indicator results indicate sterilization criteria was not met, the unit must be evaluated and serviced by a qualified service technician, and the Office of the Campus Veterinarian is to be notified.

3. Methods for Quarterly Sanitation Monitoring

   a. Measurement of residual adenosine triphosphate (for example -Charm novaLUM analyzer, PocketSwab Plus). The presence of ATP indicates that it has not been adequately cleaned and has the potential to harbor and support bacterial growth.

   b. RODAC Plates. Several freshly cleaned items are randomly selected for testing using RODAC agar plates which detects the presence of microorganisms by the appearance of surface colonies. Sterile culturette swabs are used to sample insides of lixits, sipper tubes and water bottles. Plates and swabs are processed using the "Standard Operating Procedures for Processing Samples Submitted for Sanitation Monitoring". If culture results indicate poor or unsatisfactory sanitation, further monitoring should be performed and the cage washing unit will need to be evaluated and/or serviced by a qualified service technician or handwashing SOPs will be re-evaluated.
4. Contact information:

   a. Sanitation Monitoring for ATP and surface colony counts is available through the WSU Office of the Campus Veterinarian 509-335-6246

   b. Recommendations on types and sources of Biological Indicators (BI's) are available through the WSU Office of Research Assurances 509-335-4462.

References:

Guide for the Care and Use of Laboratory Animals, 8th edition

Charm Animal Lab Science novaLUM Reference Guide, 04-Sep-2009

Becton, Dickinson and Company, 2005


OSHA March 1, 1990

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