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UQBR SOP 48 Equipment Usage

REQUIREMENT:

1. To ensure that the requirements and regulations as set out by the following are met as far as practicable:
 - QLD Workplace Health and Safety, and
 - UQ OH&S
2. To standardise practice for all UQBR staff and researchers within UQBR facilities.
3. Annual review is required to maintain best practice and usability of this SOP.

RESPONSIBILITY:

It is the responsibility of the individual performing animal handling procedures and techniques to ensure they have been assessed as competent.


Please Note:

This UQ Biological Resources (UQBR) SOP expands upon UQ Animal Ethics Unit SOPs. This document outlines the procedures followed by UQBR and should not be referenced in Animal Ethics Applications.

No changes or deviations from this SOP are to occur unless the Director of UQBR gives prior authorisation.

NB: The use of (*) indicates this statement is dependent on the facility procedures

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OBJECTIVE:

To describe how to use various equipment items located within UQ Biological Resources

I. EQUIPMENT

II. PREPARATION OF EQUIPMENT

III. PROCEDURE

Autoclaves


Commonly Used Cycles

- Warm-up/Test Cycle – Completed after wake-up of a unit, or after prolonged inactivity.
- Hard Goods – Non-porous items such as cage bases, bottles, cage lids or food hoppers and similar equipment items, that do not need to remain dry
- Dry Goods – For porous items such as food, bedding, scrubs, paperwork, PPE consumables, animal enrichment items, and animal transport boxes that should remain as dry as possible
- Waste – For waste loads needed to comply with regulations. Any materials can be added to this load provided it reaches temperature for 15 minutes at the most dense part of the load.

Packing Trolleys for Autoclaving

1. The way the autoclave is loaded is important for personal safety and integrity of the autoclaving process e.g. individual item weight, total load weight and height of load.
2. Ensure items are autoclavable
3. Autoclave trolleys should be packed to maximize steam penetration across the contents evenly i.e. place items allowing for easy passage of steam
4. Trolleys should be filled to no more than 75% of holding capacity to allow for expansion and assist with steam penetration
5. Ensure all shelves are loaded between knee and shoulder height for heavy items (5-10kg)
6. Avoid compressing materials or sealing bags for autoclaving. This restricts steam penetration, but will be required for autoclave bags used with waste loads
7. Autoclave bags should allow steam to reach the contents or allow steam to be generated internally (i.e. add water before sealing)
8. Heat insulating gloves and face shields should be used when unloading a trolley from autoclaves

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9. Items for re-use versus disposal should be packed separately
10. Materials for decontamination versus sterilisation should be autoclaved separately



Figure 2. Example of autoclave trolleys packed following the guidelines described

Procedure

1. Refer to the manufacturer's instruction manual to confirm how to operate the autoclave in your facility.

Confirming Sterilisation – Indicator Strips/Tape

1. Used to assist in confirming a successful autoclave cycle. They should not be relied upon but used as a guide only.
2. Depending on the indicator strip/tape used generally the white stripes will change to black following a successful autoclave cycle, indicating that the required temperature and time period was reached, these values will be manufacturer dependent.
3. Should be attached to each bag or bag of items with a date written clearly on the indicator strip/tape. This date can later be used to assist with stock rotation.
4. The indicator strip/tape can be placed in several positions including areas where steam penetration may be more difficult.

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Figure 1. Example of autoclave indicator tape

QAP Autoclaving

- Keep printed copies of autoclave cycles for archiving
- All QAP Loads are double bagged with a run time sufficient to generate steam inside the load. This may differ between autoclaves and must be confirmed with a simulation load.


Autoclave Safety

1. Ensure correct PPE is used when unloading autoclaves as super-heated materials may explode when moved or shaken during the cooling process (e.g. confined liquids)
2. Do not stand directly in front of opening doors
3. Staff to advise supervisors and managers when any faults or errors are noticed when operating the autoclave
4. At no point should sealed non porous items be placed in an autoclave e.g. glass jars
5. Ensure autoclave accessories such as bridging ramps and unloading utensil are used where available to safely load and unload the autoclave trolleys
6. Preference is to ensure full loads and the trolley capacity are full to maximise efficiency of the autoclaves.
7. Large autoclaves pose an entrapment risk. Staff/persons should not enter the autoclave or place any body part inside the autoclave e.g. use autoclave accessories.

Maintenance

1. Refer to manufacturer's instructions to confirm maintenance services and checks
2. All UQBR Autoclaves are serviced 3 monthly to ensure operations and compliance with relevant regulators.

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Bottle De-Capper

Bottle Cap Removal Procedure

1. Refer to manufacturer's instructions to confirm how to operate your bottle de-capper.
2. In general, place de-capper over the bottle cap, flex away from the cap or allow pressure to remove cap

Maintenance

1. Refer to manufacturer's recommendations


Safety

1. Ensure correct PPE is used when using equipment items
2. Using pressurised systems to remove capped bottles may result in splintering of some water bottles
3. Apply basic ergonomic principles when repetitively using equipment items that may cause strain to the body.



Figure 3. Example of bottle cap removers

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Tunnel and Cabinet Washers


Tunnel Wash Procedure

1. Refer to manufacturer's instructions to confirm how to operate the tunnel washer in your facility
2. Procedures for staff to be familiar with when operating tunnel and cabinet washers include:
 - Pre-start checks – power, valves, (detergent supplies if required)
 - Loading and positioning of equipment items
 - Load equipment items upside down to avoid capturing water
 - Cycle selection
 - Water temperature appropriate (82°C or higher)
 - Retrieving items once clean

Safety

1. Staff should be aware of the location of emergency stop buttons to stop all washer and conveyor operations
2. Staff should be aware of how to abort cycles
3. The tunnel or cabinet washer may become hot to touch during operation or due to steam build up. Avoid touching or opening parts of the machine during operation
4. Large washers pose an entrapment risk. Signage for egress path must be displayed and all staff must be aware
5. Facilities should regularly arrange noise assessments to determine if staff need to be enrolled on the hearing conservation program due to noise from operating tunnel or cabinet washers and to capture surrounding noise in wash areas
6. If retrieving items from a cabinet washer, ensure the power is off and all steam has escaped
7. When unloading from a conveyor washer appropriate engineering or administrative controls should be in place to protect from hot rinse water
8. Do not operate Tunnel washer without all parts in place e.g. sieves and cover strips or if broken
9. Do not hose the exterior of a tunnel washer due to possible exposure to electrical controls

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Maintenance

1. Refer to manufacturer's instructions to confirm maintenance services and checks
2. Managers are responsible to oversee the maintenance schedule of equipment items
3. Only trained staff should complete maintenance tasks
4. Common daily/weekly maintenance may include but not be limited to:
 - Cleaning screens
 - Unclogging water spray jet valves
 - Cleaning debris screen/catchers
 - Cleaning sump pump suction strainer
 - Removing hard water deposits using manufacturers recommendations
 - Cleaning probes e.g. temperature and clean water level control probes
 - Oiling switch mechanisms



Figure 4. Example Tunnel and Cabinet Washers

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Safety Steps


Safety

1. Prior to purchasing discuss with UQBR-WHSC to confirm suitability of the step for the task
2. Consider if equipment/task can be lowered to remove the need for a safety step
3. Consider the number of items and weight that can be safely carried
 Note: This is for the individual to assess based on their strength and the size, weight and shape of items to be carried from the safety step.
4. Ensure the safety step is placed on a flat even surface
5. When in use both feet should be placed in the center of the safety step
6. Avoid using when rushed or likely to be distracted
7. Care to be taken at all times due to environmental condition e.g. wet environments
8. Steps should have the following features:
 - Non-slip tread on the top
 - Non-slip base
 - Appropriate weight rating
 - Height sufficient for task
 - If 3 or more steps purchase options with handles
 - Storage - Easily folded or stored safely
 - Portability – Castors to facilitate movement and lock when weight applied



Figure 5. Example of Appropriate Safety Steps for Use in Some Tasks.

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Pallet Jack

Procedure

1. Prior to use ensure the pallet jack in in good condition
2. Familiarise yourself with all controls and ensure the controls are responsive, controls may include:
 - i. Lifting mechanism
 - ii. Lowering mechanism
 - iii. Brake if available
 - iv. Parking
3. Check the route is clear and free from hazards e.g. uneven surfaces
4. Use the release on the pallet jack to low the forks to ground level
5. Line the pallet jack and pallet to the jack's two forks go through the openings at the front of the pallet
6. Unlock the release
7. Pump/press button or press lever on the pallet jack until the pallet is off the ground
8. Wheel the load by pulling the handle wherever you need it to move to
9. Release the pallet jack and remove it from beneath the pallet

Maintenance

1. Refer to manufacturer's instructions to confirm maintenance services and checks
2. Only qualified and trained persons should completing servicing or maintenance

Safety

1. Steel capped safety shoes should be worn when operating a pallet jack
2. Ensure feet stay clear of the pallet jack
3. Surfaces should be firm, smooth and free of obstructions e.g. rubbish
4. Move the load slowly to compensate for any movement in the surroundings
5. Always push the load, avoid pulling the load unless moving down an incline or reversing.
6. Avoid using on inclines
7. If the load obstructs your view ensure a co-worker assists to guide you
8. The pallet jack should be stored in a safe designated area when not in use
9. Use caution to not exceed recommended weight limits
10. Where heavy loads are moved two people may be required
11. Ensure loads are stable and properly balanced

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Figure 6. Example of Pallet Jack

IV. SAFETY

1. All accidents, injury or near misses are to be reported immediately to the Facility Manager and recorded on a UQ OHS Incident Report Form
2. Refer to UQBR SOP 52 Reporting Faulty Equipment following equipment breakdown

V. REFERENCES

1. OGTR PC2 work requirements and regulations: <http://www.ogtr.gov.au>
2. QLD WH&S Act 2011: <https://www.worksafe.qld.gov.au/laws-and-compliance/workplace-health-and-safety-laws/laws-and-legislation/work-health-and-safety-act-2011>
3. UQ OHS Unit: <http://www.uq.edu.au/ohs/>
4. UQ OHS Incident Report Form: <http://www.uq.edu.au/ohs/index.html?page=141331>
5. UQ Safety Notice – Autoclaves for Biological Waste Sterilisation
<http://www.uq.edu.au/ohs/COMMUNICATIONS/2016/SafetyNotice/Autoclaves-biological-waste.pdf>
6. UQBR SOPs: [V:UQBR/SOPs/Common/UQBR SOPs](#) and <http://biological-resources.uq.edu.au/secure/uqbr-sops>

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