TECHNICAL GUIDANCE

Subject: Biosecurity, Transportation, and General Maintenance and Sanitation Requirements for GreenFeed & QuickFlux

Biosecurity:

C-Lock recommends the following Cleaning and Disinfection protocol for biosecurity. Customers may develop and follow their own sanitation protocols at their own discretion.

Note - Prior to cleaning, ensure the equipment has been powered off.

4-Step Cleaning and Disinfection protocol for GreenFeed:

1. **Dry Clean:** Manually scrape, brush, or sweep away all gross organic material (feed, soil, manure) from the equipment.
   a. Feed Dish - Remove the feed dish and dish mounting board to allow access to the area surrounding the electronics box. Do not remove the cover of the electronics box. Heated Dish Version - Do not disassemble the dish mounting board from the dish.
   b. Vacuum the area surrounding the electronics box to ensure all dry matter is removed.
2. **Wash**: Scrub all exterior surfaces of the GreenFeed main body with warm water and soap or a commercial detergent.
   a. Feed Dish – The standard feed dish and dish mounting board may be pressure washed outside of the GreenFeed hood prior to scrubbing with soap and water. Heated Dish Versions must be hand washed due to sensitive electronics housed between the dish and dish mounting board.
   b. Hood - Scrub the inside surface of the hood by hand. Do not scrub the webcam and proximity sensor surfaces. Avoid dripping water inside the area surrounding the electronics box.
3. **Rinse**: Thoroughly rinse away all remaining soap and suds from EXTERIOR surfaces of the main body with low-pressure cold water.
   a. Feed Dish – low or high-pressure water may be used to remove soap from the standard feed dish. Heated Dish Version – use only low-pressure water and avoid forcing water between the dish and dish mounting board.
   b. Hood - Wipe down the inside surface of the hood with clean water.

c. It is safe to spray pressurized water onto sliding alleyway panels and the skid base.
d. Do not spray 'into' any part of the GreenFeed, do not spray the chimney or weather station, do not spray the battery box (if present).

4. **Dry & Disinfect:** Allow the equipment to air dry completely. Once dry, apply a chemical disinfectant. Follow all application, contact time, and rinse specifications per disinfectant label. Application by wipe or spray bottle is acceptable.
   a. Feed Dish - NOTE: many disinfectants can harm animals and should be rinsed off with potable water.
   b. AVOID spraying disinfectant (or anything else) into the air intake.
   c. Re-assemble the dish mounting board and feed dish to the GreenFeed.
   d. Wipe the proximity sensor and webcam lens with a dry cotton swab.

4-Step Cleaning and Disinfection protocol for QuickFlux:

1. **Dry Clean:** Manually scrape, brush, or sweep away all gross organic material (feed, soil, manure) from the equipment.
   a. Collector Assembly - Disconnect the Collector Assembly from the hose and the hose from the Hose Adapter/Sample Intake of the QuickFlux main unit to allow thorough cleaning of these components.
   b. Fan Outlet & Batteries - Remove these components to allow cleaning underneath the components.
2. **Wash:** Scrub all exterior surfaces of the QuickFlux main body with warm water and soap or a commercial detergent. Avoid dripping water inside the Fan Outlet and Hose Adapter / Sample Intake holes while washing.
   a. Scrub the collector assembly, hose, tires, and fan outlet components.
   b. Caution - Gently scrub the components on the top of the QuickFlux without applying large amounts of water. These components - which include the Battery Mounts, Power Switch, Ambient Intake, Button and Light, Antenna, and Exhaust - are water resistant but should not be soaked with water. The batteries should be gently scrubbed in the same manner, paying close attention to avoid dripping water across the battery leads or inside the battery housing.
3. **Rinse:** Thoroughly rinse away all remaining soap and suds from the main body, top components, and batteries using a wipe or cloth and clean water with the same cautions as noted in the Wash section.
   a. Low-pressure water can be used to rinse the collector assembly, hose, tires and fan outlet components.

   b. Do not spray 'into' any part of the QuickFlux.

4. **Dry & Disinfect:** Allow the equipment to air dry completely. Once dry, apply a chemical disinfectant. Follow all application, contact time, and rinse specifications per disinfectant label. Application by wipe or spray bottle is acceptable.
   a. Collector Assembly - NOTE: many disinfectants can harm animals and should be rinsed off with potable water.
   b. AVOID spraying disinfectant (or anything else) into the Hose Adapter / Sample Intake and Fan Outlet holes.
   c. Re-assemble the hose, collector assembly, fan outlet and batteries to the QuickFlux.

CAUTION:

- Do not disassemble any sensor equipment or open electronic enclosures.
- The intake and hood on the GreenFeed and the Collector Assembly on the QuickFlux are high-contact areas, special care should be taken to disinfect them. However, be aware that there are sensors and sensitive equipment near the intake and hood.
- No aerosols should be used in or around hood, intake or collector while the machine is turned on. This can damage sensors and harm data collection.

Transportation:

Before a GreenFeed or QuickFlux is transported from one facility to another, consider following the 4-step Cleaning and Disinfection protocol. Additionally, consider changing out the filters.

When a GreenFeed or QuickFlux is brought into a facility, consider performing step 4 of the protocol, including disinfecting the equipment tires.

GreenFeed must be put into a shipping configuration to safely transport. See: GreenFeed_Pasture_Trailer_Travel_Preparation. Prior to transportation, users must:

1. Ensure unit is turned off (See GreenFeed Manual)
   a. If unit has solar box, ensure solar is powered off
2. Empty all bins of any feed
3. Remove Chimney and Weather Station if present
4. Secure pressurized gas bottles with cylinder caps
   a. Prior to disconnecting gas lines, ensure all valves are in the closed position

5. If part of a Pasture Trailer unit, ensure solar-panels are stowed in towing configuration
    a. A ratchet strap may be used to secure panels so that they slope into the direction of travel

General Maintenance / Sanitation:

To keep the GreenFeed and QuickFlux operating efficiently, some basic maintenance and sanitation guidelines are called for:

- Step 1 of the protocol should be followed on a regular basis to ensure the air intake ports in the GreenFeed feed dish are not obstructed and the QuickFlux Collector Assembly is clean.
- Filters should be replaced at regular intervals as per the user manual
- The 4 Step Cleaning and Disinfection protocol may be considered prior to transporting the equipment and between trial programs
- Internal electronic components should not be tampered with in any way and generally do not need to be cleaned
- Water should not be sprayed onto any internal components to clean
    - The GreenFeed and QuickFlux are generally sealed and very resistant to moisture, but water will damage delicate components if enclosures are left open
- Rough handling of GreenFeed can result in equipment failures

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