

GreenFeed Pre-Experiment Checklist

Optionally fill out this checklist using a Google Form:

<https://docs.c-lockinc.com/checklist> (Google Account required)

<https://docs.c-lockinc.com/checklist-nogoogle> (Without a Google Account)

General Experiment Information:

1. What is the planned date range for this trial? _____

2. Unit number of the GreenFeed system(s) that will be used on this trial:

Please indicate the type of the GreenFeed system(s):

____ Tie-stall ____ Free-stall ____ Trailer ____ Milking robot

**** For tie-stall systems, please wait 2 min between animals during sampling; and the fan and ventilations should be on during the entire sampling day ****

3. Times of the day for sampling (All day/Morning/7am to 10am/etc):

**** If spot sampling, please leave the system(s) on for the entire sampling day and allow 30 minutes after startup for sensors to warm-up ****

4. Please attach photos of all (zero and span) calibration gas certificate labels. Please include analytical concentrations (ppm/%) of each gas in the photos.

5. If known, what is the date that these calibration gases were first used by this/these GreenFeed system(s)? _____

6. What is the pressure of the calibration tanks? Please include the pressure of each tank for each GreenFeed being used. Pressures should be more than 300psi (20,000mbar):

Zero: _____ Span: _____

7. Were these gases purchased as part of the C-Lock Global Gas Standard: yes / no
Please note that C-Lock cannot guarantee the accuracy of calibration gases that are purchased from another vendor.

- To purchase global gas standard tanks, please contact us.

8. When was the in-line sample filter(s) last replaced? If unknown, a new filter will be needed: _____

9. If equipped, will the system(s) be using a dual hopper: Yes No
10. Please provide a photo of the feed being used. It must be <7mm diameter.
11. Internet connection used: Wi-Fi Ethernet Cellular Other: _____
12. Which systems, if any, will be running on battery power? _____
13. Please attach at least two (2) photos of the alleyway and surroundings of each GreenFeed.
14. If system(s) are being used in a contained area (such as a barn), does the area have any environmental control systems, such as a large ventilation fan, heater, etc:
- Fan Heater Other: _____
15. Number of animals on trial (up to 40 per GreenFeed system): _____
16. Animal RFID tag type: Collar Ear Other: _____
17. Are the animals tagged with multiple RFID tags? Yes No
If animals are tagged with multiple RFID tags, please attach the cross-reference list.
18. Please provide a short description of trial (1 or 2 sentences)
- _____
- _____
19. Metrics interested in (CO₂, CH₄, O₂, Feed Intake, Visit Behavior, etc):
- _____
20. Email of person in charge of this trial: _____
21. Email of person performing calibrations: _____
22. Email of person performing CO₂ recoveries: _____
23. Email of person cleaning air filter: _____
24. Contact (Email) for emergencies: _____

Pre-Experiment To-Do List

- Please leave feeder(s) turned on for 48 hours (or more) before starting a trial so system sensors can be checked and software updates can be applied.
- Please remember, GreenFeed “warm-up” time is ~30 minutes. The system **must** be powered on for at least 30 minutes before sampling.
- Please manually dispense 10 drops of feed from each hopper. Ensure that each time, feed is dispensed. If knowing the mass of each drop is important for your study, please weigh the total amount of feed dispensed and record it here:

Feeder ID	Date Performed	Total Mass of 10 Drops (grams)

Pre-Experiment QC Checklist (These items can be checked by C-Lock)

- RFID Reader is working
- Sample pump is working
- Fan is working
- Flow rate is sufficient/Flow meter is working
- Feed is dispensing properly
- Proximity sensor is working
- Temperature sensor is working
- Internet Connection is working

Required Maintenance Schedule Performed During Trial

Standard calibration should be performed at least once per week during trials. (If the system is equipped with an auto-calibration system, this can be set up automatically.)

Standard calibration should be performed immediately before each CO₂ recovery.

Perform a CO₂ recovery before your trial

Perform a CO₂ recovery after your trial

Perform a CO₂ recovery at least once per month during your trial

Ensure the feed bin is not empty at least once per week. Also make sure that pressing the feed drop button drops feed.

Clean and swap the primary air filter once per week - or sooner, depending on when your airflow gets too low (below 27L/s for GreenFeed, below 9L/s for GreenFeed for small animals)

Replace the secondary sample filter once per year of operation.