

GreenFeed Pre-Experiment Checklist

This form should only be filled out if Google Form checklists cannot be accessed.

Questions with * must be filled out.

Last Edited March 2025

General Experiment Information

1. * What is the planned date range for this trial? _____ to _____
2. * Unit number of the GreenFeed system(s) that will be used on this trial:

3. * Please indicate the type of the GreenFeed system(s):
**** For tie-stall systems, please wait 2 minutes between animals during sampling; the fan and ventilation systems should be on during the entire sampling day.**
☐ Tie-stall ☐ Free-stall ☐ Trailer ☐ Milking Robot
4. * Are free-stall system(s) anchored to the ground?
☐ Yes ☐ No ☐ System(s) not free-stall
5. * Time of 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.**

6. * (For non tie-stall units) Before starting trial, check Feeding Schedule settings (on web-interface) to ensure schedule allows adequate visit time, i.e. 3-5 minutes per visit.
☐ I acknowledge that length of visits can affect the quality of my data.
7. * If known, what is the date that the calibration gases were first used by the GreenFeed system(s)? If unknown, the same gas concentration(s) will be applied back to the beginning of the trial.

8. * 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):

9. * Perform Leak Check

☐ I acknowledge that I must perform a leak check prior to my trial and that C-Lock will contact me with instructions to do so.

10. * When was the last leak check performed on each unit in this trial?

11. * Were these gases purchased as part of the C-Lock Global Gas Standard?

**** C-Lock cannot guarantee the accuracy of calibration gases that are purchased from another vendor. To purchase global gas standard tanks, please contact us.**

☐ Yes ☐ No

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

13. * If equipped, will the system(s) be using a dual hopper:

**** Dual hopper should be utilized to give animals access to different feeds or supplements. Please contact C-Lock Data team for questions about feeding schedules.**

☐ Yes ☐ No

14. * Internet connections used:

☐ Wi-Fi ☐ Ethernet ☐ Cellular ☐ Other _____

15. * Which systems, if any, will be running on battery power?

16. * Do system(s) located outside have a weather station?

**** Wind can cause minor underestimation of emissions.**

☐ Yes ☐ No ☐ System(s) in contained area

17. * Do you have a grounded extension cord to plug in GreenFeed?

**** GreenFeed requires a grounded extension cord at all times to operate.**

☐ Yes ☐ No

18. * 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 _____

19. * Number of animals on trial: _____

**** Up to 40 animals are allowed per GreenFeed system**

20. If able, please provide the breed of animals on trial:

☐ Beef ☐ Dairy ☐ Other _____

21. If able, please provide the type of animals on trial:

☐ Cow ☐ Bull ☐ Steer

☐ Heifer ☐ Sheep ☐ Other _____

22. If able, please indicate whether any of the animals on trial have horns.

☐ Yes ☐ No

23. If able, please provide the average weight of animals on trial:

24. If able, please indicate whether the animals on trial are cannulated:

**** GreenFeed won't give reliable results with cannulated animals unless your system was purchased with the cannula hardware.**

☐ Yes ☐ No

25. * Animal RFID tag type:

☐ Ear ☐ Collar ☐ Other

26. * GreenFeed system(s) feeding animals with collar tags have a collar antenna.

**** This is a requirement for animals with collar tags.**

☐ Yes ☐ No ☐ Animals do not have collar tags

27. * Are the animals tagged with multiple RFID tags?

☐ Yes ☐ No

28. * Will you be using additional equipment in the same pen/space for this trial that has an RFID reader?

☐ Yes ☐ No

29. * If yes, please explain the type and brand of the equipment, i.e., Vytelle/GrowSafe Feeder

30. * Please provide a short description of trial (1 or 2 sentences).

31. * Metrics interested in:

☐ CO₂ ☐ CH₄ ☐ O₂

☐ H2

☐ Feed Intake

☐ Visit Behavior

☐ Other _____

32. * The following files MUST be emailed to C-Lock Data team along with this checklist:

- a) Photos of all span and zero gas certificates (for auto calibration tanks) or serial numbers (for auto recovery tanks) for each system.
- b) A photo of the feed being used. It must be <7mm diameter.
- c) At least two (2) photos of the alleyway and surroundings of each GreenFeed.
- d) A photo of an animal using each unit.
- e) A photo of free-stall units anchored to the ground.
- f) If animals have multiple tags, please include the cross-reference list.

Contact Information

* Email and name of person in charge of this trial: _____

* Email and name of person performing calibrations: _____

* Email and name of person performing CO2 recoveries: _____

* Email and name of person cleaning air filter: _____

* Contact (Email) for emergencies: _____

Required Maintenance

* 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.

☐ We confirm that this process has been conducted and no issues were encountered.

☐ Other: _____

* Please remember, GreenFeed “warm-up” time is ~30 minutes. The system must be powered on for at least 30 minutes before sampling.

☐ We confirm that we understand the importance of this process.

* 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 enter it here (for each GreenFeed/hopper):

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

* **Standard calibrations** 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.

☐ We confirm that all relevant personnel understand the process and requirements of performing standard gas calibrations.

* 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.

☐ We confirm that all relevant personnel have watched the tutorial video and understand the process of and the requirements for performing CO₂ recovery tests.

Tutorial: <https://www.youtube.com/watch?v=6Tz26jclhr0>

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

- ☐ We confirm that all relevant personnel have watched the tutorial video and understand the process of and the requirements for checking feed bin and feed drops.

Tutorial: <https://www.youtube.com/watch?v=FFQsLA5UMLA>

* 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)

- ☐ We confirm that all relevant personnel have watched tutorial videos and understand the process of and the requirements for maintaining the airflow

Tutorial: <https://www.youtube.com/watch?v=fpRzzlWl5s8>

Tutorial: <https://www.youtube.com/watch?v=vAQ-CKVFJ3k>

* Replace the **secondary sample filter** once per year of operation.

- ☐ We confirm that all relevant personnel have watched the tutorial video and understand the requirements for replacing the secondary sample filter

Tutorial: <https://www.youtube.com/watch?v=mM6Ed8n8PwQ>