



Feeders feed. Animals eat. Scientists get the data.

How CalanIQ captures a feed intake study as it happens, what the barn team has to enter, and what the study team, the feed operations team and the facility get back.

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Figures in this piece use illustrative data generated to show report structure; none of it is from a customer facility.

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About this package

CalanIQ™ (Intake Quantified) is a transformational platform for research studies. It digitizes the feeding workflow and the animal behavior that happens naturally throughout a study. The result is a more efficient research operation that generates more data, and more accurate data, with less work. Feeders feed, animals eat, and scientists have more data to answer more questions.

This package explains how and where CalanIQ collects data, the human input required, and the data then available to each person according to their role in the organization. Nearly every feature was developed with direct input from our customers. CalanIQ will keep evolving as more facilities adopt it, and we welcome your feedback.

About the figures. Every number, chart and table in this piece is illustrative, generated to show how the data is structured; none of it is from a customer facility. The facility, animals and operators named are fictional.

What CalanIQ delivers on any Feed Station

Feed intake per animal per Study Day, Study Feed Report, Feed Intake Trends, Daily Target Logic, Batch Report, recipe versions, load, mix and delivery accuracy, the Event Log and every export. 13 of 21 reports here need no SystemD and no Calan equipment; the tie stall study STU-015 shows it.

What SystemD adds

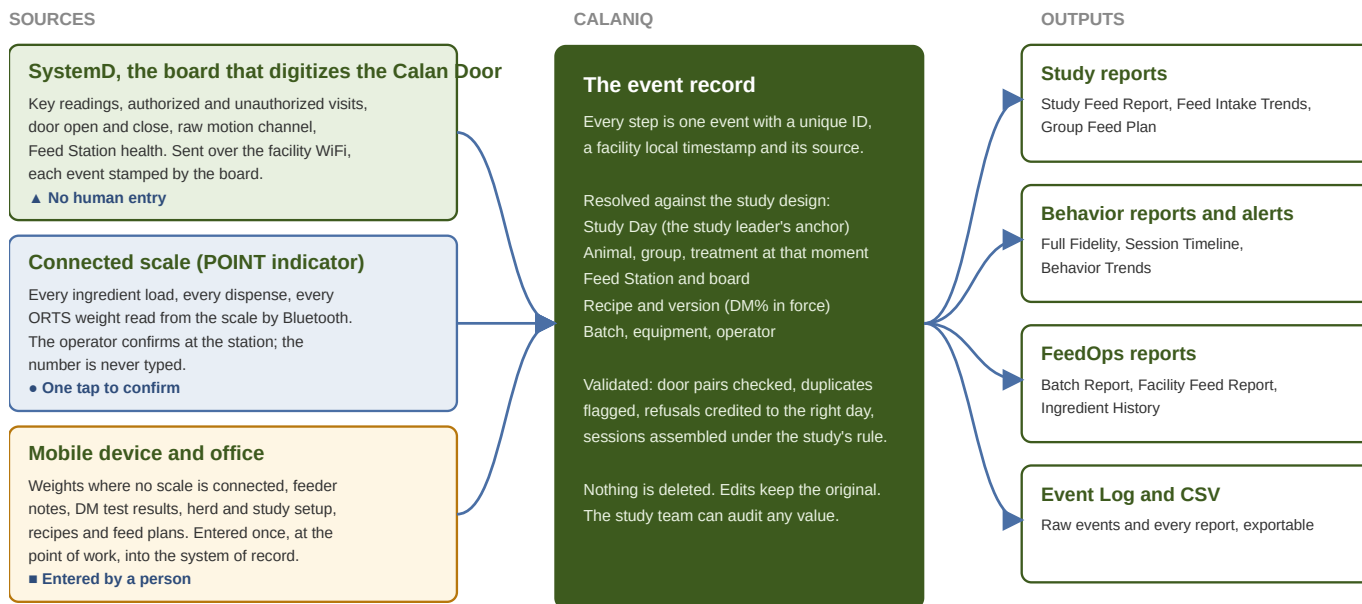
SystemD digitizes the Calan Door. Feeding behavior at each door: Key readings, visits, door events, Feed Sessions, intervals, alerts, and the intake to behavior correlation. Eight reports.

This is the public overview. The full Sample Report Package, with all twenty one reports, is available on request: see the last page.

How CalanIQ captures data

Three sources, one event record, every report.

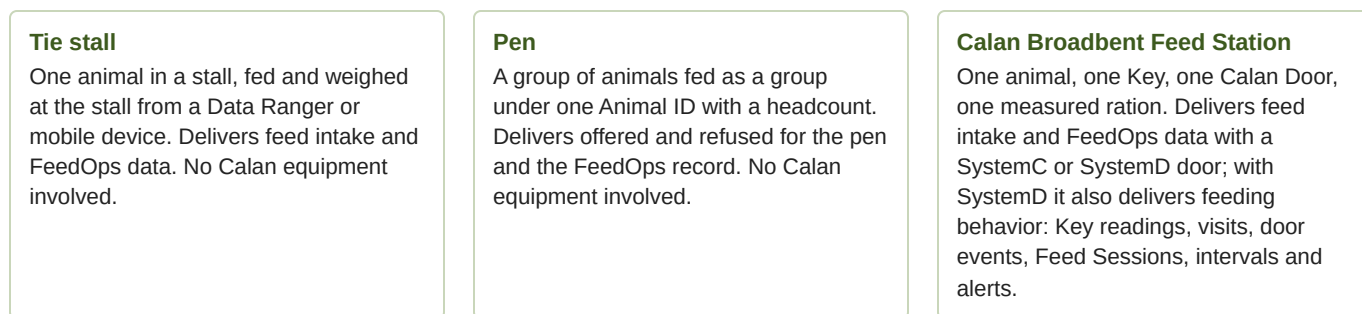
Every weight, every door event and every change to a diet becomes one event in a single record, carrying the study design with it. Three sources feed that record; the reports in this package are different views of it.



▲ No human entry ● One tap to confirm a scale weight ■ Entered by a person, once, at the point of work. Shape and label carry the meaning, not color.

What a Feed Station is

In CalanIQ a Feed Station is any place feed is offered to an identified animal or pen and intake can be recorded. CalanIQ does not depend on Calan equipment to feed, weigh and report; it depends on a Feed Station having an identity. SystemD is the board that digitizes the Calan Door (often called the Calan gate): add it to a Calan Broadbent Feed Station and that station also reports feeding behavior.



A facility can run any mix of these in the same study. Third party stations can also be set up as Feed Stations, with intake derived from that system's output.

Study Day Logic

The study leader sets a Study Day anchor time (08:00 in STU-014) and the feeding schedule around it. Every feeding, refusal and behavior record is resolved to the Study Day whose 24 hour window contains it, in the facility's local time, independent of the calendar date. ORTS collected at 07:00 on August 16 belong to Study Day 41, which began at 08:00 on August 15, and are credited there automatically. Batch records stay on the calendar day, because that is how feeding takes place; analytics carry the Study Day.



Everything inside the window is Study Day 41: the morning feeding, every door event through the night, and the refusal weighed the next morning.

Study Day Logic is what lets a feed intake record be compared across animals, groups and treatments without anyone relabeling dates. It is CalaniQ's central organizing idea and the reason every report in this package reads on a Study Day axis.

Recipe versions

A recipe changes as its ingredients and formulation change, and dry matter changes at the ingredient level on a regular basis as feed dries out or a new load arrives. In CalaniQ the recipe's authoritative value is dry matter per head; as-fed is derived from the current ingredient DM%. Any deliberate change to an ingredient's DM%, to an ingredient, or to the formulation recalls the published feed plans that use the recipe, creates a new recipe version, and the plan is republished on that version. Every batch records the version it was built on.

What a version preserves

The ingredient list, each ingredient's DM% and inclusion, the DM and as-fed per head, mix requirement, who changed it and when, and the Study Day it took effect.

Why it matters

Historical DM never moves after the fact. A diet can be reported as formulated and as delivered for any Study Day in any study, and a change in intake can be read against the version in force that day.

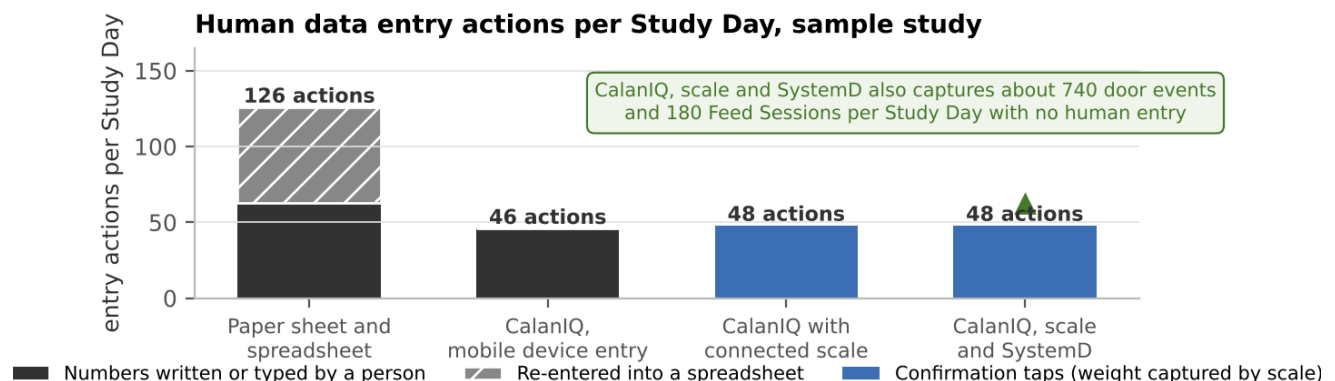
Who logs what

Digitizing the feed operations workflow means more data is generated with less work.

The question a feed operations manager asks first: how much of this do my people have to write down? With a connected scale and SystemD, the barn team confirms weights and the system records everything else. There are no paper records to gather up and consolidate into a spreadsheet afterward; the barn entry is the record.

Data element	Source	Human action	Note
Door visits, opens and closes	SystemD board	▲ None	Automatic, every event, every station, around the clock
Feed Sessions	Derived by CalaniQ from door events	▲ None	Assembled under the study's close rule; raw events retained
Feed Session Intervals	Derived by CalaniQ from Feed Sessions	▲ None	Time between consecutive sessions at the station, per animal per Study Day
Behavior alerts	Derived by CalaniQ	▲ None	Raised when an animal's visits or sessions move outside her own pattern; listed in the app header
Motion intensity	SystemD board	▲ None	Door motion sensed on the board and recorded with every session; available as a research data channel
Feed Station health	SystemD board	▲ None	Periodic status from each SystemD equipped station so a silent station is noticed the same day
Ingredient loads	Connected scale	● Confirm	Weight read from the scale; operator confirms each ingredient
Mix start and completion	Mobile device	● Confirm	Two taps; required mix time compared automatically
Feed delivered per station	Connected scale	● Confirm	Weight read from the scale at the station; one tap
Supplement delivered	Connected scale or tablet	● Confirm	Fixed per animal amount; one tap, or typed where no scale
ORTS per station	Connected scale	● Confirm	Weight read from the scale; credited to the right Study Day automatically
Mixer leftover	Connected scale	● Confirm	Classified Waste by default; tied to the recipe
Daily targets	Daily Target Logic	● Accept or edit	Computed from each animal's actual intake under the study leader's rule; the team accepts or edits, no one calculates and types a target
Weights with no scale connected	Mobile device or office	■ Entered	Typed once at the station or in the office; entry mode recorded
Ingredient DM%	Office	■ Entered	Entered once per test; versions every recipe that uses the ingredient
Herd, enrollment, groups, transfers	StudyOps / FacilityOps	■ Entered	Set up once; every change is its own event in the audit trail
Recipes and feed plans	StudyOps	■ Entered	Formulated once; published, recalled and republished with versions
Feeder notes	Mobile device	■ Entered	Optional free text, attached to the batch and the animal day

Data entry effort for one Study Day of the sample study



How these counts were made. One Study Day of STU-014: 16 animals, one TMR feeding to all 16, one Supplement feeding to each of the 8 Test animals, ORTS at all 16 stations, 6 ingredients, 2 TMR batches. Paper counts each written number (target, feed offered, Supplement and ORTS per animal; load per ingredient; mix time) and its later consolidation into a spreadsheet; Study Day assignment and intake arithmetic are not counted. CalaniQ counts one action per weight captured. Door event and session counts are daily means in the synthetic dataset.

Consolidating data from many sources

Today a study team gathers six kinds of record from four people and builds the study dataset by hand. In CalaniQ those records are written once, at the point of work, into one record.

Source today	Kept by	What is written by hand	In CalaniQ
Daily target sheet	Study team, office	Calculated and written per animal each day	Daily Target Logic computes it; team accepts or edits
Feed sheet	Feeder, barn	Weight read off the scale display and written per station	Connected scale writes it; one tap to confirm
ORTS sheet	Feeder, barn	Refusal weight written per station, next morning	Connected scale writes it; credited to the right Study Day
Ingredient load sheet	Mixer operator	Each ingredient's loaded weight written per batch	Scale writes it against the recipe version
Mixer log	Mixer operator	Mix start, stop and operator written per batch	Two taps; required time compared automatically
DM test sheet	Lab or office	DM% written per test, applied to the ration later by hand	Entered once; versions every recipe that uses the ingredient

6 sources

Paper workflow: target sheet, feed sheet, ORTS sheet, ingredient load sheet, mixer log, DM test sheet. Each kept by a different person, each consolidated into the study spreadsheet by hand.

3,969 numbers

Handwritten values consolidated into a spreadsheet over 63 Study Days (63 per day), each needing its Study Day assigned and its intake arithmetic done afterward.

1 record

CalaniQ: every source writes to the same record as the work happens. Study Day, intake and refusal are computed on entry. Consolidation steps: none.

Full audit

The study team keeps the ability to audit every value: who entered or confirmed it, when, on which device or scale, and any edit with its original. Nothing is overwritten.

What disappears is not the barn work; feeding and weighing still happen. What disappears is the second job: collecting sheets, typing them into a spreadsheet, assigning each line to a Study Day, computing intake, and chasing the number that does not match. The study team spends that time reviewing data instead of building it, and keeps every value traceable to the person, device and moment that produced it.

Basis. Counts use the STU-014 sample study: 63 handwritten numbers per Study Day over 63 Study Days. A larger study or a longer one scales the figure in proportion; a facility running several studies at once multiplies it.

What the study team gets back

Two of the twenty one reports in the full package.

Sample study STU-014: two treatment lactating cow study, 8 cows per group, each in a SystemD equipped Calan Broadbent Feed Station, Study Day anchored at 08:00. Illustrative data.

Study Feed Report

● Requires CalaniQ

■ Native report in CalaniQ

✓ CSV export

StudyOps and Analytics, filters: study, Study Day range, group, animal, AF/DM toggle, batch links on every row

One row per animal per Study Day: Target with its source (manual, auto, edited), Fed per feeding slot, Supplement, ORTS, Intake and % refusal, with a group row carrying n, mean per head and SD. Excerpt below for Study Day 41 in as-fed pounds; the DM column uses the DM% of the recipe version in force. The %Ref and flag columns are how a study team spots an orphan ORTS, a missing refusal or an edited target before it reaches analysis.

SD	Started	Animal	Station	Recipe	TMR target	F1, TMR	Suppl.	Fed	ORTS	Intake AF	Intake DM	% Ref	Flag
41	2026-08-15	4100	SysD_101	v1.1	141.9 auto	141.8		141.8	12.8	129.1	58.5	9.0%	
41	2026-08-15	4102	SysD_103	v1.1	129.0 auto	127.1		127.1	18.9	108.2	49.0	14.9%	
41	2026-08-15	4104	SysD_105	v1.1	133.3 auto	133.7		133.7	21.6	112.2	50.8	16.1%	
41	2026-08-15	4106	SysD_107	v1.1	135.5 auto	135.4		135.4	5.8	129.5	58.7	4.3%	
41	2026-08-15	4108	SysD_109	v1.1	147.8 auto	146.1		146.1	18.7	127.4	57.7	12.8%	
41	2026-08-15	4110	SysD_111	v1.1	159.5 auto	164.3		164.3	24.9	139.4	63.2	15.1%	
41	2026-08-15	4112	SysD_113	v1.1	138.9 auto	138.1		138.1	16.8	121.3	55.0	12.2%	
41	2026-08-15	4114	SysD_115	v1.1	139.4 auto	137.7		137.7	13.8	124.0	56.2	10.0%	
41		Control group	n = 8 of 8		140.7	140.5		140.5	16.7	123.9	56.1	11.8%	SD 4.6
41	2026-08-15	4101	SysD_102	v1.1	136.1 auto	137.0	0.5	137.5	15.4	121.7	55.1	11.2%	
41	2026-08-15	4103	SysD_104	v1.1	116.0 auto	116.3	0.5	116.8	4.4	111.9	50.7	3.7%	
41	2026-08-15	4105	SysD_106	v1.1	152.6 auto	151.2	0.5	151.7	8.6	142.6	64.6	5.7%	
41	2026-08-15	4107	SysD_108	v1.1	140.2 auto	138.1	0.5	138.6	31.1	107.0	48.5	22.5%	
41	2026-08-15	4109	SysD_110	v1.1	135.8 auto	134.8	0.5	135.3	12.6	122.3	55.4	9.3%	
41	2026-08-15	4111	SysD_112	v1.1	133.0 auto	131.6	0.5	132.1	9.8	121.8	55.2	7.4%	
41	2026-08-15	4113	SysD_114	v1.1	164.2 auto	162.4	0.5	162.9	15.4	147.1	66.6	9.5%	
41	2026-08-15	4115	SysD_116	v1.1	143.0 auto	141.7	0.5	142.2	14.2	127.5	57.8	10.0%	
41		Test group	n = 8 of 8		140.1	139.1		139.6	13.9	125.2	56.7	9.9%	SD 6.2

Fed, ORTS, Intake always appear in that order, following the process. Refusal is allocated proportionally as-fed across recipes fed that Study Day; the Supplement is fixed per animal and assumed consumed.

Feeding Behavior, Full Fidelity

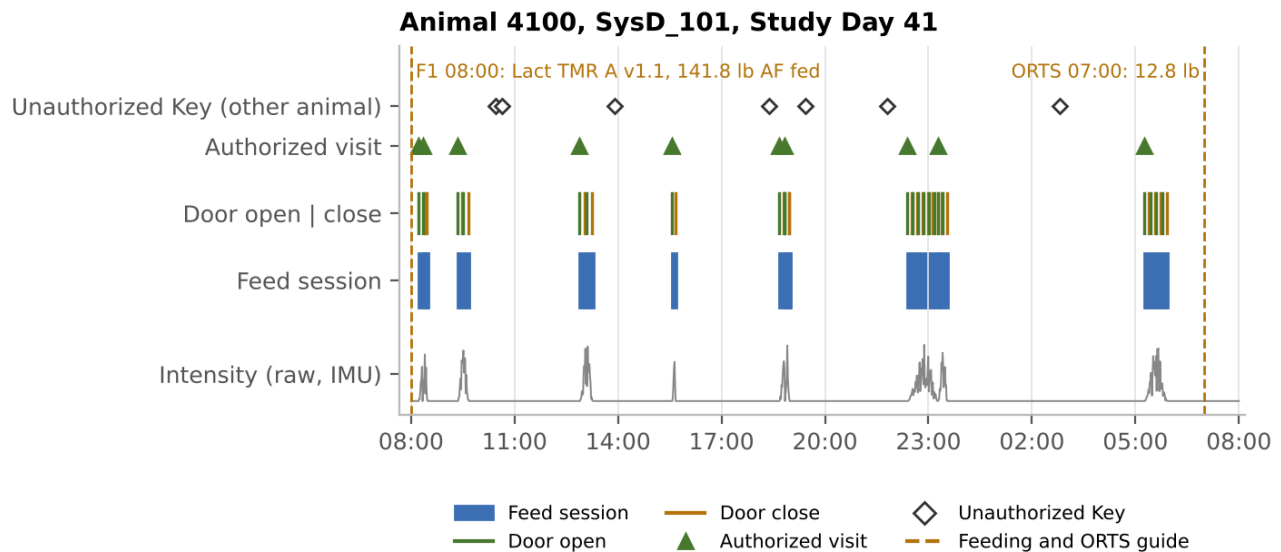
▲ Adds SystemD (IQ_D license)

■ Native report in CalanIQ

✓ CSV export

Analytics, filters: study, group, animal, Study Day range, every event layer toggleable, hover and zoom on the time axis, CSV and PNG export

One row per animal per Study Day, every layer CalanIQ holds for that station: unauthorized Keys from other animals at this door (denied), authorized visits by the assigned animal, each door open and close pair, the Feed Sessions assembled from them under the 5-minute close rule, and the raw IMU intensity channel. The feeding and the ORTS collection are drawn as guides so behavior can be read against the diet actually delivered that day. The motion intensity channel comes from the sensor on the SystemD board and is recorded alongside every door event; it is available as a research data channel as a research data channel.



Row statistics 23 door opens, 10 feed sessions, 224 session minutes, first session 12.9 min after F1, 7 unauthorized Keys at this door, Fed 141.8 lb AF, ORTS 12.8 lb, Intake 129.1 lb AF / 58.5 lb DM

Door events arrive from the SystemD board over the facility's WiFi with their own event IDs and board serial. CalanIQ pairs opens and closes, flags an Orphan Close or a Duplicate, and only then assembles sessions. The raw events remain available in the Event Log export so a research team can apply its own session rule.

Feeding behavior tied to feed intake: one animal, read across reports

▲ Adds SystemD (IQ_D license)

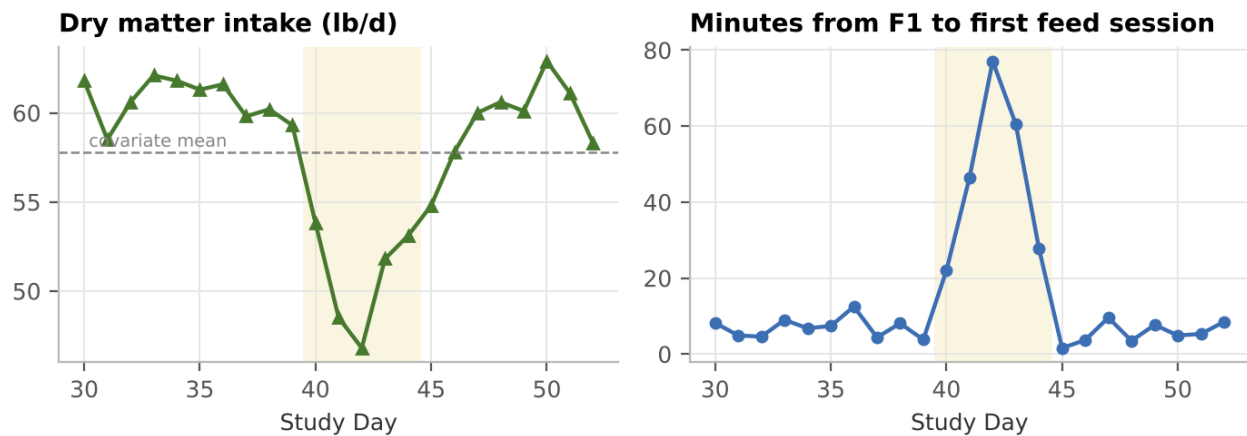
■ Native report

◆ Extended from CSV exports

✓ CSV export

Feed Intake Trends (alert), Feed Session Timeline, Animal Training report and Study Feed Report for animal 4107, exports joined for the panel below

Because intake from the scale and behavior from the door carry the same animal, Feed Station and Study Day, they sit on one axis with no manual matching. Feed Intake Trends raised an alert on animal 4107 on Study Day 41: intake down 10% day over day and 16% against her own 5 day median. The behavior record for the same animal and days shows the pattern around it: time to first session lengthened from Study Day 40, feed sessions dropped, and the Animal Training report shows her visiting other stations more than usual (2 a day rising to 8). Intake recovered by Study Day 45 and so did the behavior. CalanIQ presents these as data on the same axis; the interpretation stays with the research team.



From the Study Feed Report

SD 39: 59.3 lb DM, SD 40: 53.8, SD 41: 48.5, SD 42: 46.8, SD 43: 51.8, SD 44: 53.1, SD 45: 54.8 (covariate mean 57.8). ORTS present every day; targets followed intake down under the auto rule and back up after.

From Feeding Behavior

Time to first session 4 to 77 min at the trough; feed sessions 9 to 3; session minutes 225 to 159; unauthorized visits 2 to 8. Door pairs OK, no orphan closes, so the behavior change is real, not a data gap.

From the Event Log

Animal Records: no group transfer, no station change, no weight event in the window. Equipment: board SysD-S00148 health messages normal. The record rules out the operational explanations first.

Why this matters to a sponsor. A sponsor funding an ingredient study receives intake and behavior on the same per animal per Study Day record, with the recipe version and the batch that delivered each diet. Deviations are explained by the data, not by memory.

Ration history: recipe versions and dry matter changes

● Requires CalanIQ

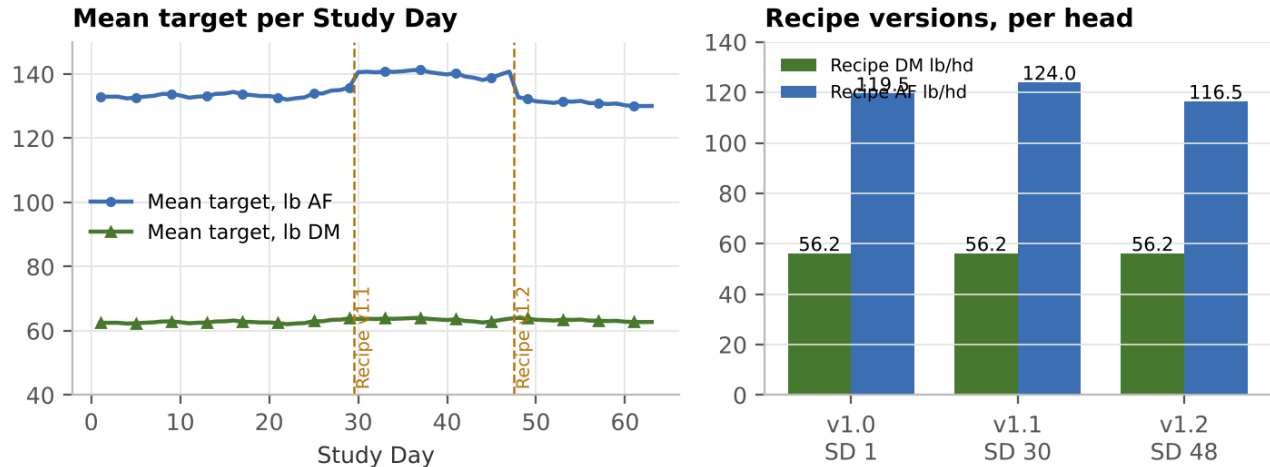
■ Native report

◆ Extended from CSV exports

✓ CSV export

Recipes (TMR Formulation, version history) and Facility Feed Report Ingredient History are native, the Study Day view below joins the Study Feed Report export to recipe versions

Lact TMR A was built once at 56.2 lb DM per head and never reformulated. Corn silage DM moved 35.0 to 33.0 to 36.0% and haylage 42 to 44%, each entered deliberately in the ingredient store; each change recalled the published feed plan, created a version, and the plan was republished. The DM target held; as-fed targets moved from 119.8 to 124.0 to 116.5 lb per head. Every batch records its version, so the diet can be audited as formulated and as delivered for any Study Day.



Ingredient	DM lb/hd (all versions)	v1.0 DM%	v1.1 DM%	v1.2 DM%	v1.0 AF lb/hd	v1.1 AF lb/hd	v1.2 AF lb/hd
Alfalfa haylage	9.0	42.0	42.0	44.0	21.4	21.4	20.4
Corn silage	26.0	35.0	33.0	36.0	74.3	78.8	72.2
Ground corn	10.5	88.0	88.0	88.0	11.9	11.9	11.9
Mineral premix	1.2	96.0	96.0	96.0	1.2	1.2	1.2
Protein blend	4.0	90.0	90.0	90.0	4.4	4.4	4.4
Soybean meal	5.5	89.0	89.0	89.0	6.2	6.2	6.2

CalanIQ executes and records the diet; it does not reformulate it. Recipe and delivery numbers align to the customer's own formulation software for the same inputs. A formulation change is a new recipe; a DM change is a new version of the same recipe.

What the feed operations team gets back

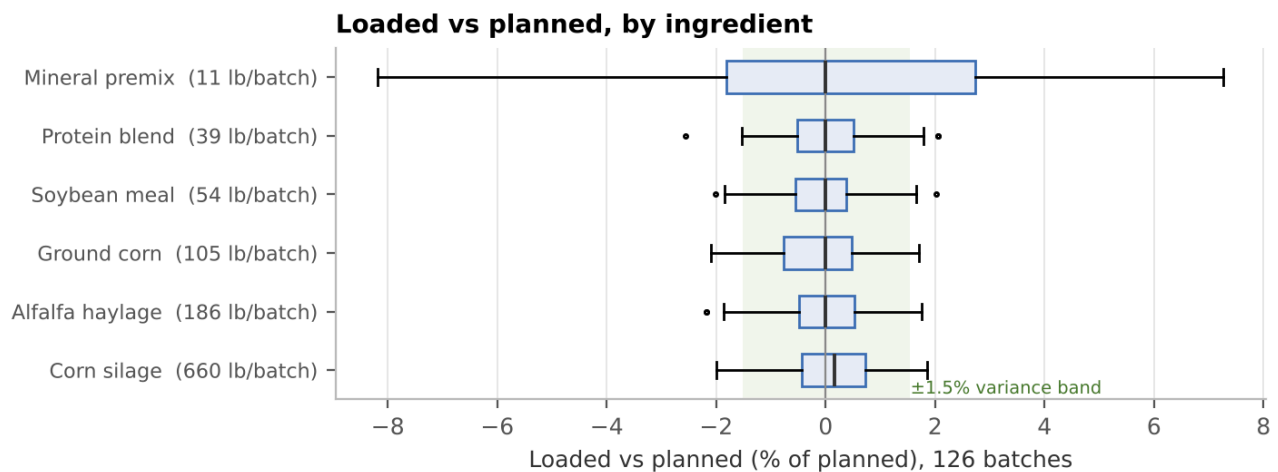
The diet as loaded, as mixed and as delivered, with the equipment and the operator on every record.

Ingredient load accuracy

● Requires CalaniQ
■ Native report
◆ Extended from CSV exports
✓ CSV export

Facility Feed Report, Ingredient History tab (planned vs actual, variance) is native, per batch distribution below from the Batch Report export

Loaded versus planned for every ingredient across all 126 FEED batches. Bulk forages land inside $\pm 1.5\%$; the mineral premix, at 11 lb per batch, shows the widest relative spread, which is the expected place to look when a trace ingredient is the treatment variable. The study team sees the same figures the feed operations manager sees.

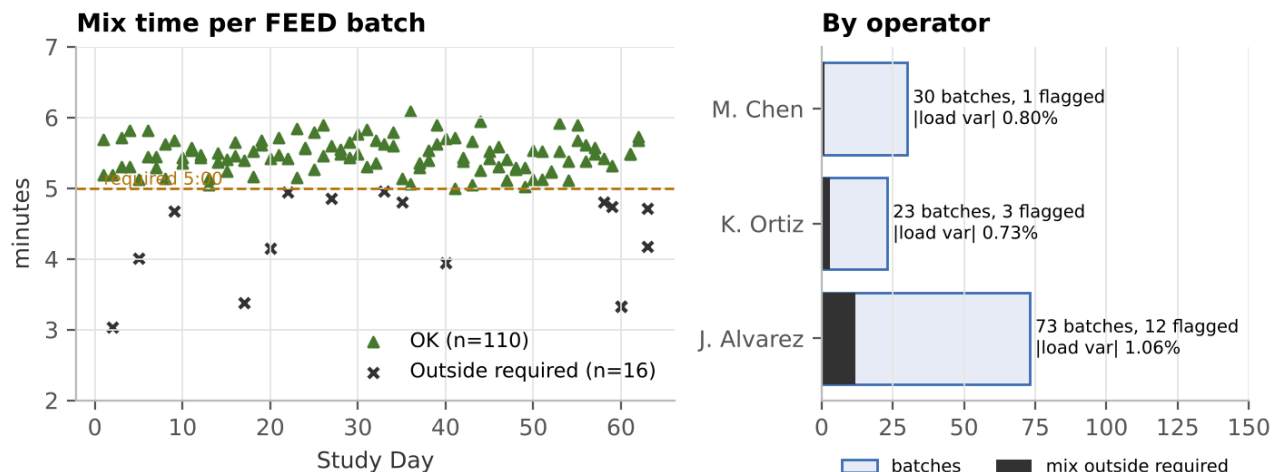


Mix compliance, equipment and operator

● Requires CalaniQ
■ Native report
◆ Extended from CSV exports
✓ CSV export

Batch Report shows required vs actual mix time and the Mix Flag per batch, operator and mixer roll up from the export

Each recipe carries a required mix time; the batch records the actual. Batches mixed short are flagged Outside required and carry the operator and the mixer that ran them. Over a study the roll up by operator and by mixer is a training and maintenance conversation grounded in the record, and for a sponsor it is evidence that the diet was prepared as specified.



What the facility gets back

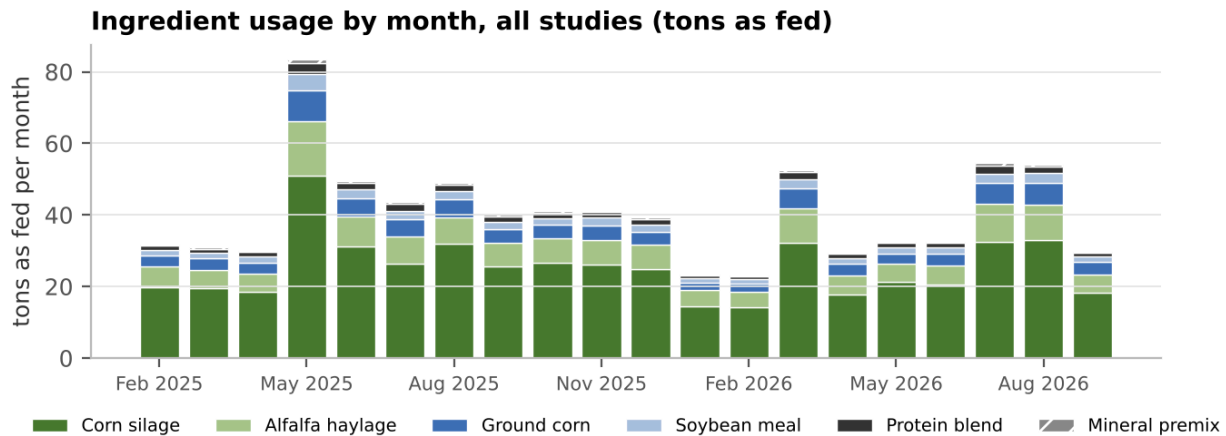
Every study on the same ingredient store, Feed Stations and event record, so the facility's history becomes a dataset of its own.

Ingredient usage across studies

- Requires CalanIQ
- ◆ Built from CalanIQ CSV exports
- ✓ CSV export

Facility Feed Report, Ingredient History tab exported by date range, combined across studies

As-fed tons by ingredient by month across all studies, the facility's feed budget as actually dispensed. Peaks track the number of head on study; the mix shifts with animal class. Within one study the Ingredient History tab shows the same planned, actual and variance figures natively.



Dry matter history

- Requires CalanIQ
- ◆ Built from CalanIQ CSV exports
- ✓ CSV export

Event Log export, Diets category (DM% changed, recipe version created)

Every corn silage DM entry on the facility for 20 months. Each is a Diets event that versioned the recipes using it, so any batch in any study can be traced to the DM% in force when it was built. A facility can see the seasonal pattern in its forage, when it tested, and who entered it.



The full Sample Report Package

Twenty one reports across study data, feeding behavior, intake and behavior together, FeedOps, facility history and data integrity. Each report is marked with what it needs (CalanIQ alone, or CalanIQ with SystemD), how it is produced, and who in the organization uses it, with export standards and a report index.

21

reports, every one exportable to CSV

13

need only CalanIQ, on any Feed Station: tie stall, pen or Calan Broadbent

8

add SystemD feeding behavior from the Calan Door

2

sample studies side by side, one on SystemD stations and one on tie stalls and a pen

For the full Sample Report Package, [click here](#) or send us an email at sales@americancalan.com.

Tell us what you study and what you feed, and we will walk you through the reports that match.

Nearly every feature in CalanIQ was developed with direct input from the research community. CalanIQ will keep evolving as more facilities adopt it, and we welcome your feedback. Data You Can Trust



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