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Lean Management Calf Health Review

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This document has been produced to accompany the Summer 2026 Co-op Business Group Meetings on implementing lean management principles on farm. It offers a framework you could use to could carry out a lean management-based review of the first week of a calf's life on your own farm. It covers the general principles but is may not cover all situations.

Please speak to your own vet before implementing and changes on farm.

Wastes

1. **T** – Transport (unnecessary movement of animals, feed, or materials)

2. **I** – Inventory (too much or poorly managed stock)

3. **M** – Motion (unnecessary movement by people)

4. **W** – Waiting (delays in process)

5. **O** – Overproduction (doing more than needed)

6. **O** – Overprocessing (more work than necessary)

7. **D** – Defects (errors requiring rework or causing loss)

8. **S** – Skills (underutilised people)

Calving (0–2 hrs) – Sub-Processes & Lean Waste

1. Calf Delivery & Immediate Assessment

What happens

- Calving cow observations
- Assistance if needed
- Calf born
- Calf checked

Potential Waste

- **Waiting**: Delay assisting difficult calvings → calf mortality
- **Defects**: Poor calving technique, Poor hygiene → injuries, weak calves, pathogen exposure
- **Skills**: Inexperienced staff not recognising dystocia early

✅ **Key risk**: Weak calf → poor colostrum intake later, increased risk of disease/mortality

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2. Calf Removal from Dam

What happens

- Calf separated (or controlled contact)

Potential Waste

- **Waiting**: Calf left too long in dirty environment
- **Defects**: Disease exposure (e.g. scour pathogens)
- **Motion**: Inefficient handling or long carries

✅ **Key risk**: Pathogen exposure in dirty calving areas

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3. Move to Calf Area / Pen

What happens

- Transfer to clean individual pen

Potential Waste

- **Transport**: Long distance from calving pen to calf shed
- **Motion**: Staff walking inefficient routes
- **Defects**: Dirty equipment or routes → pathogen exposure

✅ **Key risk**: Stress + pathogen exposure

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4. Identification & Recording

What happens

- Tagging, recording dam, date and time of birth

Potential Waste

- **Motion**: Searching for tags, taggers, paperwork
- **Waiting**: Delay due to lack of equipment
- **Defects**: Incorrect records (wrong dam, time, etc.)
- **Skills**: Poor recording discipline, don't know what is required

✅ **Key risk**: Loss of traceability, poor management decisions later

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5. Navel Treatment

What happens

- Dipping or spraying navel with disinfectant

Potential Waste

- **Defects**: Missed or ineffective dipping → infection
- **Overprocessing**: Multiple unnecessary treatments
- **Motion**: Equipment not located near calves

✅ **Key risk**: Navel ill, joint infections

🔴 High-Risk Waste Points (Focus Areas)

Across these sub-processes, the **biggest value leaks** typically are:

1. **Poor hygiene → disease (Defects)**
2. **Inefficient layout (Motion + Transport)**
3. **Inconsistent staff skill (Skills)**

✅ Practical Prompts

Ask your team:

- "What causes delays when a cow needs help?"
- "Where could contamination come from here?"
- "What's the most awkward part of this setup?"
- "Is everything we need here right now?"

✅ **Quick Wins to Highlight**

- Calving + calf area **close together**
- "Calf kit" ready (tags, iodine, feeder)
- Clear **who is responsible** in the first 2 hours
- Simple **SOP for calving area**

Colostrum Management – Sub-Processes & Waste

1. Colostrum Collection (from cow after calving)

What happens

- Milk cow as soon as possible after calving

Potential Waste

- **Waiting**: Delay in milking → reduced IgG quality
- **Defects**: Contamination during collection
- **Skills**: Poor hygiene technique
- **Motion**: Equipment not ready / far from calving area

✅ **Key risk**: Lower colostrum quality + higher bacterial load

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2. Quality Testing (Brix or colostrometer)

What happens

- Check IgG concentration

Potential Waste

- **Waiting**: Test not done immediately
- **Defects**: Feeding poor-quality colostrum unknowingly
- **Skills**: Staff not trained to test or interpret results
- **Overprocessing**: Testing inconsistently or repeating unnecessarily

✅ **Key risk**: Failure of passive transfer

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3. Storage (fresh or frozen)

What happens

- Refrigeration or freezing of excess colostrum

Potential Waste

- **Inventory**: Poor stock rotation → old colostrum used
- **Defects**: Incorrect storage temperature → spoilage
- **Overproduction**: Keeping surplus that is never used
- **Motion**: Freezers/fridges poorly located, poor workflow set up

✅ **Key risk**: Feeding degraded or contaminated colostrum

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4. Thawing / Warming

What happens

- Warm frozen or chilled colostrum to feeding temperature

Potential Waste

- **Waiting**: Slow or unplanned thawing delays feeding
- **Defects**: Overheating → IgG damage
- **Overprocessing**: Reheating multiple times
- **Skills**: Incorrect temperature management

✅ **Key risk**: Lost antibody value

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5. Measuring & Preparation

What happens

- Measure correct volume for calf
- Prepare feeding equipment

Potential Waste

- **Defects**: Incorrect volume or concentration
- **Motion**: Searching for feeders, tubing gear
- **Overprocessing**: Duplicate prep steps
- **Waiting**: Equipment not cleaned/ready

✅ **Key risk**: Underfeeding or inconsistent intake

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6. Feeding (Bottle or Tube)

What happens

- Deliver colostrum to calf within 2 hours

Potential Waste

- **Waiting**: Feeding delayed beyond optimal window
- **Defects**: Poor feeding technique → injury to calf, pathogen exposure
- **Skills**: Incorrect tubing technique
- **Motion**: Inefficient feeding process

✅ **Key risk**: Reduced IgG absorption (time critical)

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7. Cleaning Equipment

What happens

- Wash and sanitise all colostrum equipment

Potential Waste

- **Defects**: Poor cleaning → bacterial contamination
- **Overprocessing**: Excessive or duplicated cleaning
- **Waiting**: Equipment unavailable for next calf
- **Motion**: Inefficient wash setup

✅ **Key risk**: Disease spread (scours)

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8. Recording & Monitoring

What happens

- Record colostrum quality, volume, timing

Potential Waste

- **Defects**: Missing or inaccurate records
- **Motion**: Paperwork not accessible
- **Skills**: Lack of understanding of data use
- **Overprocessing**: Recording data that isn't used

✅ **Key risk**: No feedback loop → repeated mistakes

🔴 Biggest Waste Hotspots (Colostrum)

In most systems, the **critical value leaks** are:

1. **Delay to first feed (Waiting)**
2. **Poor hygiene (Defects)**
3. **Low-quality colostrum not identified (Defects + Skills)**
4. **Poor storage management (Inventory)**
5. **Inconsistent staff practice (Skills)**

✅ Practical Prompts

Ask your team:

- “Where do we lose time before the calf gets fed?”
- “Where could bacteria get in?”
- “How do we know colostrum is good enough?”
- “What slows us down most?”
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💡 Quick Wins to Highlight

- Pre-prepared **colostrum bank (tested + labelled)**
- **Standard feeding kit** always ready
- Clear rule: **first feed within 2 hours, no exceptions**
- Simple SOP: quality, volume, timing

Calf Housing – Sub-Processes & Potential Waste

1. Pen Preparation

What happens

- Clean out previous bedding
- Clean and disinfect
- Add fresh bedding

Potential Waste

- **Defects**: Poor cleaning → pathogen carryover
- **Overprocessing**: Excessive or inconsistent cleaning routines
- **Waiting**: Pens not ready when calves arrive
- **Motion**: Bedding or disinfectant stored far away

✅ **Key risk**: Scours, pneumonia from contaminated environment

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2. Bedding Management

What happens

- Apply and maintain dry, deep bedding

Potential Waste

- **Inventory**: Overuse or underuse of bedding
- **Defects**: Wet bedding → disease
- **Motion**: Repeated trips for bedding
- **Skills**: Poor understanding of "dry enough" standard

✅ **Key risk**: Cold stress + pathogen exposure

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3. Ventilation Setup

What happens

- Ensure airflow without draughts

Potential Waste

- **Defects**: Poor ventilation → pneumonia
- **Skills**: Lack of understanding of airflow
- **Overprocessing**: Constant adjustment without clear system

✅ **Key risk**: Respiratory disease

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4. Calf Placement in Pen

What happens

- Move calf into individual or group housing

Potential Waste

- **Transport**: Long distances from calving area
- **Motion**: Inefficient handling routes
- **Defects**: Mixing animals of different ages
- **Waiting**: Delays placing calves

✅ **Key risk**: Stress + disease spread

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5. Grouping Strategy (if applicable)

What happens

- Decide individual vs group housing and group sizes

Potential Waste

- **Inventory**: Overstocking (too many calves per airspace)
- **Defects**: Disease pressure from poor grouping
- **Overprocessing**: Unnecessary regrouping

✅ **Key risk**: Rapid disease transmission

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9. Observation & Health Checks

What happens

- Check calves for signs of illness (daily)

Potential Waste

- **Skills**: Signs missed due to lack of training
- **Waiting**: Delayed treatment
- **Defects**: Poor detection → worsened disease
- **Overprocessing**: Recording data not used

✅ **Key risk**: Higher treatment cost, mortality

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10. Environmental Monitoring

What happens

- Check temperature, humidity, draughts

Potential Waste

- **Skills**: Not understanding thresholds
- **Waiting**: No action taken when issues identified
- **Overprocessing**: Measuring but not acting

✅ **Key risk**: Chronic stress, poor growth

🔴 Key Waste Hotspots in Housing

Most farms typically lose value in:

1. **Wet/dirty bedding (Defects)**
2. **Poor ventilation (Defects + Skills)**
3. **Overstocking (Inventory)**
4. **Inefficient layout (Motion + Transport)**
5. **Missed early sickness (Skills + Waiting)**

✅ Practical Prompts

Ask your team:

- "Which pens would you NOT want a new calf born put into today?"
- "Where do calves get cold?"
- "Where do we waste time walking?"
- "When do we normally notice a sick calf — early or late?"

💡 Quick Wins to Highlight

- Clear **"gold standard pen"** example
- Bedding rule: **kneel test (dry knees = good)**
- Fix airflow rather than just adding more bedding
- Group calves by **age and size consistently**
- Make water + feed **easy to access and clean**

Calf Feeding (Day 1–7) – Sub-Processes & Waste

1. Feed Planning & Scheduling

What happens

- Decide feeding times, frequency, and volumes

Potential Waste

- **Waiting**: Late or inconsistent feeding times
- **Overprocessing**: Overly complex feeding plans
- **Skills**: Lack of clarity → inconsistent staff routines

✅ **Key risk**: Poor intake consistency → digestive upset

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2. Milk / Milk Replacer Preparation

What happens

- Mix milk replacer or transport whole milk

Potential Waste

- **Defects**: Incorrect mixing (concentration, temperature)
- **Overproduction**: Mixing more than needed → wastage
- **Motion**: Walking long distances with milk
- **Waiting**: Equipment not ready or slow prep

✅ **Key risk**: Scours, inconsistent growth

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3. Transporting Milk to Calves

What happens

- Carry or move milk to calf pens

Potential Waste

- **Transport**: Long distances between dairy and calves
- **Motion**: Inefficient routes, multiple trips

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6. Water Provision

What happens

- Provide clean, fresh water daily

Potential Waste

- **Motion**: Buckets located poorly → inefficiency
- **Defects**: Dirty water/buckets → reduced intake, pathogen exposure
- **Overprocessing**: Re-cleaning due to poor setup
  ✅ **Key risk**: Reduced intake, slower rumen development

7. Starter Feed Introduction, Forage Provision

What happens

- Provide concentrate and forage other than bedding from early days

Potential Waste

- **Inventory**: Feed going stale or wasted
- **Defects**: Poor-quality or contaminated feed
- **Waiting**: Late introduction
- **Overproduction**: Too much feed offered → waste

✅ **Key risk**: Slower rumen development

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8. Daily Cleaning & Hygiene

What happens

- Clean feeders, buckets, pen areas

Potential Waste

- **Defects**: Poor hygiene → disease
- **Overprocessing**: Cleaning more than necessary
- **Waiting**: Equipment unavailable
- **Motion**: Poor layout of wash area

✅ **Key risk**: Scours outbreaks

🔴 **Key Waste Hotspots in Calf Feeding** Most farms typically lose value in:

1. Dirty Equipment (Defects – biggest health risk)
2. Incorrect Milk Mixing (Defects)
3. Delay to Feeding (Waiting)
4. Poor Layout (Motion + Transport)
5. Inconsistent Feeding Routine (Skills)
6. Poor Intake Monitoring (Skills + Defects)

✅ **Practical Prompts**

Ask your team:

- "Are all staff feeding the same way every day?"
- "Where do mistakes happen when mixing?"
- "What slows you down most when feeding calves?"
- "Where could contamination happen in this process?"