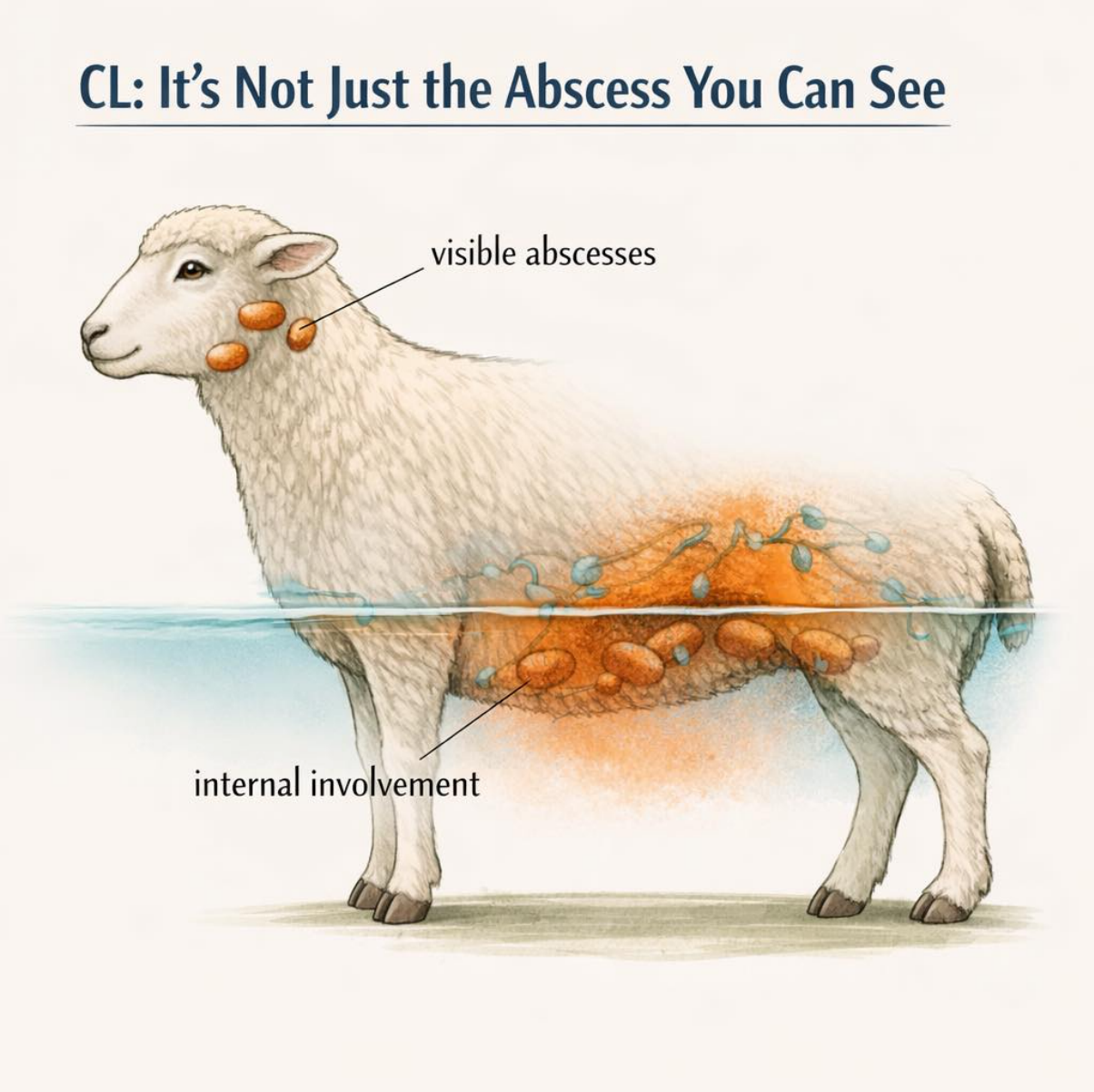
2026

Caseous Lymphadenitis (CL) in Sheep and Goats

A PRACTICLE GUIDE TO UNDERSTANDING



CL in Sheep & Goats — Article 1

What This Disease Actually Is

If you spend enough time raising sheep or goats, you will eventually hear two letters spoken quietly and often with a great deal of concern.

CL.

Caseous lymphadenitis is one of those diseases that carries more confusion than clarity.

People know it involves abscesses.

People know it can spread.

But very few people have ever been taught what it actually is —

Or, more importantly, how it behaves inside the animal.

Before we talk about testing, vaccines, or what to do about it…

We need to start with a more important question:

What kind of disease are we dealing with?

Not a Fast Disease — A Persistent One

Caseous lymphadenitis is caused by a bacterium called

Corynebacterium pseudotuberculosis.

Unlike many of the diseases producers are used to dealing with, this is not a fast-moving, overwhelming infection.

It typically doesn't knock animals down within hours or days.

Instead, CL behaves more like something that moves in… and stays.

A better way to think about it is this:

This is not a lightning strike disease.

This is a long-term resident.

A Disease of the Lymphatic System

CL primarily targets the lymphatic system —

The part of the body responsible for filtering fluid and monitoring for infection.

If we simplify this down:

Think of lymph nodes as security checkpoints scattered throughout the body.

Fluid passes through them.

Cells are inspected.

Threats are identified and dealt with.

Most infections pass through this system and are cleared.

CL does something different.

It doesn't just pass through the checkpoint.

It sets up inside it.

Containment Instead of Elimination

Once this bacterium establishes itself in a lymph node, the body responds the way it often does with difficult infections:

It builds a wall around it.

It isolates it.

This creates what we recognize externally as an abscess.

But that abscess isn't random.

It is a containment structure.

A better way to picture it:

The body is not winning the fight.

But it is preventing the spread.

Inside that structure:

• bacteria remain alive

• immune cells remain active

• and the two exist in a kind of controlled standoff

Over time, this produces the thick, layered material many producers describe as "onion-like."

Two Forms — What You See and What You Don't

CL shows up in two very different ways:

External CL

• Visible abscesses in lymph nodes

• What most people recognize

Internal (Visceral) CL

• Infection inside the body

• No visible abscesses

• Gradual weight loss, poor performance

This second form is often the more important one from a production standpoint — and also the easiest to miss.

As I attempted to show in the article image, it's like an iceberg. The single abscess you can see might just be the tip of the iceberg itself.

Why This Disease Gets Misunderstood

CL creates a unique situation for producers:

• Animals can look completely normal

• The infection can persist for long periods

• And the most visible sign (abscesses) is only part of the story

Because of this, people tend to oversimplify it into one of two extremes:

• “It’s no big deal”

or

• “It’s catastrophic”

In reality, it is neither of those things.

It is a management disease —

and understanding how it behaves is what determines the outcome.

Where We Go Next

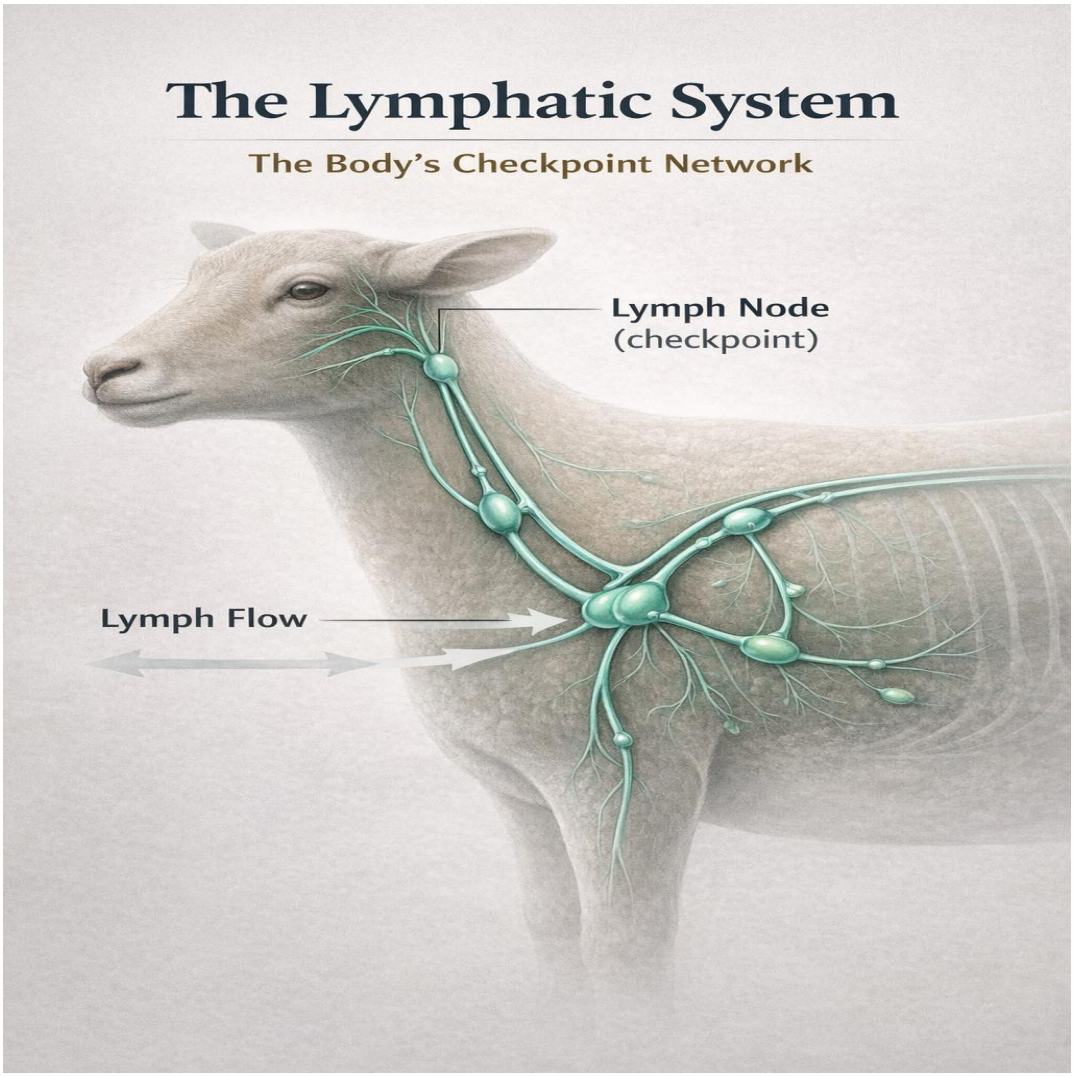
Now that we’ve defined what CL is,

the next step is to understand the system it lives in.

Because once you understand how the lymphatic system works normally,

you’ll start to see why this disease behaves the way it does —

and why it can be so difficult to fully eliminate.



CL in Sheep & Goats — Article 2

How the Lymphatic System Actually Works

Before we can understand how a disease like CL behaves, we need to understand the system it lives in.

That system is the lymphatic system.

Most people have heard of lymph nodes.

Very few people have ever been taught what they actually do.

A Second Circulatory System (That Most People Don't Think About)

When people think about circulation, they think about blood.

Arteries.

Veins.

The heart.

But running alongside that system is another network that is just as important — and much quieter.

The lymphatic system.

Instead of moving blood, this system moves lymph fluid — a clear fluid that contains:

• proteins

• waste products

• immune cells

• and anything that has leaked out of tissues

This fluid doesn't get pumped by the heart.

It moves slowly through a network of vessels, eventually passing through lymph nodes before returning back to circulation.

The Checkpoint System

If you simplify the lymphatic system down to its most important function, it works like this:

It is a series of checkpoints.

As lymph fluid moves through the body, it is routed through lymph nodes.

At each node:

• material is filtered

• immune cells evaluate what's present

• and threats are identified and dealt with

Most of the time, this system works extremely well.

Bacteria, debris, and foreign material are caught and eliminated before they cause a larger problem.

Flow Matters More Than Location

One of the most important concepts — and one that most people never think about — is this:

The lymphatic system follows "flow paths".

Fluid drains from specific areas of the body into specific lymph nodes.

For example:

• the head and jaw drain into one group of nodes

• the front limbs and chest into another

• the abdomen into another

This is why diseases like CL tend to show up in predictable locations.

Not because the bacteria prefer those spots — but because that's where the fluid ends up.

When the System Works Normally

Under normal conditions:

1. Something enters the body (bacteria, debris, etc.)
2. It is picked up in lymph fluid
3. It is carried to a lymph node
4. The immune system recognizes it
5. It is neutralized and cleared

The process is quiet, efficient, and usually invisible.

Most of the time, you never know it happened.

When the System Can't Fully Clear a Threat

But not every organism is easy to eliminate.

Some bacteria are:

• harder to kill

• better at surviving inside tissues

• or capable of avoiding complete destruction

When that happens, the system shifts strategies.

Instead of eliminating the threat completely…

it contains it.

Containment Is Not the Same as Cure

When the body can't fully eliminate something, it often isolates it.

It walls it off.

It keeps it in one place.

From the outside, this looks like control — and in many ways, it is.

But biologically, something important has changed:

The organism is still there.

Alive.

Contained.

But not gone.

Why This Matters for CL

CL takes advantage of this exact behavior.

Instead of being cleared as it passes through a lymph node…

it establishes itself inside the checkpoint.

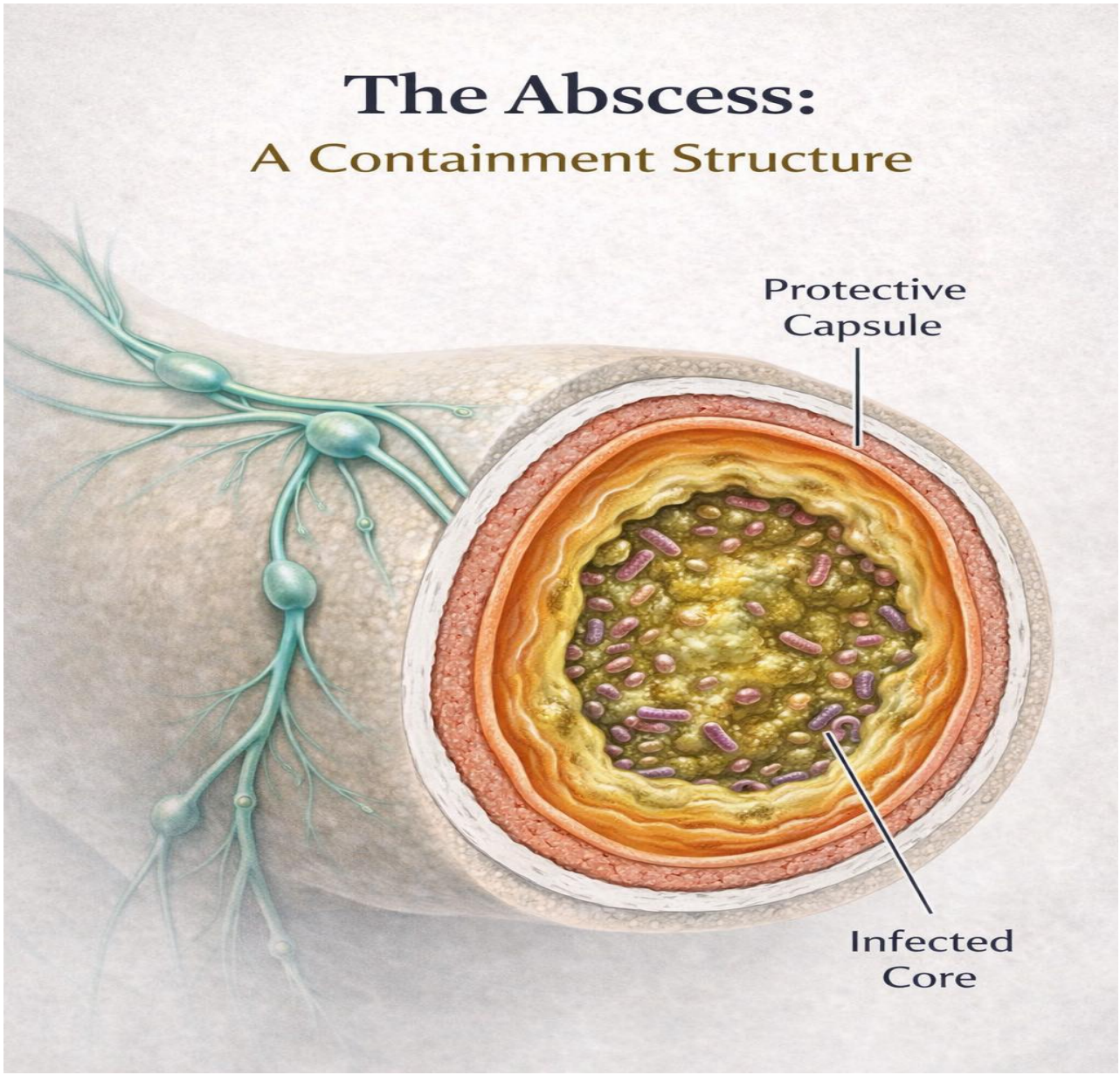
From that point forward, everything about the disease begins to make more sense:

- why abscesses form
- why they persist
- why they can come back
- and why they are so difficult to fully eliminate

Where We Go Next

Now that we understand how the lymphatic system normally functions, the next step is to look at what happens when a bacterium like CL:

moves into the system… and doesn't leave.



CL in Sheep & Goats — Article 3

What an Abscess Actually Is (and Why It Forms)

Most people think of an abscess as a problem.

A lump.

An infection.

Something that needs to be drained or treated.

But if you step back and look at it biologically, an abscess is something very different.

It is not just a sign of disease.

It is a response to it.

When the Checkpoint Can’t Clear the Threat

In Article 2, we talked about how the lymphatic system works like a series of checkpoints.

Material flows through lymph nodes.

It gets inspected.

And most of the time, it gets cleared.

But not every organism is easy to eliminate.

Some bacteria — including the one that causes CL — are particularly good at surviving inside tissues.

So when that organism arrives at a lymph node, the system faces a problem:

It can’t fully destroy it.

At that point, the strategy changes.

From Elimination… to Containment

When the body can’t eliminate a threat, it shifts to something else:

It contains it.

Instead of clearing the bacteria, the body begins to isolate it.

It builds a barrier around it.

It separates it from surrounding tissue.

It limits its ability to spread.

This is the beginning of an abscess.

The Abscess as a Containment Structure

From the outside, an abscess looks like a lump.

But on the inside, it is a structured environment:

- a central area containing bacteria and inflammatory material
- surrounded by layers of immune response
- enclosed within a firm capsule

Over time, this creates the thick, layered material often described as “onion-like.”

That structure isn’t accidental.

It is the body’s way of saying:

“I can’t remove this… but I can keep it here.”

A Controlled Standoff

Inside an abscess, something very specific is happening:

• the bacteria are still alive

• the immune system is still active

• and neither side fully wins

It becomes a kind of controlled standoff.

From the outside, it may look stable.

But biologically, the infection is still present.

Why Abscesses Persist

Because the organism is not eliminated:

• the abscess can remain for long periods

• it may slowly change over time

• it can recur or reform

• and under certain conditions, it can rupture

This is why CL is not a “one-time event.”

It is a persistent condition built around containment rather than cure.

Why This Matters

If you think of an abscess as just “infection,”

you’ll miss what’s actually happening.

But if you think of it as:

a containment structure built by the body

then a lot of things start to make sense:

• why draining it doesn’t eliminate the disease

• why it can come back

• why internal disease can exist without visible signs

• and why this condition is so difficult to fully clear

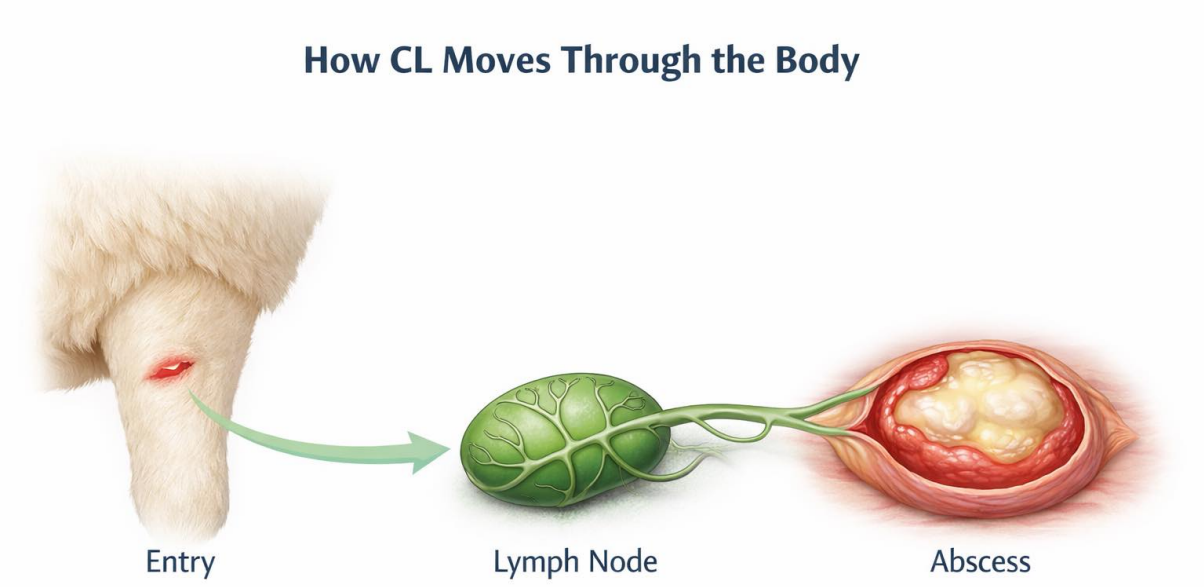
Where We Go Next

Now that we understand what an abscess actually is, the next step is to look at how this process begins:

How does the bacteria get into the system in the first place?

Because once we understand entry and movement,

we can start to understand how CL spreads through a flock.



CL in Sheep & Goats — Article 4

How Infection Happens (From Entry to Abscess)

Now that we understand how the lymphatic system works — and what an abscess actually is — we can put the pieces together.

Because CL doesn't appear randomly.

It follows a path.

It Starts With an Entry Point

For CL to occur, the bacterium has to get into the body.

That almost always happens through:

• small cuts or abrasions in the skin

• shearing nicks

• fence or handling injuries

• thorn or environmental trauma

Most of the time, these are minor and go unnoticed.

But they create an opening.

And that's all the organism needs.

From the Skin… to the System

Once the bacteria enter through the skin, they don't just stay at the surface.

They are picked up in tissue fluid and move into the lymphatic system.

From there:

they follow the same flow paths we talked about in Article 2.

They are carried toward the nearest lymph node.

Not randomly —

but predictably.

Because lymphatic flow follows specific pathways, the location of an abscess often reflects the region where exposure occurred — something we'll come back to when we talk about how this disease spreads through a flock.

Arrival at the Checkpoint

When the bacteria reach a lymph node, the system responds the way it normally does:

• it recognizes something foreign

• it activates an immune response

• it attempts to eliminate the threat

For many organisms, this is the end of the story.

They are cleared.

CL is different.

When Elimination Fails

Instead of being destroyed, the bacteria persist.

They survive inside the lymph node.

At that point, the system shifts strategies.

It moves from elimination… to containment.

Abscess Formation

The body begins to wall off the infection.

It builds layers.

It isolates the bacteria.

It limits spread.

This is where the abscess forms.

And at this point:

• the bacteria are still alive

• the immune system is still active

• and the infection is now contained rather than cleared

What Happens Next

From here, several things can occur:

1. Stable Containment

• the abscess remains localized

• the animal appears normal

• the infection persists quietly

2. Enlargement or Maturation

• the abscess grows

• pressure increases

• it becomes more visible

3. Rupture and Environmental Contamination

• the abscess breaks open

• infectious material is released

• the environment becomes contaminated

This is one of the primary ways CL spreads through a flock.

4. Internal Involvement

• bacteria may spread to other lymph nodes

• internal organs can become involved

• no external signs may be visible

This is the part of the disease people often miss.

Why This Process Matters

When you understand this sequence:

entry → flow → node → containment → possible spread

a lot of things stop being confusing.

You can start to see:

• why abscesses appear where they do

• why new cases show up after exposure

• why the disease can persist in a flock

• and why control requires more than treating a single animal

This Is Not a Random Disease

CL is not unpredictable.

It follows a system.

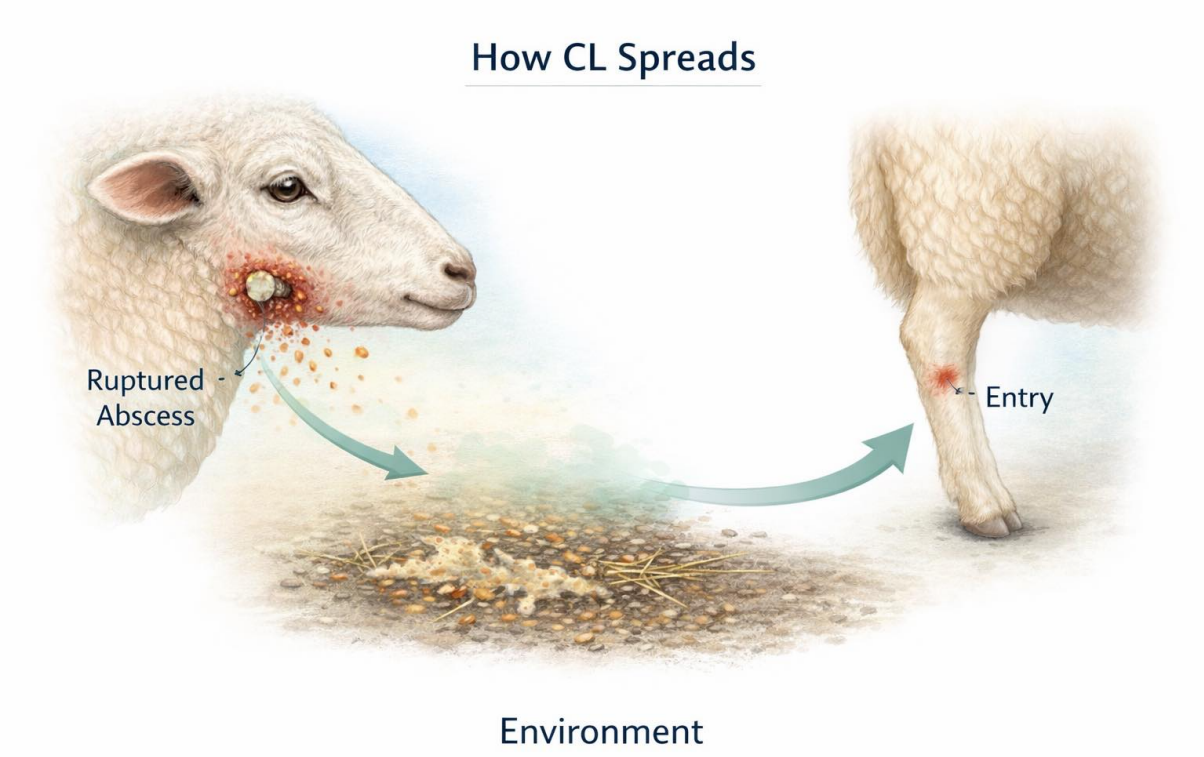
And once you understand that system,

you can begin to anticipate how it will behave.

Where We Go Next

Now that we've walked through how infection happens, the next step is to look at how this disease moves beyond the individual animal:

How does CL spread through a flock and survive in the environment?



CL in Sheep & Goats — Article 5

How CL Spreads (And What Actually Matters)

By this point, we've walked through:

- what CL is
- how the lymphatic system works
- what an abscess actually is
- and how infection develops

Now we can answer the question most people are really asking:

How does this disease actually spread?

The Rule That Explains Almost Everything

At its core, CL transmission comes down to two things:

infectious material + a way into the body

If either one of those is missing, transmission doesn't occur.

That's the framework everything else fits into.

The Primary Source: Abscess Material

The most important driver of CL spread is:

abscess contents

When an abscess ruptures:

• it releases large numbers of bacteria

• those bacteria contaminate the environment

• and they can persist outside the animal

This is where transmission begins.

How It Enters Another Animal

Once the environment is contaminated, the next step is entry.

This typically happens through:

• small cuts or abrasions in the skin

• shearing nicks

• fencing or equipment injuries

• minor trauma that often goes unnoticed

This is why CL is closely tied to:

• handling

• shearing

• housing conditions

• stocking density

Location Matters (And Why You See What You See)

Because the organism follows lymphatic flow:

The location of an abscess often reflects where exposure occurred.

For example:

• jawline → head, mouth, or facial exposure

• shoulder → front limb or chest exposure

• flank → body wall or environmental contact

This isn't exact — but it gives useful clues.

Multiple Nodes — What It Actually Means

When more than one lymph node is involved, it doesn't necessarily mean one node "failed."

More often, it reflects:

• repeated exposure over time

• multiple entry points

• or spread within the lymphatic system

In other words:

It's usually a pattern, not a single event.

Environmental Survival

CL bacteria can survive outside the animal, especially when protected in organic material like:

• pus

• bedding

• soil

• wood surfaces

Under favorable conditions, the organism can persist for:

weeks to months

This is one of the reasons CL can remain in an environment even after the original source is gone.

Can It Be Killed?

Yes — the organism is not indestructible.

It can be inactivated by:

• drying and sunlight

• proper cleaning and removal of organic material

• common disinfectants when used correctly

But there's an important limitation:

Disinfectants don't work well in the presence of organic material.

If contaminated material is still present, the bacteria are protected.

What About Milk, Air, and Water?

These are common concerns.

CL is not primarily spread through:

• milk

• airborne transmission

• or casual exposure through shared water

Even when internal disease is present:

transmission still depends on contaminated material reaching a break in the skin.

What About Equipment and Handling?

This is one of the most important real-world factors.

Equipment — especially things like shears — can:

• carry contaminated material

• create small skin breaks

• and introduce infection to the next animal

A simple way to think about it:

It's not the blood — it's what's on the blades.

Putting It All Together

When you step back, the pattern becomes clear:

CL spreads through contaminated material entering through damaged tissue.

Not randomly.

Not through casual contact.

Not through a single unexpected pathway.

Why This Matters

Once you understand how CL actually spreads, you can focus on what matters:

• managing abscesses

• reducing environmental contamination

• minimizing skin trauma

• controlling exposure points

Instead of worrying about everything,

you can focus on the things that actually drive disease.

Where We Go Next

Now that we understand how CL spreads, the next step is to look at one of the most misunderstood parts of this disease:

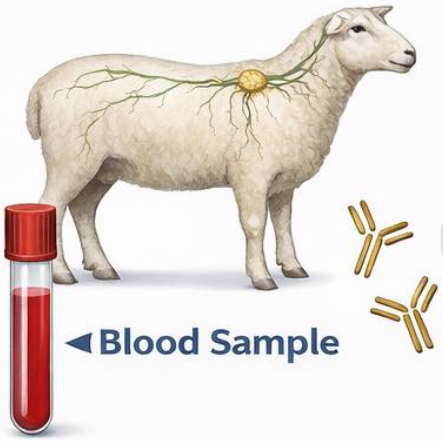
What testing can — and cannot — tell you

CL TESTING

ANSWERS TWO DIFFERENT QUESTIONS

Different questions → different answers

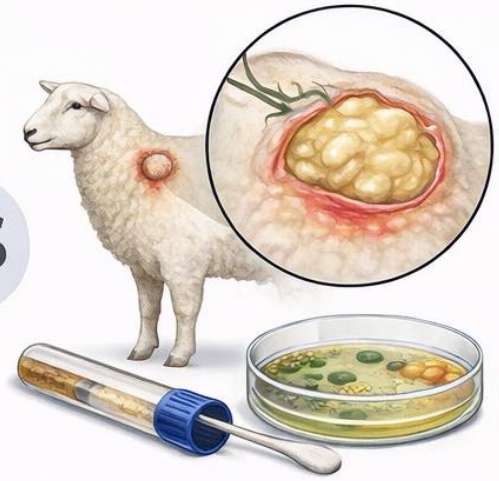
BLOOD TESTING



Has this animal mounted an immune response?

VS

ABSCESS TESTING



Is the organism present here?

CL in Sheep & Goats— Article 6

Testing: What It Can — and Cannot — Tell You

By this point, we've built a model:

• how CL enters the body

• how it moves through the lymphatic system

• how abscesses form

• and how the disease spreads

Now we come to one of the most misunderstood parts of this disease:

Testing

Why Testing Feels Confusing

Most people expect testing to work like this:

positive = has disease

negative = does not have disease

That works for some conditions.

CL is not one of them.

What We're Actually Testing For

When we test for CL, we are usually not detecting the bacteria directly.

Instead:

we are detecting the animal's immune response to the organism

That means:

• exposure

• immune recognition

• antibody production

—not necessarily active, visible disease

Two Different Types of "Testing"

Before going further, it's important to separate two things that often get lumped together.

When most people talk about testing for CL, they are referring to:

blood testing (serology)

This looks for the animal's immune response to the organism.

But there is another type of testing:

direct testing of abscess material

This involves collecting material from an abscess and identifying the organism itself.

Why This Distinction Matters

These two approaches answer very different questions:

• Blood testing asks:

Has this animal mounted an immune response?

• Abscess testing asks:

Is the organism actually present in this lesion?

Which One Are We Talking About Here?

In this article, when we talk about testing, we are referring primarily to:

blood testing (serology)

Because that's where most of the confusion and most of the real-world decision-making occurs.

What a Positive Test Means

A positive result generally tells you:

the animal has mounted an immune response to the organism at some point

It does not automatically mean:

• the animal has an active abscess

• the animal is currently shedding

• the animal will show clinical disease

What a Negative Test Means

A negative result tells you:

no detectable immune response at the time of testing

It does not guarantee:

• the animal has never been exposed

• the animal is not infected

• the animal will not develop disease later

Why False Negatives Occur

There are several reasons an infected animal may test negative:

• early infection before antibody response develops

• low or variable immune response

• contained infection with limited immune stimulation

This is especially important in:

animals that appear normal but are in early or internal stages

Why Positive Results Can Be Misleading

Positive results can occur for several reasons, including:

• prior exposure without active disease

• vaccination

• cross-reactivity in some cases

Vaccination is especially important to understand.

Animals that have been vaccinated for CL will often test positive on blood tests.

That's because the test is detecting:

the immune response — not the presence of the organism itself

So in a vaccinated animal:

• a positive test may reflect vaccination

• not natural infection

This is one of the reasons testing and vaccination have to be considered together — not separately.

Testing and the Abscess Problem

This is where everything connects back to the earlier articles.

Remember:

CL lives inside a contained structure (the abscess)

That means:

• the bacteria are not freely circulating

• exposure to the immune system may be inconsistent

• antibody levels may vary

This directly affects how reliable testing appears

Why Testing Alone Is Not Enough

Because of these limitations:

testing cannot be used in isolation to make decisions

It has to be interpreted alongside:

• physical exam

• history

• herd status

• observed abscesses

The Real Role of Testing

Testing is not a yes/no answer.

It is:

a piece of a larger decision-making system

Used correctly, it can:

• help identify exposure patterns

• support herd-level decisions

• guide management strategies

Used incorrectly, it can:

• create false confidence

• lead to unnecessary culling

• or miss infected animals entirely

Why This Frustrates People

Testing feels unreliable because:

people expect certainty where the biology doesn't allow it

CL is a disease of:

• containment

• variable immune response

• and intermittent visibility

Testing reflects that complexity.

Putting It All Together

When you understand how CL behaves, testing makes more sense:

• it detects response, not necessarily disease

• it varies based on timing and immune activity

• and it must be interpreted in context

Where We Go Next

Now that we understand the limits of testing, the next step is to address one of the most debated parts of CL management:

vaccination — what it does, what it doesn't do, and where it fits

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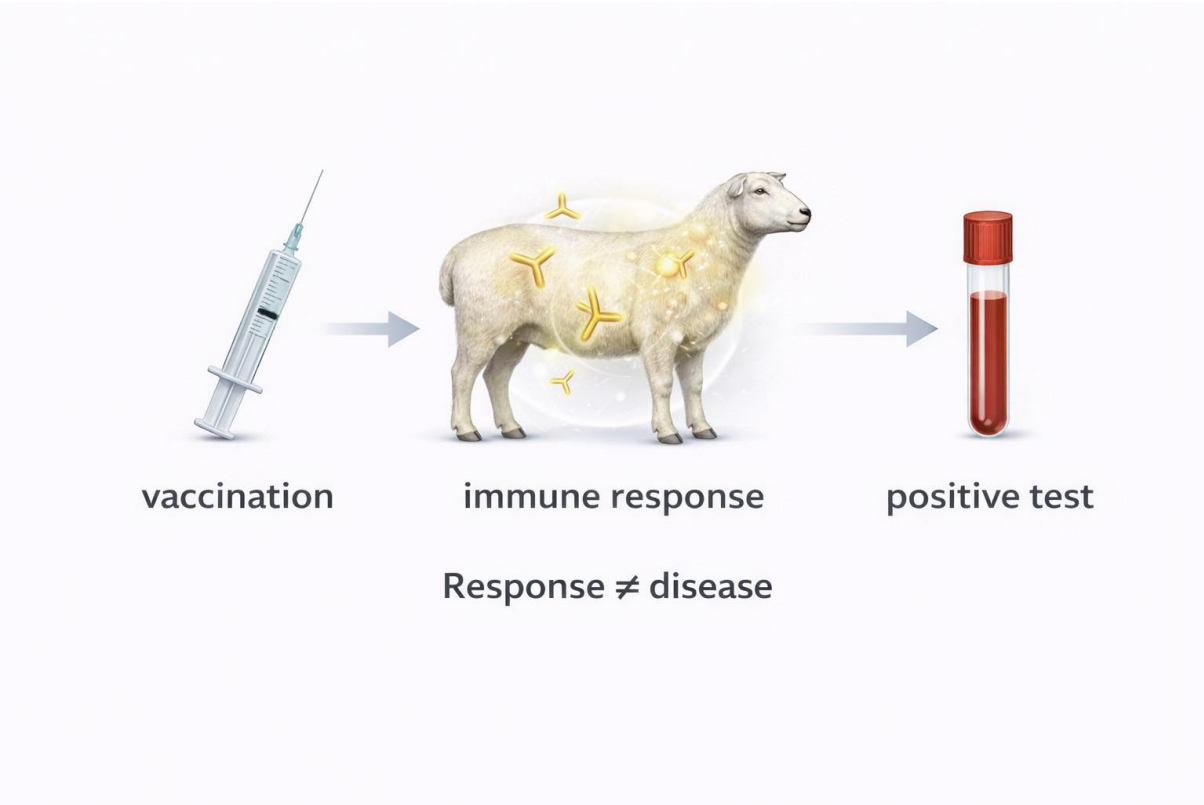


CL in Sheep & Goats — Article 7

Vaccination: What It Does — and What It Doesn't Do

By this point, we've built a working model:

- how CL (Caseous Lymphadenitis) enters the body
- how it moves through the lymphatic system
- how abscesses form
- how it spreads
- and what testing actually tells us

Now we can look at one of the most debated parts of CL management:

Vaccination

Start With the Right Expectation

Before anything else, we need to reset expectations.

Vaccination is not:

- a cure
- a way to eliminate CL from a flock

• or a guarantee that animals won't develop disease

What it is:

a tool that changes how the disease behaves in a population

What the Vaccine Actually Does

CL vaccines are typically:

killed or toxoid-based products

They do not introduce a live infection.

Instead, they:

• expose the immune system to the organism (or its toxins)

• stimulate antibody production

• prepare the animal to respond more quickly if exposed

What That Means in the Real World

Vaccination can:

• reduce the severity of disease

• reduce the size or number of abscesses

• reduce environmental contamination over time

But it does not:

• completely prevent infection

• completely stop transmission

• remove the organism from a flock

Why Vaccination Creates Confusion

This connects directly to the previous article.

When you vaccinate an animal:

you are intentionally creating an immune response

And when you test:

you are detecting that immune response

So:

vaccinated animals will often test positive

Not because they are infected,

but because their immune system recognizes the organism.

Testing and Vaccination Have to Be Considered Together

Once vaccination is introduced:

• test results become harder to interpret

• distinguishing exposure vs vaccination becomes difficult

• herd-level decision-making becomes more complex

This is why:

testing and vaccination cannot be managed independently

When Vaccination Makes Sense

Vaccination tends to make the most sense in:

• flocks where CL is already present

• situations where eradication is not practical

• operations focused on reducing impact rather than eliminating disease

In these cases:

the goal shifts from elimination → management

When Vaccination Becomes More Complicated

Vaccination may be less desirable in:

• CL-negative flocks trying to remain closed

• breeding operations where testing is critical

• programs focused on strict disease elimination

Because:

it can interfere with your ability to interpret test results clearly

The Tradeoff

This is the heart of the decision.

Vaccination gives you:

• improved disease control

• reduced severity

But it costs you:

• clarity in testing

• simplicity in interpretation

There Is No Universal Right Answer

And this is where people get frustrated.

They want:

a single recommendation that applies to everyone

But CL doesn't work that way.

The "right" decision depends on:

• your herd status

• your goals

• your tolerance for risk

• and your management system

Putting It All Together

Vaccination is not good or bad.

It is:

a tool with specific effects and specific tradeoffs

Used in the right context, it can be very helpful.

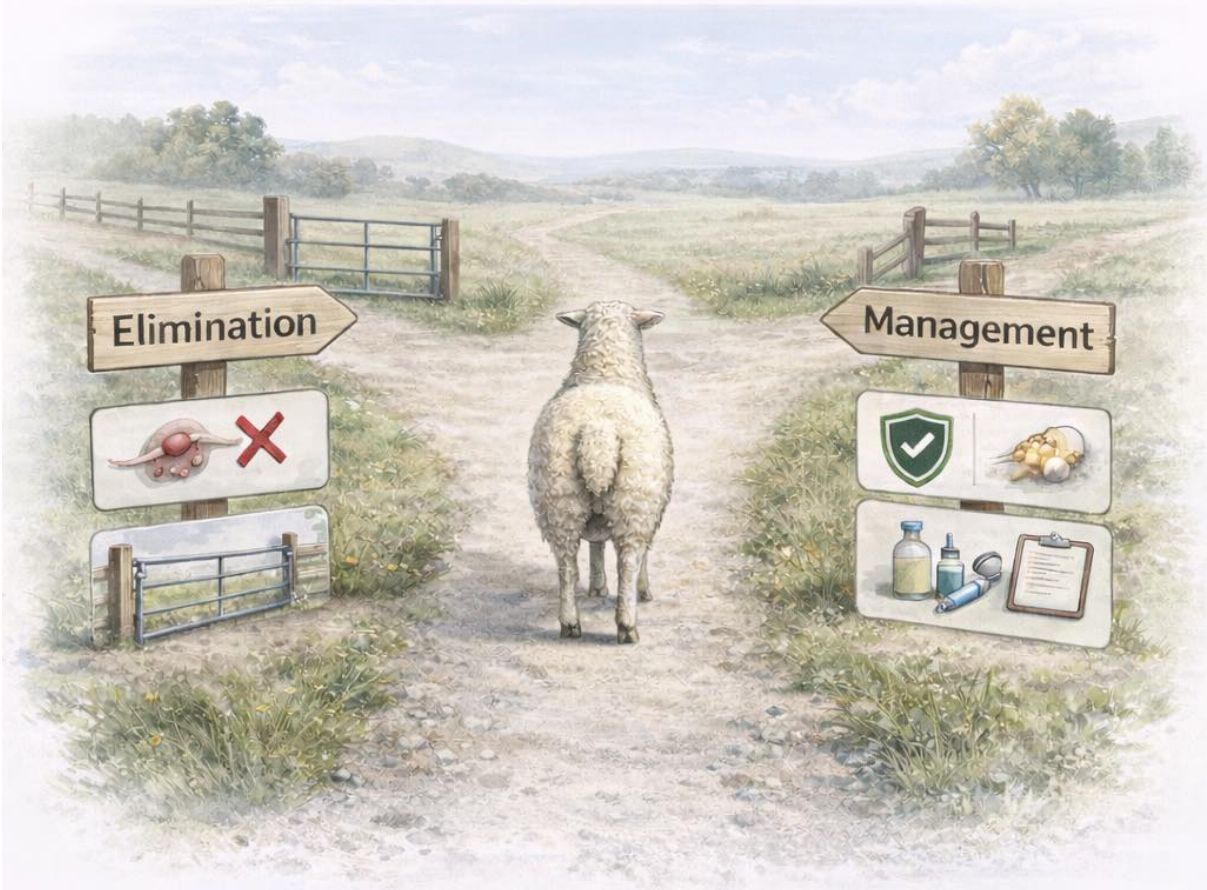
Used without understanding, it can create confusion.

Where We Go Next

Now that we've covered vaccination, the next step is to bring everything together:

How to actually manage CL in the real world

CL MANAGEMENT: TWO PATHS



Choose a strategy – apply it consistently

Different goals → different decisions

CL in Sheep & Goats — Article 8

Real-World Management: What Do You Actually Do?

At this point, we've built the full picture:

• what CL is

• how it moves through the body

• how abscesses form

• how it spreads

• what testing tells us

• and how vaccination fits into the system

Now we get to the question everyone eventually asks:

What do I actually do if CL shows up in my flock?

Start With the Right Mindset

Before we talk about specific actions, we need to be clear about something:

There is no single correct answer for every flock.

CL management is not one-size-fits-all.

It depends on:

• your goals

• your resources

• your tolerance for risk

• and your current herd status

Two Different Paths

Almost every management decision falls into one of two approaches:

1. Elimination (CL-Free Goal)

2. Management (Live With It and Control It)

Neither is "right" or "wrong."

But they lead to very different decisions.

Path 1 — Elimination

This approach is focused on:

keeping the flock CL-free or removing it entirely

This typically involves:

• strict culling of affected animals

• aggressive screening of new additions

• closed herd or tightly controlled biosecurity

• careful use (or avoidance) of vaccination

• strict hygiene and equipment management

This path works best when:

• CL is not yet established

• flock size is manageable

• replacement animals are controlled

Reality Check

Elimination can be:

• expensive

• time-consuming

• emotionally difficult

But it offers:

clarity and long-term disease control

Path 2 — Management

This approach accepts:

CL is present, and the goal is to reduce impact and spread

This typically involves:

• isolating affected animals when possible

• managing and containing abscesses

• reducing environmental contamination

• minimizing skin trauma (shearing, handling, facilities)

• strategic use of vaccination

This path works best when:

• CL is already widespread

• culling is not practical

• herd continuity is a priority

Reality Check

Management requires:

• consistency

• attention to detail

• acceptance that the disease is not eliminated

But it can:

maintain a functional, productive flock

The Most Important Concept

Regardless of which path you choose:

you are managing exposure and entry

Everything comes back to:

• controlling contaminated material

• reducing environmental load

• and limiting access into the animal

Where People Get Into Trouble

Problems usually come from mixing strategies:

• trying to eliminate while keeping infected animals

• vaccinating without understanding testing implications

• relying on testing alone without physical evaluation

• underestimating environmental contamination

This leads to:

confusion, frustration, and inconsistent results

Practical Decisions (Day-to-Day)

When CL is present, the most impactful actions are often simple:

• identify and monitor abscesses early

• prevent rupture in shared environments

• clean and manage contaminated areas

• reduce unnecessary skin injury

• control equipment hygiene

These are not complicated.

But they are:

highly effective when done consistently

There Is No Perfect System

Even well-managed flocks can:

• have new cases

• have unexpected outcomes

• have periods of increased pressure

That doesn't mean the system is failing.

It means:

you're working within biology, not against it

Putting It All Together

CL management is not about finding a single solution.

It's about:

choosing a strategy and applying it consistently

• Eliminate if your system allows it

• Manage if that's the more realistic path

Both can work.

But neither works well without understanding the system behind it.

Final Thought

Good livestock management isn't about always having the right answer —

it's about learning how to think when the answer isn't obvious yet.

As always, thank you to all those who helped to put this series together.

This article is for educational purposes only and is not a substitute for veterinary or medical advice.