



Countdown Downunder Mastitis Investigation Pack

Read Technote 13 pages 5-15 for a guide to using these sheets
and tips for efficient data collection

AI-7

INVESTIGATION MASTER SHEET

BI-5

Farm Profile

H

Clinical Cases

C

Milk Cultures

I

Teat Condition

D

Individual Cow Cell Counts

J

**Cow Behaviour
Milking Time per Cow**

E

Milking Machine Dry Test

K

**Completeness of Milking
Cluster Alignment**

F

**Performance Tests of Milking
Machines**

L

Teat Disinfectant

G

Milking Routines, Teat Cup Slips

M

The Environment

Client.....



Presenting problem Date.....

.....
.....
.....

Re-defined problem

.....
.....
.....
.....
.....
.....

Agreed key factors to resolve the problem
(Use **A7** to identify and allocate priorities)

1.
.....
2.
.....
3.
.....
4.
.....
.....

Advisory team

Name

Company.....

Phone.....

Fax

Email.....

Name

Company.....

Phone.....

Fax

Email.....

Name

Company.....

Phone.....

Fax

Email.....

Client.....



Does the farm operation match the Farm Guidelines?

How important is this to the problem?

B. Farm Profile

	TN	Yes	Unsure	No	Comments
The policy used to check introduced (purchased or borrowed) cows for mastitis meets the guidelines	21				
The culling policy for clinical and persistently infected cows meets the guidelines	15				
Management at drying-off and the Dry Cow Treatment strategy meet the guidelines	14				
Udder condition at calving (no excessive swelling or dripping) meets the guidelines	1,2				
Permanent and detailed records are kept on cows with clinical mastitis	4				
BMCCs have been below warning levels for the past 18 months	11				
Other					

- 4 - High and urgent
- 3 - High but not urgent
- 2 - Low
- 1 - Different problem

C. Milk Cultures

	TN	Yes	Unsure	No	Comments
Milk samples were collected from cows representative of the problem being investigated	4				
There are sufficient milk culture results to assess the herd problem	13				
Bacteria have been identified that could account for the herd problem	1, 5				
Other					

D. Individual Cow Cell Count Analysis

	TN	Yes	Unsure	No	Comments
The new infection rate in heifers is acceptable (less than 1% additional heifers infected per month)	12				
Other					



Does the farm operation match the Farm Guidelines?

How important is this to the problem?

E. Milking Machine Dry Test

- 4 - High and urgent
- 3 - High but not urgent
- 2 - Low
- 1 - Different problem

	TN	Yes	Unsure	No	Comments
The last test was recent enough to provide valid information on the current problem	25				
The capacity of the milking line (size and slope) meets the current guidelines	25				
The vacuum and airflows meet the current guidelines (working vacuum, effective reserve, regulation efficiency)	25 AMMTA specs				
Pulsators operate within the current guidelines	25 AMMTA specs				
Liners, claw tubes and other rubberware are in good condition	6				
Other					

F. Performance Tests of Milking Machines

	TN	Yes	Unsure	No	Comments
Compatible cluster components have been selected (liners fit shells and claw nipples, liners seem OK for average teat size, cluster air admission is OK)	25				
Vacuum levels and differences meet standards and guidelines	25				
Mean claw vacuum meets the guidelines	25				
Vacuum stability in milking line and receiver meets the guidelines	25				
Other					



Does the farm operation match the Farm Guidelines?

How important is this to the problem?

G. Milking Routines

4 - High and urgent
3 - High but not urgent
2 - Low
1 - Different problem

	TN	Yes	Unsure	No	Comments
Cups go on clean, dry teats	5				
Cows have let-down by the time the cups go on	5				
Hygiene in the shed (wearing of gloves, stripping methods etc) will reduce the number of bacteria at the teat ends	5, 8				
The technique used by all staff to remove cups is appropriate	5				
Teat disinfectant adequately covers all teat surfaces	7				
The frequency of teat cup slips is within the guidelines	6				
Other					

H. Clinical cases

	TN	Yes	Unsure	No	Comments
The protocol for detecting clinical cases is appropriate	4, 10				
All staff use the same protocol for detecting clinical cases	4, 10				
The protocol for treating clinical cases is appropriate	4, 10				
The way clinical cases are milked (hygiene, milking order etc) will minimise spread to other cows in the herd	4, 8				
Other					



Does the farm operation match the Farm Guidelines?

How important is this to the problem?

- 4 - High and urgent
- 3 - High but not urgent
- 2 - Low
- 1 - Different problem

I. Teat Condition

Short-term changes in teat condition (colour, swelling, firmness, openness) are within normal limits

Longer-term changes in teat skin condition and teat end hyperkeratosis are within normal limits

Other

TN	Yes	Unsure	No	Comments
9				
9				

J. Cow Behaviour; Milking Time per Cow

Cow discomfort is minimal (less than 10% of cows with KiSt response) at each of the four stages of milking

The average milk flow time of the herd meets the current guidelines for their production level

Average over-milking time is acceptable (minimal : less than 1 minute, moderate : 1-2 minutes, excessive: 3 or more minutes)

Delayed let-down in the herd is minimal (less than 10% of cows)

Other

TN	Yes	Unsure	No	Comments
5, 6				
6				
5, 6				
5				

K. Completeness of Milking; Cluster Alignment

Less than 20% of quarters contain strip yields of 100mL or more

Clusters hang squarely on udders

Other

TN	Yes	Unsure	No	Comments
6				
6				



Does the farm operation match the Farm Guidelines?

How important is this to the problem?

L. Teat Disinfectant Preparation

4 - High and urgent
 3 - High but not urgent
 2 - Low
 1 - Different problem

	TN	Yes	Unsure	No	Comments
The product is registered by NRA	7				
Mixing rates, water sources and storage containers meet the guidelines	7				
Iodine and water test results are within acceptable ranges	7				
Other					

M. The Environment

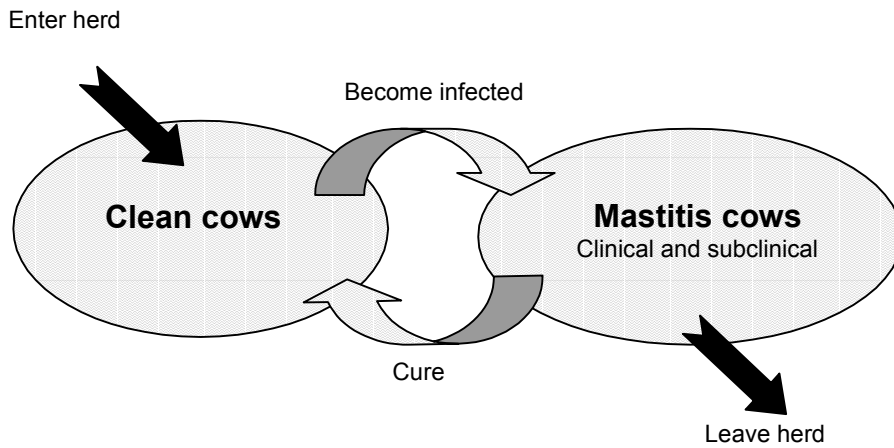
	TN	Yes	Unsure	No	Comments
Cows calve in a clean and dry environment	1				
Udders remain clean and dry in the first hour after milking	27				
Other					

Herd Mastitis Dynamics Chart

Technote 13 page 7

Major pathogen(s):

Key control points:



Other key issues:



Available information - organise access to existing reports

Factory supplied

QA program

The farm's regular vet.....

The farm's regular tech

Other consultants.....

BMCC No Yes ⇒ tick when copy received

- For This season From Factory
 Last season Milk statements
 Farm computer

ICCC No Yes ⇒ tick when copy received

- Available electronically? From herd test centre
 From farm computer

Herd test organisation.....

Date of last herd test.....

No. tests per year.....

Milk cultures No Yes ⇒ tick when copy received

- Number of samples
- Collected when
- Collected by

AMMTA tests No Yes ⇒ tick when copy received

- Date of last machine test.....
- Tested by (tech and co.).....
-

Clinical case records No Yes ⇒ tick when copy received

- Are they Stored permanently
 Kept temporarily
- How far back do they go?

Client details

Contact person.....

Phone.....

Role on farm

Postal address

.....

Clients description of the problem

.....

.....

About the farm

Herd size

Herd manager.....

Number of milking staff.....

Shed

- Herringbone - swing-over
 Herringbone - double-up
 Rotary
 Other

Plant

- Mixed brands
 Single brand
Brand

No. units.....

Calving pattern

- Year round
- Split Starts (mth)..... No. cows
- Starts (mth)..... No. cows
- Seasonal Starts (mth).....

Date.....

Client.....



Your problem

Discuss the problem - get down to what is the primary concern and when it occurs

.....

.....

.....

.....

People

Do you employ milking staff? No Yes

How many?

How many operators are in the shed at each milking?

Is the herd ever milked three times a day? No Yes

Cows

	How many first calvers in the herd? (Approximately)	How many mature cows in the herd? (Approximately)	Total
This year			
Last year			

Have any cows in your milking herd been introduced from external sources in the last 3 years? No Yes

If yes, please describe:

Date	Source	No. maiden heifers	No. cows	Total

Have you milked cows belonging to other herds in your dairy in the last 3 years? No Yes

If yes, when.....

Define the problem - tick appropriate boxes (one or more)

- BMCC At calving
- During lactation
- Clinical cases At calving
- During lactation
- Other
- High ICCC cows
- Teat condition
- Other (eg thermodorics)

Note any features about staffing issues and milking routine consistency that may impact on mastitis

Is the age structure or replacement rate of the herd likely to impact on the level of mastitis in the herd and the management options?

What is the risk of introducing mastitis bacteria with cows from other herds?

What purchasing protocol are used to safeguard against mastitis?

Date

Client



Shed and equipment

Have there been any recent changes to the shed? No Yes

If yes, what.....

What type of liners are in the shells?.....

When were they last changed?.....

When are they due for changing next?.....

Udders at calving

How many heifers or cows had udder oedema (flag) at last calving?.....

How many heifers or cows had tight udders that dripped milk?.....

Clinical cases

- Do the clinical case records show:
- Cow ID
 - Date
 - Quarter treated
 - Product used
 - Result / outcome

Are the calving dates recorded and available? No Yes

How many clinical cases have you had this season / year?.....

How many cases were in heifers?.....

How many cases occurred within 14 days of calving?.....

How many cases required a second course of treatment?.....

Culling for mastitis

Do you ever cull clinical cases of mastitis? No Yes

If yes, how do you decide which ones go?.....
.....

Do you use ICCC to decide which cows to cull? No Yes

If yes, how?.....
.....

Check for any obvious leads relating to the shed plant and equipment that should be followed up

Estimate how many cow-milkings the liners will do:

$$= \frac{\text{Herd size} \times \text{No. milkings/day} \times \text{No. days}}{\text{No. milking units}}$$

Tight swollen dripping udders at calving may be at risk of new infection. Consider when choosing the dry cow strategy

Use all the information in the clinical case section to assess the adequacy of the treatment protocol

A high number of cases in heifers is indicative of new infection

Calculation of rates from farm data:

At calving cases / 100 cows

During lactation cases / 100 cows

Compare the clinical case rate with the warning levels in Farm Guideline 13

Compare with the culling recommendations in Farm Guideline 15. Warning bells should ring if someone is culling high ICCC cows to control BMCC.

Date.....

Client.....



Drying-off management

On average, how many litres were cows producing at the time of drying-off?

Did you take any steps to control the level of production? No Yes

If yes, what approach was used?

- Change in milking frequency
- Change in diet.....
- Change in routine.....
- Other

Did you use Dry Cow Treatment at the end of last lactation? No Yes

If yes, which cows were treated?

- All the milking herd (blanket)
- Selected cows
 - ICCC
 - Clinical cases
 - Other

What product(s) were used:.....

.....
.....

How many cows were dried off in each batch?.....

What was the maximum number of cows dried off in any batch?.....

How many people were involved in doing the DCT at each batch?.....

How were the teats sterilised?.....

.....
.....

Were teats sprayed or dipped after treatment? No Yes

Do the DCT records show:

- Cow ID
- Treatment date
- Product used

Were there any cases of clinical mastitis after drying-off? No Yes

How were cows managed after drying-off?.....

.....
.....

Were the majority of cows in the herd likely to be producing between 5 and 12 L at drying-off?

Was the method used to dry-off cows consistent with the Farm Guidelines?

Good dry cow records are essential for managing milk quality at calving

Clinical cases after drying-off reflect the overall drying-off management from preparing the cows, techniques used to administer antibiotic, to hygiene post drying-off

Date.....

Client.....



Environment

Are there areas around the farm that are likely to make udders muddy prior to milking?

- Laneways No Yes
- Gate ways No Yes
- Areas around troughs No Yes
- Entrance to the dairy No Yes
- Exit from the dairy No Yes

Where do cows calve?

- Calving pad
- Paddock
- Other

Do you have a feed pad? No Yes

Are there any other points you would like to discuss about the problem?

.....
.....
.....
.....
.....

If an inspection of the feed pad or calving pad could be beneficial, schedule it in your diary for the appropriate time of year

.....

Date.....

Client.....



Feb 2003

Milk Cultures

Technote 4 page 5

[Business name]



Cow ID	Age	Calving Date	Sample		Comments/ Sampling reason	ICCC		Results
			Date	Type		Last Count	Peak last lactation	
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

This batch of samples

Who took these samples

Dates submitted for culture

Lab submitted to

The samples are Fresh Frozen

Sampling Reason (if mixed, then mark reason for individual cows in column)

- High cell count.....
- Clinical cases
- Other

Who selected cows

Sample Type (Identify quarter in column)

- Composite samples
- Individual quarter samples
- Individual quarters after RMT/ or conductivity test

Results

Number of samples:

- Staph aureus Cbovis
- Strep uberis CNS
- Strep ag Other
- Strep dyst Mixed
- E.coli Contaminated
- Number of samples with no growth
- Number with interpretable results

Date Client



Comparison of mastitis prevalence in different groups of cows

Group	No. cows with any cell count above 250	Total No. cows in group	Percent above 250
1st lactation heifers			
Mature cows			

Is any particular group of cows affected? (eg different ages, stages of lactation or management groups)

Use the summary on the most recent herd test to identify cows which have had any cell counts above 250,000 cells/mL

Estimating the rate of new infections in first lactation heifers

Herd Test Date	No. heifers with any cell count above 250	No. of heifers tested	Percent above 250

The percent of heifers that have had a cell count above 250 is an indicator of the new infection rate in the herd

Suspect a problem if more than 20% of heifers infected by the end of their first lactation

Warning in seasonal herds if percentage increases by more than 1% per calendar month

(interpret with care when there are less than 40 heifers tested)

The number of persistent infections

No. cows with any cell count above 250	No. that ALSO had a cell count above 250 last lactation	Percent

Date.....

Client.....



Milking Machine Dry Test
(AMMTA test or equivalent dry test)

[Business name]



Attach copy of dry test here

Date.....

Client.....



Clusters Not during milking

No. clusters Claw type.....

Parallel 85-95° Claw nipple size..... mm

Attach rear Air vent size..... mm

H'bone, attach side S/off valve leaks..... L/min

Cluster position in relation to the cows' udders Air adm. range..... L/min

Good / Fair / Poor Cluster air leaks..... L/min

Shell dimensions.....mm
(Length x Outer Diameter x Hole x Internal Diameter)

Liner type Model no.

Mouthpiece lip diametermm Ineffective length mm

Upper barrel bore.....mm Effective length..... mm

Mid-barrel bore.....mm Liner length unstretched..... mm

Short milk tube boremm Liner stretch (%) or tension (N)

Collapse widthmm

Claw vacuum During milking OR with flow simulator

During milking: Measured at 30 and 90 seconds after cups on

Unit	Average claw vacuum (kPa)		
	1. Avg at 30sec	2. Avg at 90sec	Difference (2-1)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
Mean			No.

Pass/Fail guideline

Mean claw vacuum within range 36-42 kPa at 5 L/min with simulator; or 90 seconds after cups on

Not during milking: Using a flow simulator

Unit	Average claw vacuum (kPa)	
	At 5 L/min	At L/min
1		
2		
3		
4		
5		
Mean		

Vacuum levels and differences Not during milking

Vacuum reading	Guidelines	Pass/Fail
Working vacuum (WV).....kPa at central test point (ctp)	High line 47 - 50 kPa Mid line 45 - 48 kPa Low line 42 - 46 kPa	
Unit fall off test 1 unit.....kPa 2 units.....kPa	Not more than 2 kPa with one unit open (OR with two units open when there are more than 32 units in the shed)	
Regulator undershoot 1 unit.....kPa 2 units.....kPa	Not more than 2 kPa below min vacuum with one (or two) units open	
Regulator overshoot 1 unit.....kPa 2 units.....kPa	Not more than 2 kPa above max vacuum with no units open	
Vacuum change at regulator Reg vac with ctp at WV.....kPa Reg vac with ctp at (WV-2).....kPa Change at regulatorkPa	A change of 1.3 kPa or more at regulator when receiver vacuum is dropped by 2kPa	

Vacuum stability in milking and receiver

During milking

	Vacuum reading (kPa)		Not more than a 2 kPa transient vacuum drop for 95% of the total milking time	
	3. Avg	4. Min	Drop 3-4	Pass/Fail
Milking vacuum level with all or most units connected				
Receiver vacuum level during cluster changeover				

Date.....

Client.....

Milking Routines, Teat Cup Slips

Technote 5

Technote 6 pages 6-7

[Business name]



Names of milking staff

.....
.....
.....

Others not present today

.....
.....

Cows usually enter the shed

- On their own
- With help
 - Backing gate
 - Dog
 - Operator
 - Poly-pipe

Comment.....

Most teats are clean and dry as cows enter the shed

- No
- Yes

Teats are washed

- No
- Yes

If yes, are they:

- Washed only if muddy
- Washed as part of shed routine

How

There are sufficient functional hoses to enable adequate washing

- No
- Yes

If washed, teats are dried No Yes

If yes, how?

Pre-milking teat disinfection is used

- No
- Yes

Comments

The contamination of teat ends was checked with a damp teat wipe immediately before cups on

- No
- Yes

If yes, result

Everyone wears clean gloves at milking

- No
- Yes

Cups are put on when the teats are plump with milk

- No
- Yes

The cluster is weighed down (by hand or brick) to finish milking...

- Never
- Some-times
- Most cows

At cups off, the vacuum is released by...

- Kinking long milk tubes or using snap clips
- Pulling the Burton
- Automatic Cup Removers
- Other

How

After vacuum is released ...

- Most cups drop away in 2-3 secs without help
- Some need assistance to get the cups off
- Most cups hang for 4-5 seconds or longer
- Removal by AGR's is satisfactory

Effectiveness of teat disinfectant coverage was assessed by:

- Visual inspection
- Towel test
- Spray pattern

Comments

Any recent changes?

Has anything about the milking routine changed in the last 6 months?

.....
.....

Any staff changes in the last 6 months?

.....
.....

Other comments / observations

.....
.....

Mark teat cup slips here

HTI

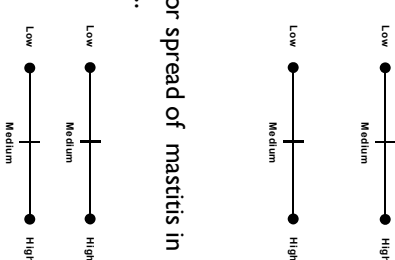
Number of cup slips recorded
Number per 100 cows

How do you (the adviser) rate the ...

consistency of the milking routine in this shed

understanding of the protocol for various activities by all staff

The opportunity for spread of mastitis in this shed through...
physical transfer is...
impacts is...



Date.....

Client.....

Detection

Practices routinely used by milkers to detect clinical mastitis are...

- Visual inspection of the udder
- Palpation of suspect quarters
- Striping of suspect quarters
- Regular striping of fresh cows
- Routine striping of the whole herd
- Frequent inspection of filter socks
- Other

Clinical cases are usually detected at...

- Cups on
- Cups off

All workers know the protocol used to identify clinical cases for treatment in this herd

- No
- Yes
- Don't know

In your opinion (as the adviser), clinical cases are likely to be...

- Missed
- Usually detected
- Over-diagnosed

Milk samples are collected from clinical cases prior to treatment

- All
- Some
- None

Treatment

The treatment routine for clinical cases includes....

- fully striping quarters out before infusing antibiotic No Yes
- milking quarters out fully at every milking No Yes
- sterilising teat ends No Yes
- hygienic infusion technique No Yes
- post-treatment teat disinfection No Yes

The treatment protocol includes....

- A full course of treatment No Yes

Products used

- 1)
- 2)
- 3)
- 4)

comments on selection

.....

.....

.....

comments on effectiveness

.....

.....

.....

Identification / Hygiene

Cows with clinical mastitis are identified by...

- Leg bands
- Tail band
- Spray paint
- ID written on whiteboard
- ID written in diary
- Other

Every milker, including relief staff, is familiar with the system used to mark treated cows

- No
- Yes
- Don't know

Clinical cases are...

- Milked last
- Milked into a test bucket
- Other

If a test bucket is used...

- it has a separate cluster
- the cluster is adequately washed between cows

In your opinion (as the adviser), the opportunity for spread of mastitis from clinical cases in this herd is...

- Low
- Medium
- High

Date.....

Client.....

Teat Condition

Technote 9

Feb 2003

[Business name]



Cow ID	Skin condition	Colour	Swelling at base	Teat end firmness	Orifice openness	Teat end
	Normal, Dry Lesions, Haemorrhages	Normal, Pigmented Red, Blue	Normal Swollen	Normal Firm	Closed Open	No ring, Smooth Rough, Very rough
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
	Lesions (%)	Red or Blue (%)	Swollen (%)	Firm (%)	Open (%)	Rough (%)
	Haem (%)					Very rough (%)

← Identify quarters
Left, Right, Front,
Back at the top of
columns

If an observation is
missed place a cross
(X) in the table

If you leave 'normal'
findings as blanks in
the table, tick here

Date Client

Cow Behaviour

Technote 6 page 4

Milking Time per Cow

Technote 6 page 5

[Business name]



Cow ID	Count Kicks and Steps involving the rear legs			
	In stall waiting to be milked	At preparation / cluster attachment	In first 2 mins of milking	In last 2 mins of milking
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
Total no. cows				
Cows having a Kist response	%	%	%	%

Cow ID	Clock time (00:00)				Milking time per cow (mins)		
	1. At cups on	2. True flow starts	3. Flow ends	4. At cups off	Delayed flow (2-1)	Flow time (3-2)	Over milking time (4-3)
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
Proportion of cows with delayed let-down (>20 seconds)					%	mins	mins
Average milk flow time per cow						mins	
Average duration of over milking							mins

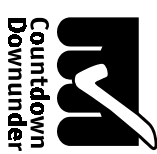
Date Client

Completeness of Milking

Technote 6 page 6

Cluster Alignment

[Business name]



Cow ID Identify quarters →	Strip yields per quarter (mL) L less than 50 mL, M 50-100 mL, H more than 100mL			
	L	M	H	
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
No. quarters Quarters yielding more than 100 mL (as a fraction)				
Percent of all quarters				%

Cluster alignment

Do clusters hang squarely on nearly all udders? No Yes

If no, do clusters appear to be:

- Twisted Because of long milk tube positioning relative to udders
- Because the long milk tubes and pulse tubes are twisted
- Pulling or dragging on the udder
 - Because the long milk tubes are too long or too short
 - Because the stainless steel droppers are too long
 - Due to the lack of easy adjustment for udders of different heights
 - Due to incorrect positioning of milkline inlets or Automatic Cup Removers

Estimated Teat size and shape (based on visual assessment only)

Teat size in the herd is: Highly consistent Very variable

In length, the teats tend to be: Short Average Long

In width, the teats tend to be: Narrow Average Wide Funnel-shaped

In shape, teat ends tend to be: Rounded Pointed Square-ended

Date.....

Client.....

The stock product (as purchased)

Brand name..... Volume.....

Purchase date..... **NRA approved?** No Yes

Product type Concentrate to mix with water Ready-to-use

The active Iodinegm/L
 Chlorhexidine gm/L
 Other gm/L

Contains emollient? No Yes If yes, concentration

Storage on farm No Yes
 Product stored out of direct sunlight? No Yes
 Product container is sealed at all times? No Yes
 comments

Product expiry date.....

Mixing - do not complete the unboxed area if using a Ready-to-use product

Teat disinfection mix (as applied)

Quantity mixed in each batch.....litres

The mix

Concentratelitres

Water.....litres

Added emollientlitres
 (name)

Calculated active in mix %

If available, tested active %

Calculated emollient in mix %

The routine

Who mixes the solution?

Are components measured No Yes accurately?

How often is the mix made?

Do the containers keep the prepared mix clean? No Yes

Any recent changes?

Has anything changed in the last 6 months?
 (product type, application, mixing operators...)

 Any other comments.....

Application

Applied by Spray For Whole season Part season
 Dip

If spray, the delivery method Hand held trigger bottle In-line wands is by..... Portable pressure system Automated

The spray nozzle delivers a stream Angled Vertically Horizontally

Volume of prepared teat disinfectant used per cow:
 Volume used per milkingml =ml/cow
 No. cows milked

The water used

Source: Tank Spring Town River Bore Channel or dam Other.....

Via hot water service? No Yes

Treated with any chemicals?.....

Water been tested? No Yes

If available, tested hardness.....ppm
 tested alkalinityppm

Date

Client

Calving area checklist

The calving areas were inspected
 No Yes Date.....

Cows have the opportunity to calve in clean and well-drained areas
 No Yes Don't know

The calving area does get overcrowded
 Regularly Sometimes Never

When answering this, consider:

- The size of the area.....ha
- The maximum number of cows calving on any one day cows
- The length of time that the cows tend to stay in the calving area days
- Whether cows tend to concentrate in certain spots (feed points, camps etc)
- Any special strategies used to manage the calving area

Heifers calve in the same areas as the cows
 Usually Sometimes Never

Yards, lanes and waterways

Yards and lanes were inspected
 No Yes Date.....

When cows come into the milking area
 Most udders are clean and dry
 Many need pre-milking preparation

Laneways or gateways are likely to be contributing to udder soiling
 No Yes Don't know

Cows can enter dams, channels or other waterways
 No Yes Don't know

Cows use parking bays before or after milking
 No Yes

Sprinklers are used to keep cows cool in hot weather
 Sometimes Never

The feed pad

Is a feed pad used?
 No Yes

If yes

It has been inspected
 No Yes Date.....

The pad is used:
 Routinely after milking
 Seasonally

At calving
 Part of the year.....
 Other

The pad is used by:
 Cows only
 Heifers only
 Heifers and cows

Other (eg those at risk of milk fever)

How deep and liquid is the surface of the pad?
.....

Cows' udders are likely to get soiled
 Cows stay relatively clean

Draw maps or diagrams
wherever appropriate

Date.....
Client.....