

Investigation of Inhibitory Substances Found in Milk



Dairy

Investigator name:	Role/ organisation:	Date of investigation visit:	

		Producer number:	
Name and address of producer		Herd size:	
		Calving pattern: AYR/ Seasonal	
People present during this investigation			
	Date of failure:	Date(s) of milking(s):	
Details of the failure	What test(s) failed:		
	Tanker/ Bulk tank/ other:	Litres affected:	
Additional details	e.g. is this a one-off fail or an ongoing problem?	is a one-off fail or an ongoing problem?	
Collection frequency	Every Day/ Every Other Day/ Special		
MilkSure accredited?	yes/ no/ expired	Date of accreditation:	

Name and address of prescribing vet		Vet informed of failure? yes/ no Date:	
Follow up testing results	Substances identified: Is a frozen milk sample still available for further tests if required?	Tests used: Randox/ LC-MS Dates:	
Previous failures in past 12 months:	yes/ no	Date(s):	
Reason(s) for previous failure(s):			
Suspected reason for failure given by producer (e.g. details of cow i.d. and medicines involved)			
Evidence for reason given			
Names of milkers on day of failure			

INSTRUCTIONS FOR USING THIS INVESTIGATION FORM

For this investigation, you will need:

- · Medicine records to check all treatments in the 14 days prior to the fail date
- Vet invoices for the two months prior to the fail date
- Movement records to check purchased cows in the 14 days prior to the fail date
- Calving records to check all calvings in the 14 days prior to the fail date, and the drying off dates of these cows

There are six check cards to use during this investigation covering the following categories of risk:

1 Communication and record keeping

2 Medicine use

3 Accidental contamination risks

4 Dry cows and bought-in cows

5 Training and personnel factors

6 Cow factors and miscellaneous

For each check card, first ask the **key questions** to find out what is going on, and what the normal procedures are on this farm. During the investigation you should include a check of the parlour (accidental contamination; communication and record keeping) and the medicine cupboard (medicine use).

Then for each **risk factor**, mark Yes or No whether it could be a risk for this farm (regardless of whether you or the farmer thinks it caused the failure in this case).

Reserve making your diagnosis until you have reached the end of all Check Cards. Through a logical and thorough process of questioning you should have a more confident idea of what caused the failure in this case (the "root cause"). Return to each card and circle the minor, major and main contributing factors to your root cause diagnosis *in this case*.

Write the overall risk score on the dial on the final page, and draw a pointer on the risko-meter. Below 10% is the target. You will have marked on each card where attention is required to prevent failures in the future.

Record your diagnosis of the root cause in this case and your main recommendations for actions to be taken to reduce risks of failures occurring again.

Note, it is not uncommon for the final root cause diagnosis to be different from the initial presumption.



Card 1: Communications and record-keeping



Key	que	stio	ns
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How are cows in the herd identified? For example freeze brands, management tags etc. How are duplicate numbers, or other mis-identification errors avoided?	
How are treated cows identified? Are they marked using at least two methods? How likely are the markings to remain in place? Are they marked up before treatments are given?	
How does the farm ensure all personnel are aware of cows under withdrawal?	
Is there an antibiotic/ treated cow withhold process on display for all personnel including relief milkers?	
Is there a wipe-board or similar in the parlour marked with cows under withdrawal?	
What is the process for recording treatments?	
Where are treatments recorded?	
How complete are the medicines records? If medicine records are incomplete or not up- to-date, it will be difficult to properly investigate this case. There will be a greater risk that the root cause is not discovered. Ask the farmer, but also make sure you check treatment records against medicine purchases.	
Is each medicine administration recorded, not just treatment start and end times?	
Are withdrawal times recorded in the medicine records? How are they calculated?	
How are treatments and withdrawals recorded when they are administered by the vet?	
How are treatments recorded when they are given in unusual circumstances, for example outside the parlour or in the middle of the night? What is the possibility in this instance that a treatment was given to a cow in an unusual circumstance and then not recorded?	

Card 1: Communications and record-keeping



	Risk factor	Identified as a potential risk on this farm	Estimated contribution to failure under investigation
1	Treated cows are not marked properly. Cows under treatment should be marked in at least two ways (for example tail tape and stock marker spray). Cows should be marked up before treatment.	Yes No	main major minor
2	Treatments are not fully recorded. All treatments should be recorded in the farm medicine records, not just the first or last administration. This should be done as soon as practical, and at least every day. The withdrawal period should be recorded, including a calculation of the earliest possible date and time the milk can be put back in the tank.	Yes No	main major minor
3	Treatments administered by the vet are not recorded. The vet should write treatment details in the farm medicines records, or provide a written note of treatments, including the minimum withdrawal period.	Yes No	main major minor
4	No wipe board/ chalk board in parlour. As well as treatment records and marking the cow, it is sensible to record cows under withdrawal on a board in the parlour for better communication between milkers. This is an essential if cows under withdrawal are not separated from the main herd.	Yes No	main major minor
5	Treatments given in unusual circumstances. Mistakes are more likely whenever there is a break in usual practices. For example, tubing a cow outside of the milking parlour, say a downer cow which then gets up and joins main herd; or a treatment given by someone who is not the usual person. Forgotten treatments are a big risk - and by nature of being forgotten, they can be difficult to identify during an investigation.	Yes No	main major minor
6	Poor identification of the treated cow. For example, the wrong number typed into a computer (very important for automated/ robotic systems); no freeze brands; mis-reading of freeze brand; duplicate identities; lost ear tags; dyslexia; poor eyesight.	Yes No	main major minor
7	No clearly communicated protocol for cows under withdrawal. Everyone on the farm, including part-time and relief milkers, should be fully aware of the farm's protocols for recording and marking cows under withdrawal, as described in points 1-6. The protocols should be written down as well as communicated orally.	Yes No	main major minor



Key questions

Which cows were treated with antibiotics in the 10 days prior to the failure? It will be useful to use the table on Card 6 to record these.	
What other treatments were administered in the 10 days prior to the failure? For example, flukicides; anthelmintics; anti-inflammatories.	
And what else? Investigate carefully the possibility of forgotten treatments which were not recorded. Of course, these can be difficult to remember, but common examples include cows treated by the vet during routine fertility visits, or freshly calved cows/ downer cows which were treated outside the parlour. What vet visits were there in the days before the failure? Were all treatments recorded? Check vet invoices and visit slips against the medicine book records.	
Do we know what the substance was that caused the failure? For example, from Randox Infiniplex test results. What products used on farm contain this substance.	
Were all treatments administered in total accordance with data sheets? Watch out especially for prolonged courses of mastitis tubes. Also, wrong dose, increased frequency, double tubing or injectable antibiotics infused into quarters; all this is off label and will affect withdrawal times. IN THE 10 DAYS PRIOR TO THE FAILURE DATE, WERE ANY TREATMENTS GIVEN WHICH WERE NOT <u>FULLY</u> IN ACCORDANCE WITH EXACT DATA SHEET INSTRUCTIONS? You must check very carefully for this.	
Are withdrawal times shown on all medicine bottles/ boxes?	
When would the farm use an extended withdrawal time?	
Were there any treatments used under the cascade (this is off-label but with specific veterinary advice)? What was the withdrawal used? Should be 7 days <u>minimum</u> , but specified by prescribing vet.	
Were there any cows under treatment with more than one antibiotic (e.g. mastitis tubes alongside injectables)? Combinations can lengthen the required withdrawal period, even though it isn't necessarily off-label or cascade.	
Has any milk been allowed back into the tank before the end of the full withdrawal?	
Were any cows under re-treatment before the original withdrawal had ended?	
Does the farm have an annual vet review of antibiotic use? When was the last one, is it available and what were the findings?	
Does the farm have written treatment protocols devised by the vet? When were they last updated? Where are they displayed? How closely are they followed?	
Are there any milking cows which are being milked on three quarters? Has the non- milked quarter been dried off or treated with antibiotics?	
Does the farm own or use a quarter milker? Is milk from ALL quarters discarded for ALL treated cows?	
Does the farm ever use antibiotic powders or creams (homemade by vet or another) to treat lame cows, udder sores, teat sores? For example, wraps to treat digital dermatitis. Check vet invoices for purchased antibiotic powder.	
Does the farm use on-farm antibiotic testing? For example, Delvo test kits. Do they use a third party (e.g. vet, milk purchaser) for ad-hoc testing? Which cows are tested? Watch for shortening of withdrawal times by testing before the end of the w/d period.	
Where are medicines stored?	
Are dry cow tubes stored separately from milking cow tubes?	
Who has access to medicines? Is the store locked all the time? Where are the keys?	

Card 2: Medicine use



	Risk factor	Identified as a potential risk on this farm	Estimated contribution to failure under investigation
1	High overall medicine use. A high mastitis rate and high use of antibiotics increases the risk of residues considerably. The farm should have an annual medicine audit with their vet; current RUMA targets are less than 0.727 intramammary tube courses per cow per year (DCDVet), and less than 21mg/PCU overall antibiotic use.	Yes No	main major minor
2	Written veterinary treatment protocols are not up-to-date, or are not clearly displayed and available for use. The protocols should include the withdrawal periods to apply.	Yes No	main major minor
3	Treatments are used which do not exactly follow the veterinary treatment protocols. For example, combinations of antibiotics or off label. It is illegal to use medicines off-label without specific veterinary authorisation, under cascade regulations.	Yes No	main major minor
4	The correct withdrawal periods are not applied. For usual on-label use, the minimum withdrawal period on the data sheets can be used. An extended withdrawal period must be used when medicines have been used off label (for example a prolonged course of mastitis tubes), or for some combinations of medicines.	Yes No	main major minor
5	Wilful shortening of withdrawal periods. For example, relying on dilution, or using on-farm inhibitory substance tests prior to the end of withdrawal periods to purposefully return milk to the bulk tank sooner than allowed. These practices are very risky and in any case illegal.	Yes No	main major minor
6	Incorrect administration of product. For example, injectable antibiotic or an unlicensed product infused into a quarter. This would be illegal.	Yes No	main major minor
7	Milking cows which have received a dry cow tube during lactation. For example, if a quarter is dried off with antibiotics and the other quarters continue to be milked (despite a withdrawal period), or accidental mix up of tubes.	Yes No	main major minor
8	Quarter milking. This is a practice of withdrawing milk only from the quarter which has been treated. It is illegal and very risky; medicines will transfer between quarters.	Yes No	main major minor
9	Failure to test milk after the end of the withdrawal period, after cascade treatment. For example, with an on-farm Delvo test kit, after 7 days minimum.	Yes No	main major minor
10	Unlicensed medicines are being used. This includes illegally imported medicines, medicines obtained without veterinary prescription, out-of-date medicines or substances used medicinally which do not have a license for milking cows.	Yes No	main major minor
11	Medicines are not locked away at all times. Medicines should be stored correctly, and this includes being kept in a locked, secure cupboard or room and out of sight. There should be tight stock control (medicines in and medicines out). Failure to treat medicines with this care will increase the risk of malicious or accidental contamination of milk.	Yes No	main major minor

Card 3: Accidental contamination risks

Key questions

Are treated cows kept in a separate group? Are they milked last, or through a separate parlour?	
Who was milking, or was in the parlour, when the failure occurred? How many different people milk the cows?	
Are cows treated <u>during</u> milking? If so, what precautions are taken? This is risky practice, but examples of precautions include marking treated cows before treatments are given; changing gloves after administering treatments; avoiding distractions; immediately diverting treated cows to a separate group as they exit the parlour.	
Is there a separate dump line? If there is a lever to divert milk from the main line to the dump line, it is possible the valve is leaky. When were the valves last serviced? Alternatively, the long milk line must be removed and attached to the dump line.	
Is a dump bucket used? Watch that if this takes its vacuum supply from the milk transfer line, there is a risk of contamination.	
Is a separate cluster used for withdrawal cows?	
Does the parlour have milk jars? Are these used for collecting withdrawal milk before dumping? The exit valve might leak milk into the main line, or milk lining the jar might cause residue.	
How are clusters/ jars rinsed through after milking cows under withdrawal?	
What cleaning procedures are in place for dump buckets?	
How is dump milk disposed of?	
Are treated cows "locked out" automatically by the parlour? This means that when the cow comes in to be milked, the machine will not allow the unit to be attached unless the milker presses an override switch.	
Are cows treated during milking? Are gloves worn? Are they washed after handling antibiotic tubes?	
Are antibiotic footbaths used? Check also about using antibiotic sprays in the parlour, especially solutions applied to feet with pressure sprayers.	
Have antibiotic or disinfectant sprays, ointments, powders or creams been applied to the teats or udder of any cows (not including proprietary teat dips)? For example, cows with sores or with udder cleft necrosis. Have antibiotic powders or pastes been applied to foot lesions, with or without a wrap? For example, cows with digital dermatitis.	
Is dairy chemical ever added to milk in the bulk tank? For example hypochlorite. What other risks are there for contamination with dairy chemical and disinfectants?	
Is the bulk tank room locked? Who has access to the key? Who could have access to the bulk tank?	

Card 3: Accidental contamination risks



	Risk factor	Identified as a potential risk on this farm	Estimated contribution to failure under investigation
1	Cows under treatment or withdrawal are not separated from the main herd. By itself, full separation of cows under withdrawal from the main milking herd is a big factor to avoid mistakes happening. This should be seen as essential in larger herds, or where there are several staff and part-time milkers. Very large herds should ideally have separate milking facilities for these cows too, to further reduce the risk of withdrawal milk entering the bulk tank. The cows under withdrawal should be milked last, or through a separate parlour (larger herds).	Yes No	main major minor
2	Cows are treated during normal milking times. Milking parlours are busy places. Cows should be separated <u>before treatment</u> and treatments can then be given with due care and attention, including marking the cow properly, ensuring the treatment is administered properly, exactly according to the data sheet, and the right recording is done, including the correct milk withdrawal.	Yes No	main major minor
3	A separate cluster is not used for cows under withdrawal. This is important if cows under withdrawal are not milked last or if there is not a full wash through after each milking (such as in an automated milking machine/robot).	Yes No	main major minor
4	A separate dump bucket is not used for withdrawal milk. This is important if there is not a dump line or if withdrawal cows are not milked separately.	Yes No	main major minor
5	Recorder jars are not rinsed out after milking withdrawal cows. This is important where recorder jars are used to collect withdrawal milk. Beware that the stop valve may be leaky. A dump bucket is preferable.	Yes No	main major minor
6	Mechanical failure. Examples include leaky valves/ incomplete milk diversion into a dump line; failure of auto-i.d. recognition (especially in robotic milkers); failure of wash-through in robotic systems.	Yes No	main major minor
7	Contamination with inhibitory substances (disinfectants) through the plant. Examples include where there is gross contamination of bulk tank milk with teat dip; cluster flush chemical or hypochlorite.	Yes No	main major minor
8	Contamination of teats with antibiotics or other inhibitory substances. Examples include splash from foot baths (antibiotics should not be used in footbaths in any case); antibiotic powder or ointment applied to foot infections; antibiotic sprays and aerosols used in parlour; contamination on milkers' hands; contamination from teat or udder ointments.	Yes No	main major minor
9	Bulk tank room is not locked. If unauthorised people have access to the milk bulk tank there will be a greater risk of accidental or malicious contamination of milk.	Yes No	main major minor

Card 4: Dry cows and bought-in cows



Key questions

Which cows have calved in the 10 days prior to the failure? It will be useful to record these in the table on Card 6. When were they dried off and what were they dried off with? Were any of them bought-in cows?	
What cows have been bought-in during the 14 days prior to the failure? Have they had their milk tested for inhibitory substances?	
Have antibiotic tests been used for fresh calved cows? Which cows are usually tested? By whom?	
Are dry cows separated from the milking herd? When are they separated? How secure is the separation? Have there been dry cows mixed with the milkers recently?	
How would you know if a dry cow got into the milking herd? How possible is this? Has it ever knowingly happened before? Could it have happened this time?	
How are dry cows marked up? How well do the markings last?	
What dry cow tubes are used? What are the withdrawal times?	
What proportion of cows are dried off with antibiotics? One of the benefits of Selective Dry Cow Therapy is that it reduces the risk of residues due to dry cow antibiotics.	
Do any cows receive additional antibiotic treatments at drying off or before calving, in addition to tubes? Were any cows double-tubed? Did any recently calved cow have additional antibiotic treatments before calving, or immediately after calving?	
Have any cows calved early, that you are aware of? What system is in place to identify these cows? What is in place to ensure the full withdrawal period elapses?	

Card 4: Dry cows and bought-in cows



	Risk factor	Identified as a potential risk on this farm	Estimated contribution to failure under investigation
1	Dry cows are not separated. Accidentally milking a dry cow is more likely to happen if they are not always separated, including in summer.	Yes No	main major minor
2	Dry cows are not secure. A mix up of groups or dry cow escapee is more likely if the separation is not secure.	Yes No	main major minor
3	Selective dry cow therapy is NOT used. Cows dried off with teat sealant alone (no antibiotic) do not give rise to a risk of an antibiotic failure when they calve. The higher proportion of the herd which is dried off without antibiotics, the lower the risk of antibiotic failure from dry cow tubes.	Yes No	main major minor
4	Cows which have received dry cow antibiotic are not marked up. Cows should be marked (e.g. tail tape) <i>before</i> administering tubes, even if they are separated from milking cows, in case of an escapee or accidental mixing of groups.	Yes No	main major minor
5	Dry cows calve before expected date and before end of withdrawal period. There should be a robust recording and checking system to ensure the full withdrawal period has elapsed before allowing milk into tank for dry cows, in case of cows calving at an unexpected earlier date.	Yes No	main major minor
6	Cows dried off <u>with antibiotics</u> are milked into the tank before the withdrawal period has elapsed after calving. Antibiotic dry cow tubes have a minimum withdrawal period which may vary depending on the length of the dry period. It is no longer a legal obligation to withdraw milk for 96 hours if the cow had <u>not</u> been dried off with antibiotics, although the milk must not be classed as colostrum.	Yes No	main major minor
7	Tight calving block. Although this is good practice for a block-calving herd, a <i>very</i> tight block can increase the risk of bulk tank failure. There are two reasons: firstly, a very high proportion of cows contributing to the bulk tank which are very freshly calved and which had been dried off with antibiotics can give a high basal level of antibiotic in the bulk tank (even though each individual cow is below the safe legal level); secondly, colostrum milk contains natural inhibitory substances which can cause a failure of an inhibitory substance test (e.g. Delvo T). Testing companies heat treat the milk during a confirmatory test to avoid this latter problem. The former risk is reduced by using selective dry cow therapy in a higher proportion of the herd.	Yes No	main major minor
8	Bought-in cows are not checked for inhibitory substances. Bought-in cows should always be tested for inhibitory substances before milking into the tank, in case they are still under withdrawal. Beware bought-in dry cows which might calve earlier than expected, or have been treated with uncertain dry cow product.	Yes No	main major minor
9	Accidental use of dry cow tube(s) in a milking cow. Dry cow tubes should be stored separately from milking cow tubes to avoid confusion and mistakes in administration.	Yes No	main major minor



Key questions

List all people who ever administer medicines on this farm? How many people is that?	
What training has each person received? List for each person: When was the training given? Was a competency test passed? Was the training approved by Red Tractor standards?	
Is the farm MilkSure accredited? When was the accreditation date? Who was the vet who did the risk assessment? What was in the action plan? Were the actions completed?	
List all people who ever milk on this farm? Who was milking when this failure occurred?	
What training has been given to milkers about procedures for cows under withdrawal? List for each person: When was the training last given? Who did the training? What training was given to the milker(s) in this case?	
What about relief milkers? How do they know the farm's protocols? What instruction are they given beforehand? What supervision do they have?	
What provision is there to help people understand the instructions? For example, for foreign workers, for people with reading difficulties and for dyslexic personnel?	
What understanding is there about cascade use? Increased dose rate? Increased frequency? Increased duration of treatment? Double tubing at the start? Different route of administration? Use of unlicensed medicines? What understanding is there about cascade use vs illegal use?	
What understanding is there about when to lengthen withdrawal periods? For cascade use? What duration (7 days <u>minimum</u> ; it may require longer than this)? For combination use (two or more medicines used together? What duration?	
What inhibitory substance testing kits are available on farm? Check when they are being used. Check that the kits are in date. Check that they are stored correctly (correct temperature).	
Which cows are tested for residues? None? All cows after treatments? All cows after cascade treatments? Some cows after cascade treatments only? Tested only <u>after</u> the end of the withdrawal period, or sometimes before that?	
Which milk is tested? Milk from recorder jar? from parlour sampler? from dump bucket? Foremilk? From treated quarter(s) only? Is milk diluted before testing? If so, how?	
 What training has been given about taking samples for inhibitory substance tests and using the test kits correctly? Watch for mis-understandings, in particular: That to pass an individual inhibitory substance test necessarily means the milk is OK to go in the tank - it doesn't That to fail an individual inhibitory substance test necessarily means this cow caused the bulk tank failure - it doesn't 	
Who else might have access to medicines or might have administered treatments to cows on this farm? What is the risk that this failure was the result of malicious contamination by someone with a grievance?	

Card 5: Training and personnel factors



	Risk factor	Identified as a potential risk on this farm	Estimated contribution to failure under investigation
1	Training is not up-to-date for all persons who ever administer medicines. Training should be a Red Tractor approved course within the past three years. MilkSure is BCVA's and Dairy UK's training programme specifically to reduce the risk of residues. Ideally, individuals should complete a Certificate of Competence test, such as the MilkSure Technical Essentials test.	Yes No	main major minor
2	Training has not been given to all milkers. All milkers should be clear about the procedures for cows under withdrawal, including what to do if they are unsure. Relief milkers require training too, and clear instructions relevant to this specific farm. It should be checked that everyone can read/ understand all instructions, including foreign workers whose first language may not be English.	Yes No	main major minor
3	There has been no training on sampling individual cows for inhibitory substance tests. Whether the test is conducted on farm or by a third party, it is important that the correct sampling procedure is used, and it is clear when the tests should be used. A protocol is summarised below.	Yes No	main major minor
4	There is access to medicines by unauthorised persons. If there is lax access to medicines for individuals who have not been fully trained in their use, this will inevitably increase risk of inappropriate treatments, failure to record and residue failures.	Yes No	main major minor

The correct way to take a milk sample before using an inhibitory substance test

1: Take a representative sample of milk from all four quarters i.e. a composite sample of equal volumes, and after foremilk	4: Avoid contamination with disinfectants, teat dip or other chemicals which are inhibitory substances		
has been stripped from each quarter			
2: Wear gloves Wash and dry your gloved hands to reduce risk of	5: If collecting from a milk recorder jar ensure that the jar was not contaminated from a previous animal		
contamination			
	6: Identify sample correctly		
	Label the container with the cow I.D. and ensure it is securely		
3: Use an approved sample container	sealed		
Clean, dry and not containing any preservatives or inhibitors.			
Note that milk sampling pots used for cell counts have a preservative added	7: Keep sample cool If there is a delay between sampling and testing, the sample MUST be refrigerated, and preferably be frozen		

Card 6: Cow factors and miscellaneous



Key questions

How confident are you that ALL treatments in the 14 days prior to failure were recorded?

How confident are you that the correct withdrawal periods were applied for all cows which received treatments? Use the scribble tables below to write the treatments, whether they were on label and whether the correct withdrawal periods were calculated.

How confident are you that there were no mistaken identities/ escapees or accidental contamination?

Which cow(s) is suspected of requiring a longer withdrawal period than either the vet advised, or which is on the data sheet? It is stated on the data sheet of one dry cow product that cows which have milk fever might require a longer withdrawal. Have any recently calved cows had milk fever?

ANTIBIOTIC treatments to milking cows in the 10 days prior to the failure

Cow ID	Treatment: product, dose, duration	Start date	End date	Date milk added to bulk tank (am/pm)	On/ Off label	Milk withdrawal used (hours)	Correct withdrawal (Y/N)

	New calved cows in the 10 days prior to the failure						
Cow ID	Dry off date	Treatments at dry off and other treatments during the dry period	Dose	Milk withdrawal used (days plus hours)	Calving date	Date milk added to bulk tank (am/pm)	Correct withdrawal (Y/N)

Card 6: Cow factors and miscellaneous



	Risk factor	Identifi a pote risk or far	ied as ential n this m	Estimated contribution to failure under investigation
1	Extended excretion of antibiotics beyond the stated withdrawal period. For example, if the cow is very ill, or has suffered milk fever, there is a theoretical risk of prolonged excretion of antibiotics into the milk beyond the withdrawal period. Due to the way a milk withdrawal period is calculated, this is an unlikely cause for a bulk tank failure.	Yes	No	main major
	IF THIS IS SUSPECTED, IT IS AN ADVERSE REACTION AND THE VET SHOULD RECORD THE EVENT WITH THE VETERINARY MEDICINES DIRECTORATE USING THE SUSPECTED ADVERSE REACTION SURVEILLANCE SCHEME (SARSS).			minor

Other possible factors	Estimated contribution to failure under investigation
If there are factors not included elsewhere on the checklists, pla	ease record here.

If there are factors not included elsewhere on the checklists, please record here. Include as much detail and evidence for your conclusions as possible.

1	main major minor
2	main major minor

ROOT CAUSE DIAGNOSIS and RECOMMENDATIONS



The overall risk score for your farm is calculated by adding up the total number of potential risk boxes marked "Yes", and recording as a percentage. Farms should aim to have a risk score of 10% or below.

There are 41 possible risk boxes on the six cards so to calculate the %, divide the number by 0.41

The main suspected reason(s) for the bulk tank failure in this instance (Root Cause):			How confident is this diagnosis:	high/ medium/ Iow
Name of product:	Batch number:	Expiry date:	Prescribing vet:	
ID of cow:				
Evidence for this conclusion?				
Corrective actions already taken by producer:				

Actions advised	By what date	Already done Y/ N
1 You are recommended to undertake the MilkSure programme. Your farm should become MilkSure accredited, or renew its accreditation.	n	
2 You must inform your prescribing vet of the bulk tank failure. This is a R Tractor requirement. The prescribing vet must review your medicine use and m their own recommendations to prevent a further residue failure. You should share report with the vet.	ed nake are this	
3 You must record the bulk tank failure event in your farm's complaints real This is a Red Tractor requirement.	ecord.	
4		
5		
6		

Investigator name:	Signed:	Date:	