

CALF HEALTH CHECKLIST



FARMER OBJECTIVES/CONCERNS:

FARM:

VET:

DATE:

USING THE CHECKLIST

This checklist was developed by Owen Atkinson, Oliver Tilling, Georgina Thomas, Kat Hart and Dan Griffiths in association with MSD Animal Health to help vets and farmers work more closely to improve calf health.



Introduction

This checklist will help to focus on key processes combined with a veterinary clinician's expertise and knowledge to help to create a workable action plan for improved calf health on the farm.

Improved calf health will lead to reduced losses and improved growth rates which can improve farm profitability and job satisfaction.

Instructions for completing the Calf Health Checklist

- Complete all five sections of this checklist to identify strengths and weaknesses of the calf rearing unit's environment and processes.
- For each question, choose the most appropriate statement for the situation on farm by circling the score adjacent to the answer chosen.
- Add up the scores in each section to give you a total section score out of 20.
- Once all the sections are completed, on the back page plot the total section scores on the graph and sum all of the section scores to give your overall score out of 100.
- Discuss the results with the farmer and come up with an action plan for improvement with them.
- Repeat this checklist every 6-12 months to monitor progress.



SCAN TO VIEW AND DOWNLOAD THE INFORMATION PACK



SET GOALS AND MEASURE

1

QUESTION	ANSWER	SCORE
SETTING GOALS AND TARGETS		
Q1 How clear are the farm's goals for calf rearing?	No clear goals have been established yet	0
	Vague goals; not recorded or communicated	1
	Agreed and communicated with whole farm team and vet	2
Q2 How accessible are the youngstock records?	The records mean that performance is difficult to measure	0
	Not all targets are easy to check. Better records would be useful	1
	It is easy to check performance vs targets using records available	2
ACCURACY OF MEASURES		
Q3 How accurate are records of calf mortality?	Records unreliable and reasons for death not recorded	0
	Records easily accessible but reasons not always clear	1
	Very accurate and all reasons for deaths recorded	2
Q4 What means are available for recording growth rates?	None	0
	Weigh tape or height stick	1
	Weigh scales	2
Q5 What is the accuracy of calf milk replacer weight or milk volume fed, compared with that intended?	> 10% variance, or unknown	0
	5 - 10% variance	1
	< 5% variance	2
MEASURES		
Q6 What is the mortality rate (of live-born calves) day 0 to weaning?	> 8% or unknown	0
	5 - 8%	1
	< 5%	2
Q7 What serum antibody results are obtained from calves 1 - 7 days of age?	Not measured, or very infrequently	0
	< 85% ≥ 5.2 g/dl (total protein) or ≥ 20 ZST units	1
	≥ 85% ≥ 5.2 g/dl (total protein) or ≥ 20 ZST units	2
Q8 What weight of calf rearer pellets or concentrate is being eaten at weaning age?	< 1.5 kg/head/day or unknown	0
	1.5 - 2.5 kg/head/day	1
	> 2.5 kg/head/day	2
Q9 What is the average age at first calving?	> 28 months average, or unknown	0
	25 - 28 months average	1
	< 25 months, or ≥ 80% calve by 24 months	2
REVIEWING		
Q10 How regularly are calf health and growth performance results reviewed with vet?	Never	0
	Occasionally	1
	At least twice a year, or after every calving season	2
Total score for this section		/20

Good goals lead to good results

Use kitchen scales to weigh milk powder actually used

Measure colostral antibody transfer regularly using blood samples, for at least 10% of calves born annually

These targets are suitable for Holsteins; adjust for breed size

Beware an average figure might hide a large range

When a goal isn't being reached, record it, find out why and devise a plan to learn from the event



GOOD COLOSTRUM

2

QUESTION	ANSWER	SCORE
QUANTITY		
Q1 What is the usual volume of colostrum fed in the first 12 hours after birth?	Unknown	0
	< 10 - 12% bodyweight, or only 'topped up'	1
	≥ 10 - 12% bodyweight, and always ensured	2
QUALITY		
Q2 How soon prior to calving are dry cows and heifers brought onto the farm?	Often < 1 week	0
	Mainly 1 - 3 weeks	1
	Always ≥ 3 weeks	2
Q3 What proportion of dry cows have too long (> 90 days) or too short (< 21 days) dry periods?	> 5%	0
	1 - 5%	1
	< 1%	2
Q4 What is the provision for stored (emergency) colostrum?	None available	0
	Frozen untested colostrum or colostrum replacer	1
	Always a bank of frozen colostrum of known quality (tested)	2
QUICKLY		
Q5 Typically, how soon after birth is colostrum harvested from a cow or heifer?	> 12 hours	0
	4 - 12 hours	1
	< 4 hours	2
Q6 How quickly after birth does a calf typically receive its first feed of colostrum?	> 12 hours, or unknown	0
	4 - 12 hours	1
	< 4 hours	2
SQUEAKY CLEAN		
Q7 Is the udder hygienically prepared before collection of colostrum using clean (sterilised) milking equipment?	No, or unknown	0
	Sometimes	1
	Always	2
Q8 Are feeding equipment and storage vessels always sterilised between use?	No, or unknown	0
	Sometimes	1
	Always	2
Q9 Is colostrum milk (first two milkings) ever pooled?	Yes	0
	Sometimes	1
	Never, or yes but always pasteurised	2
QUANTIFY		
Q10 How often is colostrum quality measured?	Never, or rarely	0
	Sometimes	1
	Always	2
Total score for this section		/20

Feeding colostrum by teat, bucket or oesophageal feeder is the only certain way of ensuring adequate volume

Transition cow management and dry water provision can affect volume and quality of colostrum

How confident are all farm workers using a tube feeder? Training is very useful

Flush equipment with cold water to reduce hot water and disinfectant 'baking on' the colostrum. Avoid biofilms by using surfactants and drying well

Always store in a fridge, or freeze colostrum which is stored longer than one hour. Coliform bacteria numbers double every 20 minutes at 20°C

A colostrometer or refractometer should be used. A BRIX refractometer score ≥ 22 is the target



GOOD NUTRITION

3

LIFESTART
SETS LIFE PERFORMANCE

QUESTION	ANSWER	SCORE	
LIQUID NUTRITION			
Q1 How much calf milk replacer or whole milk is fed per calf per day at the peak feed rate?	< 750 g/h/d < 4.5 litres	0	
	750 - 899 g/h/d OR 4.5 - 6 litres	1	
	≥ 900 g/h/d > 6 litres	2	
Q2 What is the replacer quality after mixing? OR If whole milk, what form is the whole milk?	Visible sedimentation	0	
	A small amount of sedimentation	1	
	No sedimentation	2	
Q3 How consistent is milk feeding?	Waste milk, unpasteurised	0	
	Waste milk, pasteurised or bulk saleable milk, unpasteurised	1	
	Bulk saleable milk, pasteurised	2	
Q4 When is clean, fresh water made available to calves?	Inconsistent time, or mixing, or temperature, or volume	0	
	Occasional variations in mix / timing / temperature, or volume	1	
	Very: always same time, temperature, volume and mix	2	
SOLIDS NUTRITION			
Q5 What forage is available to calves?	Not available from birth	0	
	Available from birth, but restricted or unclean	1	
	Available from birth and cleaned at least daily	2	
Q6 How is starter feed offered to calves?	No forage available, or only from bedding	0	
	Long straw / fibrous hay available in racks	1	
	Good quality chopped straw or hay available	2	
Q7 How many times per day are calves fed milk or milk replacer?	Introduced after week one	0	
	Introduced in week one, topped up when required	1	
	Introduced in week one, with refusals removed and feed refreshed daily	2	
NUTRITION MANAGEMENT			
Q8 Are feeding equipment and vessels clean?	Once a day	0	
	Twice a day	1	
	More than twice a day	2	
Q9 What weight are calves when weaned?	No; milk residues and biofilms visible	0	
	Moderate; equipment washed but not disinfected	1	
	Yes; cleaned and disinfected after each feed	2	
Q10 What weight are calves at 12 weeks old?	< double birth weight, or unknown	0	
	≥ double birth weight	2	
	< triple birth weight, or unknown	0	
		≥ triple birth weight	2
Total score for this section		/20	

ONLY ASSIGN ONE SCORE FOR THIS QUESTION

If pasteurised whole milk is not fed immediately it must be cooled quickly and stored < 5°C in clean storage vessels to reduce bacterial growth

Calves will drink approximately 4 litres of water for each 1 kg of solid feed they eat

Increasing feeding frequency increases growth rates, increases post-weaning starter intake and increases first lactation yields



LOW INFECTION PRESSURE

4

QUESTION	ANSWER	SCORE
SEPARATION AND HYGIENE		
Q1 How long does the calf remain with the dam after birth?	> 12 hours	0
	2 - 12 hours	1
	< 2 hours	2
Q2 Are calves always removed from dam into a clean, disinfected pen?	No	0
	Mostly yes, or pens not always disinfected between calves	1
	Yes, always; pens pressure washed and disinfected and left to dry fully	2
Q3 Is there provision for sick calves to be treated separately?	No	0
	Yes, but adjacent to other calves	1
	Yes and isolated from other calves and cows	2
RESPIRATORY DISEASE		
Q4 What proportion of calves receive any pneumonia treatment before weaning?	> 20%, or unable to estimate	0
	10 - 20%	1
	< 10%	2
Q5 What proportion of calves show ANY signs of respiratory disease (respiratory health score > 0)?	> 20%	0
	5 - 20%	1
	< 5%	2
ENTERIC DISEASE		
Q6 What proportion of calves receive treatment for scour, including electrolyte, before weaning?	> 30%, or unable to estimate	0
	15 - 30%	1
	< 15%	2
Q7 What proportion of calves show ANY signs of enteric disease (scour health score > 0)?	> 20%	0
	5 - 20%	1
	< 5%	2
Q8 For Q4 and Q6, how well do treatment records correspond with medicine purchase records?	Not well; treatments under recorded / inaccurate	0
	Reasonably well; treatment records accurate	1
	Exactly correspond; treatment records excellent	2
VACCINATION		
Q9 What pneumonia vaccinations are used?	No vaccination used and disease is present	0
	Partial vaccination; or pneumonia deemed well controlled	1
	All calves vaccinated all year round	2
Q10 What scour vaccinations are used?	No vaccination used and disease is present	0
	Partial vaccination; or scour deemed well controlled	1
	All dams vaccinated all year round	2
Total score for this section		/20

Dams and calving pens can be important sources of pathogens

Include calves receiving antibiotics for prophylaxis or metaphylaxis

You will need to use the Calf Health Score Card for this question

You will need to use the Calf Health Score Card for this question

Better health is associated with farms where perception of the problem most closely matches the reality



HEALTHY ENVIRONMENT

5

QUESTION	ANSWER	SCORE
HOUSING AND MOVEMENTS		
Q1 How are pre-weaned calves grouped?	Calves in groups > 10 or with age range > 2 weeks	0
	Group size 3 - 10 and < 2 weeks age range	1
	Calves kept individually or in pairs	2
Q2 On average, how many times are calves moved between the removal from their dam and weaning?	More than once	0
	Once only	1
	They remain in the same pen/airspace until weaning	2
Q3 How sufficient is the lighting in the housing?	Unable to read ear tags from a distance (< 200 lux)	0
	Some darker areas (< 200 lux) but generally okay	1
	Easily able to read a newspaper at calf level (> 200 lux)	2
VENTILATION AND MOISTURE		
Q4 Smoke test: how long does a standard smoke pellet (5 cu. metres) take to clear from calf level?	> 2 minutes and inconsistent, depending on wind	0
	> 2 minutes, but clears consistently	1
	< 2 minutes and clears consistently	2
Q5 Are there draughts at calf level?	Yes, and there are no areas to shelter	0
	Yes, in some places, but with areas of shelter	1
	No	2
Q6 What is the maximum age range for animals sharing the same air space?	> 3 months and adults (> 12 months old) present	0
	> 3 months, but no adults in building or adjacent	1
	< 3 months and totally distant or upwind from adults	2
Q7 What is the humidity near the calves compared to outside?	> 5% points different, or unknown	0
	Similar; < 5% points different	2
Q8 How dry are the bedded areas?	Multiple damp areas and overall poorly drained	0
	Isolated patches of damp bedding but drainage present	1
	Dry beds with good drainage taking moisture from the shed	2
TEMPERATURE MANAGEMENT		
Q9 How many of these management changes are implemented during cold weather? • Calf jackets • Heat lamps for sick/newborn calves • Deeper dry bedding • Increased milk feeds/milk solids concentration	None	0
	1 - 2	1
	3 - 4	2
Q10 What is the average calf nest score for calves under 3 weeks old?	< 1.5	0
	1.5 - 2	1
	> 2 and no individual < 2	2
Total score for this section		/20

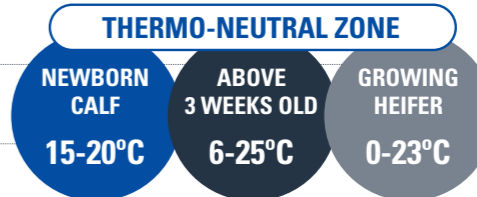
Pairing/grouping calves can increase feed intake and result in better socialisation

The smoke test allows an objective assessment of ventilation

Use a min/max thermometer and humidity meter

After kneeling in the bedding for 30 seconds, dry knees indicate well drained bedding

Score nesting when calves are lying down by seeing how well the legs are covered:
1 = all legs visible; scant bedding
2 = legs half visible; reasonable bedding
3 = legs totally covered with straw



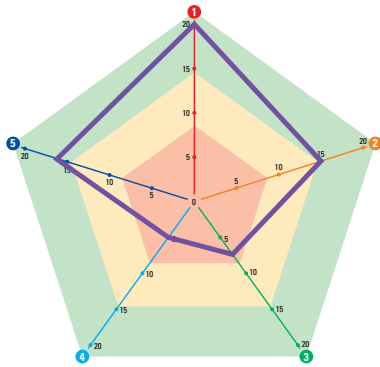
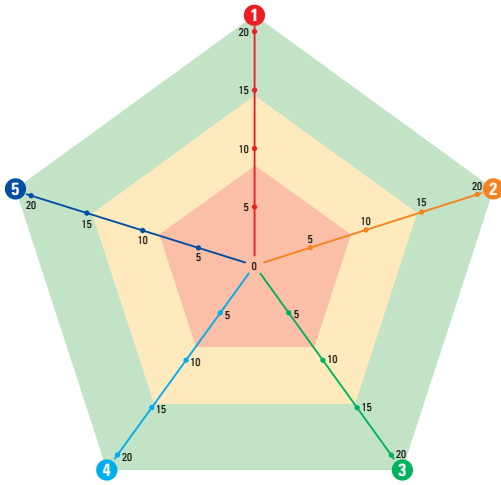
HERD SIZE:

HERD DISEASE STATUS:

BVD

IBR

LEPTOSPIROSIS



OVERALL CALF HEALTH SCORE

Mark on the graph the score for each section. Join the points on each axis together to make a pentagon as shown in the below example.

The overall size of the pentagon highlights the overall score and the shape indicates where further attention to calf health would be most useful – the higher the score for each section the better.

You can benchmark your farms by assessing overall score and then the scores for the 5 sections. This can be really useful to share insights between your farms for optimal calf health management.

OVERALL CALF HEALTH CHECKLIST SCORE

/100

In the example (left) the outcome of the graph highlights that the farmer is doing well with **goals and measures**, **good colostrum** and **healthy environment**, and should now focus on **good nutrition** and **low infection pressure** to improve calf health on their farm.

Action plan

Work with the farmer to come up with the action plan focusing on 5 key areas which have been highlighted by this checklist. This action plan should focus on what is to be achieved by whom and on what timescale.

ACTION	BY WHOM	BY WHEN
1.		
2.		
3.		
4.		
5.		

Repeating this Calf Health Checklist every 6-12 months is a great way to keep on track and check progress.

Review date: / /