

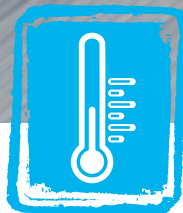
10 days to weaning

## Fine Tuning Calf Rearing

The **#CALFMATTERS**  
guide to continuous  
improvement in your calf  
health and performance  
from 10 days to  
weaning



Protect



Monitor



Treat



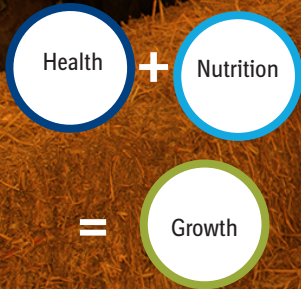
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[www.calfmatters.com](http://www.calfmatters.com)

 **Boehringer  
Ingelheim**



# WHAT ARE WE TRYING TO ACHIEVE?



# INTRODUCTION

Disease in calves impacts on performance as well as welfare. From the age group, ten days to weaning, the main disease focus is BRD and scour, where the outcome is related to the interaction between the pathogen, the calf's immunity and the environment. The aim is to provide the best possible set up for the calves and to push the balance in favour of the calf and not the ever-present pathogens. Most mortality and disease occurs during the pre-weaning period. This is also a period with the potential for the most efficient feed conversion ratio hence the importance of good nutrition and focussed disease management. The process starts with calf source - if purchasing aim for known sources and have a policy to minimise risk of introducing disease, minimising stress and implement biosecurity and isolation strategies.

Aim for Total Quality Management.

## IMMUNITY

The most important diseases in calves less than 6 months are BRD and scour. The common causes of BRD include RSV, PI3, *Mycoplasma bovis* and *Mannheimia haemolytica* with RSV and PI3 circulating on most farms<sup>1</sup>. Vaccination enhances immunity to specific pathogens by priming the immune system. Vaccinated calves are able to mount a robust response against pathogens they have been immunised against.

### SO WHAT?

Disease in young calves leads to decreased feed conversion rates, reduced growth and decreased lifetime performance. Protect your stock against the most common causes of death and disease to improve health, efficiency and growth.

### FACT

Mortality in calves is disproportionately high with 25% of on-farm deaths occurring within the first three months. This means 4% of calves die before three months of age with losses higher in the dairy (6%) than the beef sector (3%)<sup>2</sup>. Risk of BRD was reduced by 40% in heifers kept in fixed groups. This reduces risk of pathogen transmission especially where young calves are mixed with older ones<sup>3</sup>.

### FACT

Reduced environmental temperatures and time of year are associated with increased calf deaths, and if optimal conditions can be replicated would reduce mortality to <2%. This would account for over 37,000 fewer calf deaths which is a huge impact on welfare, productivity and ultimately sustainability<sup>2</sup>.

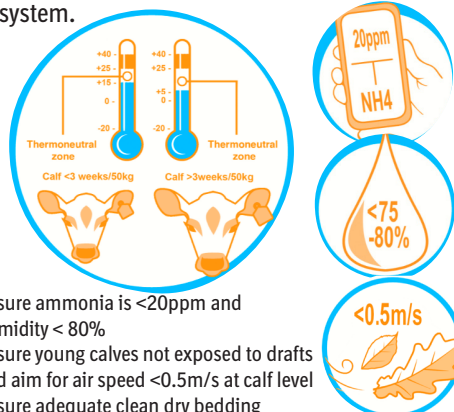
## ENVIRONMENT

The main factors are **hygiene**, **ventilation** - fresh air and drafts, **moisture** and **temperature**.

Housing needs to provide plenty of fresh air through good ventilation and avoid drafts at calf level. Good nutrition, adequate drainage to avoid increasing humidity, plenty of dry bedding and satisfactory overall hygiene are part of a good management system.

### SO WHAT?

Providing the best possible environment and reducing the stress on calves will result in better health and welfare and ultimately efficiency and productivity at this critical period of calf development.



- Ensure ammonia is <20ppm and humidity < 80%
- Ensure young calves not exposed to drafts and aim for air speed <0.5m/s at calf level
- Ensure adequate clean dry bedding
- Protect against cold chill - monitor temp and use bedding, jackets and heaters.

## PRE-WEANING NUTRITION\*

Feed efficiency is at its highest, 50%, during the pre-weaning period. Feeding calves more milk in the early days maximises genetic growth potential; prevents early growth checks and impacts on future health and lifetime performance. Aim for a minimum of 6 litres per day by day 7 (750-900g/day).

### FACT

Every 100g of average daily gain in pre-weaned calves is associated with 85-111kg more milk in the first lactation, so increasing DLW from 0.5kg to 0.8kg will result in up to 334kg more milk<sup>2</sup>.

If using twice a day feeding then give a maximum of 3l per feed, increasing the number of feeds to increase volume - aiming to double birth weight by weaning. Make sure the feeding routine is consistent and clean and disinfect feeding equipment to reduce pathogen load.

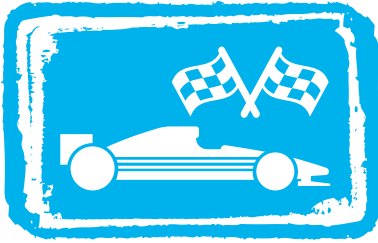
### SO WHAT?

To ensure target growth rates you need to utilise the efficiency of the pre-weaned calf to turn milk into growth and achieve target weights for heifers to calve down at 24m, and for beef calves to reach target weight in target time. Growth potential is "switched on" by feeding high levels of milk in early life.

Temperature	50kg calf <3 weeks	50kg calf >3 weeks	75kg calf
	*Additional milk replacer (L)		
20°C	0	0	0
10°C	0.9	0	0
0°C	1.8	0.9	1.4
-20°C	2.7	1.8	2.7

Table 1: Calf milk replacement requirements<sup>4</sup>

Information on housing available: [bit.ly/CalfmattersAHDBHousing](http://bit.ly/CalfmattersAHDBHousing)



## Fine Tuning Calf Rearing

### WHAT IS YOUR CURRENT PERFORMANCE?

Assess current operation performance – how is it measured? We're looking at calf health and performance from 10 days to weaning. Our measure is ultimately age and weight at weaning. This is impacted by growth rate and disease incidence, measured by antibiotic use.

### WHAT IS YOUR PERFORMANCE GOAL?

Daily live weight gain of  $>0.8\text{kg/day}^6$ . Antibiotic use targets are not defined as yet, but goals include 25% mg/kg reduction by 2024, and number of calves treated = 7.5 fewer treated/100 calves by 2024; (baseline 2020/21)<sup>7</sup>.

### WHAT IS THE MOST APPROPRIATE IMPROVEMENT PATH FROM CURRENT TO DESIRED PERFORMANCE?

Continuous improvement should be the focus rather than radical change. Focus on aspects that relate to the key performance objectives - **quality** of immunity, nutrition and environment, **dependability** of following the agreed process every day for every calf, **speed** of detecting issues, **flexibility** in the system so objectives are met whoever is on calf duty - so changes in process yield the best return on cost investment.

Using the #CALFMATTERS Calf Health and Performance from 10 Days to Weaning process flow chart overleaf, will support you to build a solid foundation of quality on which you can build layers of dependability, speed, flexibility and cost-savings.

### DOES IMPROVEMENT ALWAYS STICK?

Use the #CALFMATTERS calf health and performance from 10 days to weaning process flow chart to hone your process and make use of checklists to ensure improvement is bedded in and to avoid 'experienced user' errors. Remember, it is not the rate of improvement that is important, it's the momentum.

## WHY IMPROVE CALF REARING?

These key success factors for optimal calf health have remained consistent, and you'll already be undertaking many optimal calf rearing practices. Significant changes shouldn't be needed. Instead, the focus of any improvements will be on making small changes to current practices, to make the process of calf rearing, and in particular the early weeks of life, as efficient as possible. It's all about kaizen.

Think of the first weeks of a calf's life as a pit stop. Your farm may be performing well, but could performance be any better?

You may already be familiar with the Toyota Production System (TPS). Kaizen is one of the 12 pillars of the TPS and essentially means continuous improvement<sup>8</sup>.

#### FACT

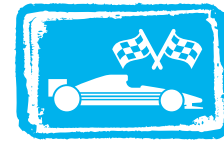
The NHS has instituted kaizen principles which have resulted in major improvements in patient care and efficiency<sup>8</sup>.



\*Always provide clean, fresh water & palatable starter feed. Calves should be eating  $\geq 1\text{kg/day}$  starter for 3 consecutive days by weaning.



This campaign is brought to you by Boehringer Ingelheim Animal Health, proud providers of the #CALFMATTERS range of solutions. Fine tuning your calf rearing, from good to great.



Fine Tuning  
Calf Rearing

OUR PRODUCTS



### Bovalto® Respi 3 & 4

For active immunisation of cattle in the absence of maternally derived antibodies against parainfluenza 3 virus, bovine respiratory syncytial virus and *Mannheimia haemolytica* serotype A1. Bovalto® Respi 4 is also indicated to reduce virus excretion due to infection with bovine viral diarrhoea virus.

- Targets the key respiratory pathogens in a single vial
- Ready-to-use for practical handling
- Small injection volume to reduce discomfort to calves
- Use from 2 weeks of age\*
- Rapid onset of immunity - 3 weeks post-primary course
- 6 months' continuous protection<sup>8</sup>



### Bovalto® Respi Intranasal

For the active immunisation of calves from the age of 10 days against bovine respiratory syncytial virus (BRSV) and bovine parainfluenza 3 virus (PI3V).

- Efficacious in the presence of maternal antibodies
- Early vaccination from 10 days of age
- Immunity during critical periods
- Unique vaccination experience



### Bovalto® Pastobov

For active immunisation of cattle to reduce clinical signs and lesions of *Mannheimia haemolytica* A1 induced respiratory disease.  
First injection: At the minimum age of 4 weeks.  
Second injection: 21-28 days later.



### Diakur® Plus

Nutritional supplement to stabilise water and electrolyte balance in young calves suffering from digestive disturbance, or that are under stress caused by changes in feed or the environment. A unique formula containing hydrophobic citrus fibre which supports the elimination of pathogenic bacteria from the intestinal tract. Supports fast absorption of electrolytes and water, and can be fed with milk, milk replacer or water.

\* For calves from immune dams or where the immune status of the dam is unknown, the vaccination scheme should be adapted at the discretion of the veterinarian to take into account potential interference of maternally derived antibodies with the response to vaccination.

1. Caldow (2011) UK Vet Livestock 16: 29-40.
2. Hyde et al. (2020) Journal of Dairy Science 103:2615-2623.
3. Johnson et al. (2021) Animals 11: 378-398.
4. Teagasc (2017) Calf Rearing Manual, Teagasc, Carlow.
5. Soberon et al. (2012) Journal of Dairy Science 95: 783-793.
6. Sherwin et al. (2016) In Practice 38:113-122.
7. RUMA (2020) Targets Task Force Report 2020.
8. Slack and Brandon-Jones (2018) Improvement in Operations and Process Management, 5th ed. Ch 12.

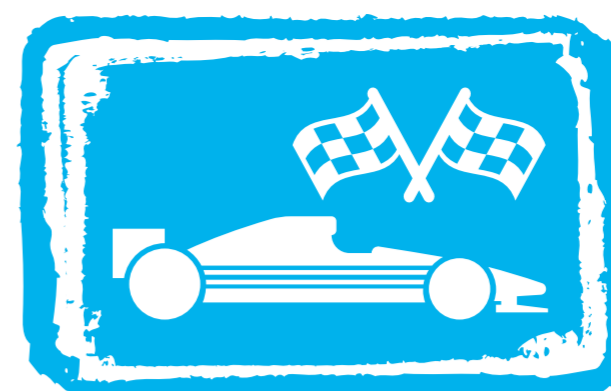
Bovalto® Respi Intranasal, nasal spray, lyophilisate and solvent for suspension contains bovine parainfluenza 3 virus (PI3V), modified live virus, strain Bio 23/A 10<sup>5.0</sup> - 10<sup>7.5</sup>TCID<sub>50</sub> and bovine respiratory syncytial virus (BRSV), modified live virus, strain Bio 24/A 10<sup>6.0</sup> - 10<sup>8.0</sup>TCID<sub>50</sub>. Bovalto® Respi 3 Suspension and Bovalto® Respi 4 Suspension for Injection contains inactivated bovine respiratory syncytial virus, strain BIO-24, inactivated bovine parainfluenza 3 virus, strain BIO-23 and inactivated *Mannheimia haemolytica*, serotype A1 strain DSM 5283. Bovalto® Respi 4 also contains inactivated bovine viral diarrhoea virus, strain BIO-25. Bovalto® Pastobov contains *Mannheimia haemolytica* type A1 antigen. UK: POM-V; IE:POM(E). Advice should be sought from the prescriber. Further information available in the SPCs or from Boehringer Ingelheim Animal Health UK Ltd, RG12 8YS, UK. UK Tel: 01344 746960 (sales) or 01344 746957 (technical). IE Tel: 012913985. Email:vetenquiries@boehringer-ingelheim.com. Use Medicines Responsibly. Diakur® Plus is a nutraceutical (non-medical product). Bovalto® is a registered trademark of the Boehringer Ingelheim Group. Diakur® is a registered trademark of Boehringer Ingelheim Vetmedica GmbH, used under licence. ©2021 Boehringer Ingelheim Animal Health UK Ltd. All rights reserved. Date of preparation: April 2021 BOV-0057-2021

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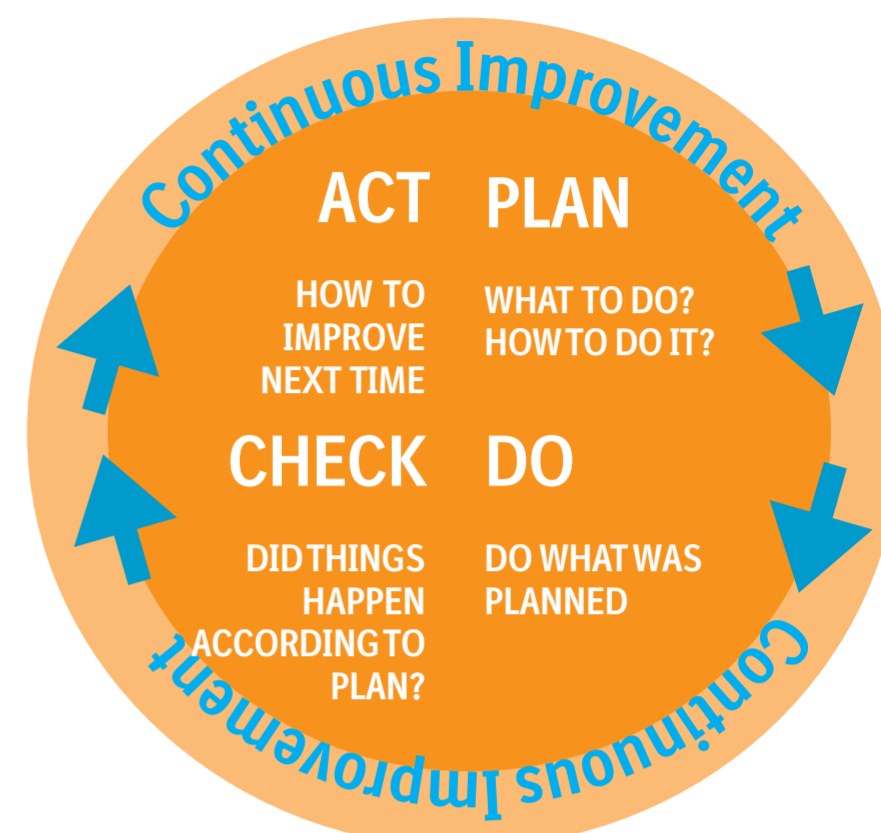
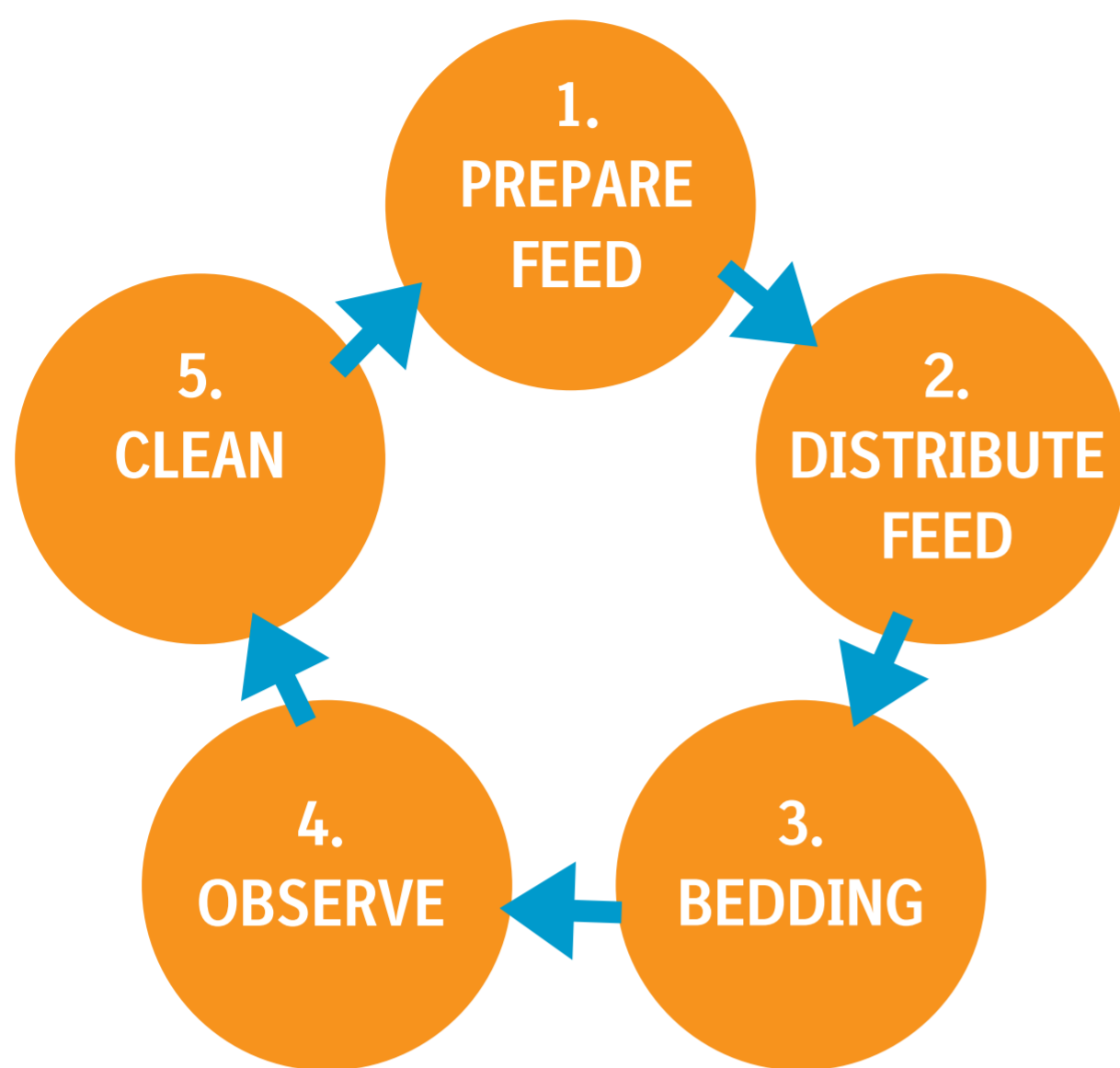
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# 10 DAYS TO WEANING PROCESS FLOWCHART



Fine Tuning  
Calf Rearing



### USEFUL LINKS

QR Code for Wisconsin calf scoring

Calfmatters CalfHealthGuide  
[bit.ly/CalfmattersHealthGuide](http://bit.ly/CalfmattersHealthGuide)

Disbudding  
[bit.ly/CalfmattersDisbudding](http://bit.ly/CalfmattersDisbudding)



## ABOUT YOUR PROCESS

## KIT NEEDED

## ACTION NEEDED

	ABOUT YOUR PROCESS	KIT NEEDED	ACTION NEEDED
1. PREPARE FEED	Needs for preparing feed: ..... How is feed stored and prepared: ..... Why?: ..... Other options: .....	..... ..... .....	..... ..... .....
2. DISTRIBUTE FEED	Needs for distributing feed: ..... How is feed distributed: ..... Why?: ..... Other options: .....	..... ..... .....	..... ..... .....
3. BEDDING	Needs for bedding: ..... How is bedding stored and distributed: ..... Why?: ..... Other options: .....	..... ..... .....	..... ..... .....
4. OBSERVE	Current time set aside for observing: ..... Current process for observing more closely: ..... Why?: ..... Other options: .....	..... ..... .....	..... ..... .....
5. CLEAN	Needs for cleaning: ..... How is kit and environment cleaned: ..... Why?: ..... Other options: .....	..... ..... .....	..... ..... .....

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