New indication
Mycoplasma bovis

TREAT CARE

ZELERIS®
Breathe & feel better

- Specially designed for BRD
- Eco-friendly Clas Vial[1]
- One single* injection

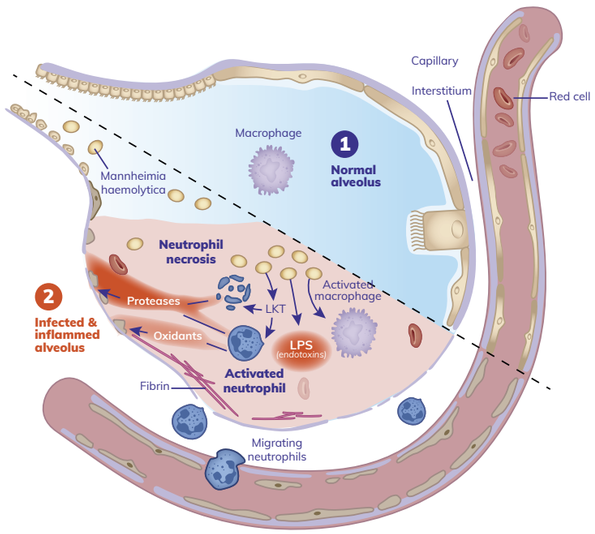
cevolution
PRACTICAL INNOVATION IN THE MANAGEMENT OF HEALTH

ceva

BRD a disease with significant health and economic impact

BRD treatment it is not only about infection

Pulmonary inflammation associated with BRD can be deleterious†



Fever & depression

Pain

Alveolar exudation

Lung lesions

The combination of an NSAID with an antibiotic can enhance the reduction of pyrexia, a faster clinical resolution of the respiratory signs and a decrease in lung lesions that ultimately translate into better productivity of affected cattle[2,3,4]

A complete BRD treatment should be based on :

1. **Antibiotic** to eliminate causal bacteria

2. **NSAID** to reduce inflammation and pyrexia

†Adapted from Diep, Binh An *et al.* "Polymorphonuclear Leukocytes Mediate Staphylococcus Aureus Panton-Valentine Leukocidin-Induced Lung Inflammation and Injury." Proceedings of the National Academy of Sciences 107, no. 12 (March 23, 2010): 5587–92. doi:10.1073/pnas.0912403107

BRD is associated with important effects on health and performance[5,6]

Reduced growth

Premature culling

Reduced fertility

Reduced milk production

Dystocia

BRD is a costly disease

CALF TYPE	LIFETIME COST OF BRD
Dairy Heifer	**£772**
Dairy-bred beef (moderate infection)	**£131**
Dairy-bred beef (severe infection)	**£327**
Suckled beef (moderate infection)	**£128**
Suckled beef (severe infection)	**£263**

The total economic lifetime cost of respiratory disease can be as high as £772 per case in dairy heifers[7]

BRD impacts milk production and growth

525 kg
milk in first lactation[8]

202 g
DLWG[7]

ZELERIS®

Ideally suited for the treatment of BRD

Florfenicol

Florfenicol as a mono product is a trusted antimicrobial for the treatment of BRD

Wide spectrum of activity including major BRD bacteria *Mycoplasma bovis, Mannheimia haemolytica, Pasteurella multocida,* and *Histophilus somni*

	Number of strains	MIC_{90}	Percentage of susceptible strains
M. haemolytica	149	1 µg/ml	**100%**
P. multocida	134	0.5 µg/ml	**100%**
H. somni	66	0.25 µg/ml	**100%**
M.bovis	223	2 - 8 µg/ml	**73.3%**

Limited cases of resistance[9]

M. bovis: There is currently no validated breakpoint (the concentration at which a bacteria is susceptible to treatment) for *M. bovis*, as such calculating accurate susceptibility/resistance percentages is not possible at this time. Florfenicol has a range of MIC_{90} values with 73.3% of isolates having an MIC_{90} ranging between 2 and 8 µg/ml[10].

High penetration in lung tissues where bacteria are located[11]

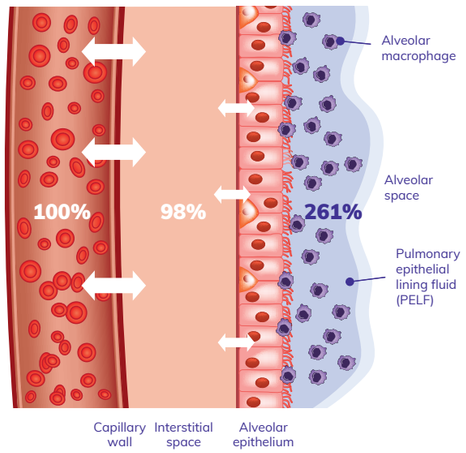


Diagram showing percentage penetration of florfenicol into lung tissues compared to plasma (100%)[11]

Fast and sustained action[12]

30 min

3 to 7 days

Well recognised field efficacy

Meloxicam

Meloxicam as a mono product is the U.K. vets' preferred choice of NSAID to treat the inflammation associated with BRD[13]

Reduce the impact of inflammation[3]
Decrease the level of lung lesions

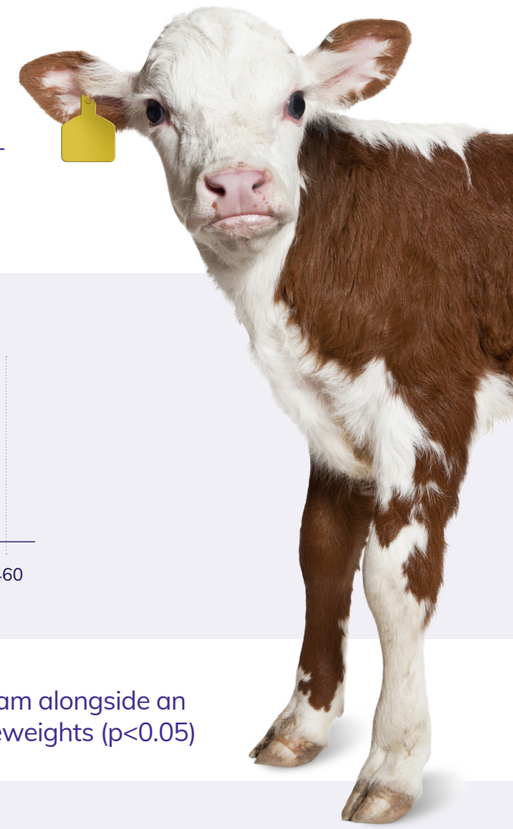
Treatment	Average % of lung tissue affected by inflammatory lesions
Saline	27.6 %
Antibiotic	22.6 %
Antibiotic + Meloxicam	**11.2 %**

A single shot as a result of the longer acting NSAID

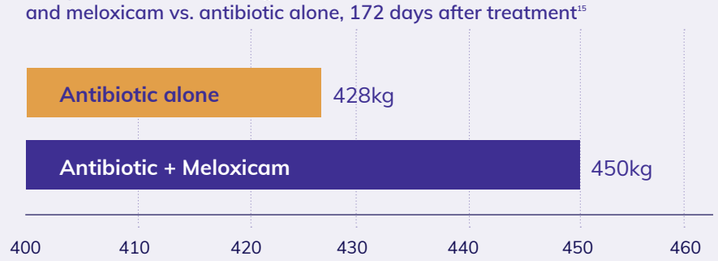
up to 3 days[14]

Speedy recovery and return to productivity

- **Control** of pyrexia
- **Faster clinical recovery** in the first days after treatment - **Improved** cattle welfare
- Optimised **long term productivity**



Comparison of the liveweights of animals treated with an antibiotic and meloxicam vs. antibiotic alone, 172 days after treatment[15]



172 days
after treatment

animals treated with meloxicam alongside an antibiotic achieved higher liveweights ($p<0.05$)

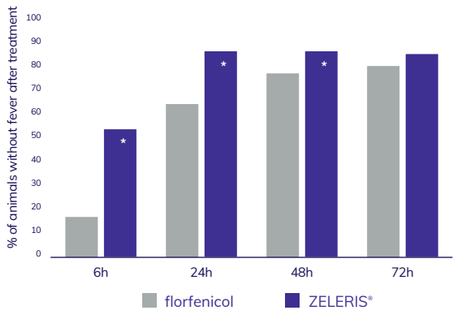
TREAT & CARE

ZELERIS®

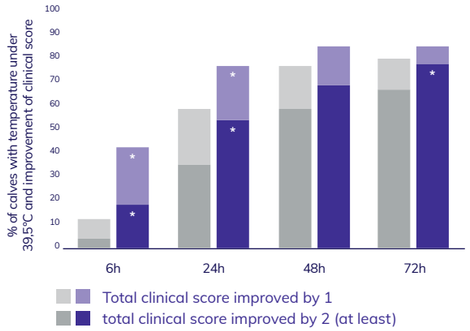
Fewer relapses

In field conditions, ZELERIS® achieved better results against BRD than florfenicol alone[16]

Zeleris vs. florfenicol alone in the control of fever



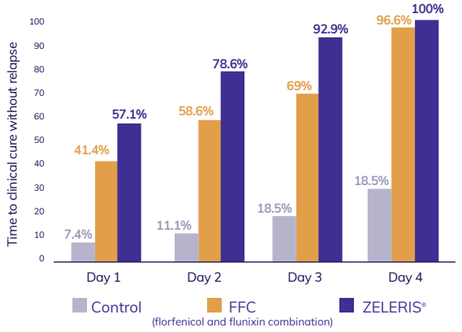
Zeleris vs. florfenicol alone for clinical recovery



Cure rate obtained with ZELERIS®
at D7 was higher than florfenicol alone (93.9% vs 88.5%)

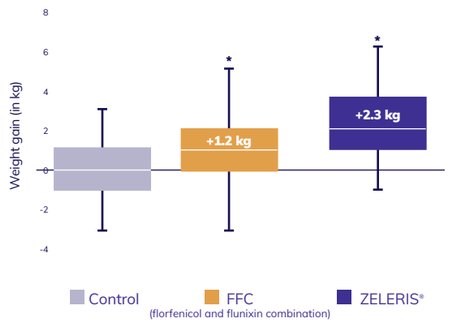
ZELERIS® can deliver enhanced benefits vs. other combinations[17]

Clinical cure



Time to clinical cure without relapse (cumulative %) after treatment with **ZELERIS®** or FFC. Calves are considered in relapse when cured on a specific day and not cured on the following day[17]

Body weight gain

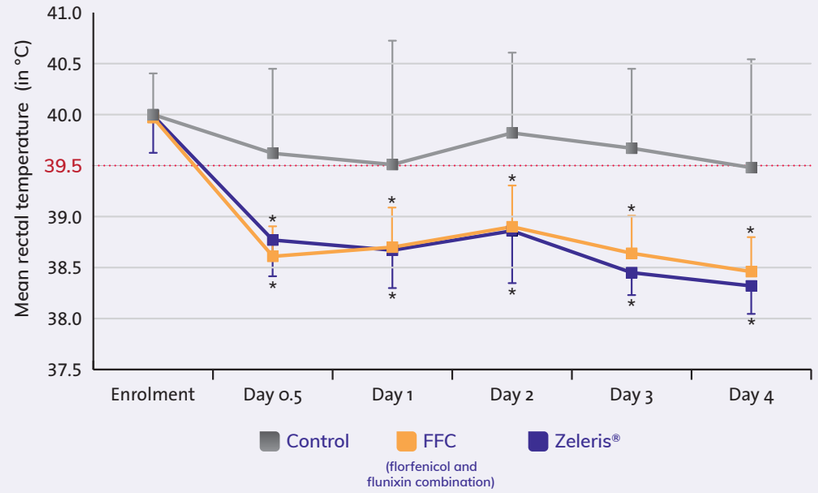


Bodyweight gain (in kg) between D-3 (3 days before challenge) and D4 in calves in calves experimentally challenged with *M.haemolytica*[17]

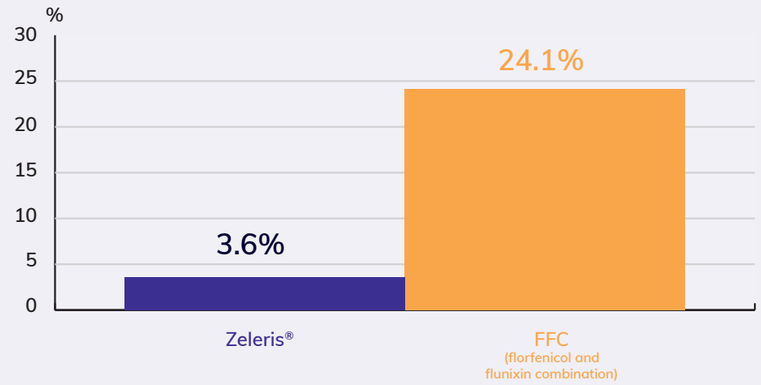
Calves that received Zeleris® were more rapidly cured
without relapses and tended to show a higher bodyweight gain

*statistically significant difference

Evolution of the rectal temperature



Graph showing the evolution of rectal temperature in calves with BRD following treatment with Zeleris®, an FFC combination product and a control group[17]



Graph showing the percentage of calves with relapses caused by pyrexia[17]

Through the course of this study, only 3.60% of calves (1/28) receiving **Zeleris®** had a relapse caused by pyrexia compared to 24.10% of calves (7/29) treated with FFC (p=0.052). **A single treatment with Zeleris reduces the pyrexia associated with BRD for longer and calves experience significantly fewer relapses vs. other combination products**[14]

*statistically significant difference

ZELERIS® proven efficacy

A combination specifically designed for the treatment of BRD

FLORFENICOL
ELIMINATES BACTERIA

+

MELOXICAM
MINIMISES INFLAMMATION

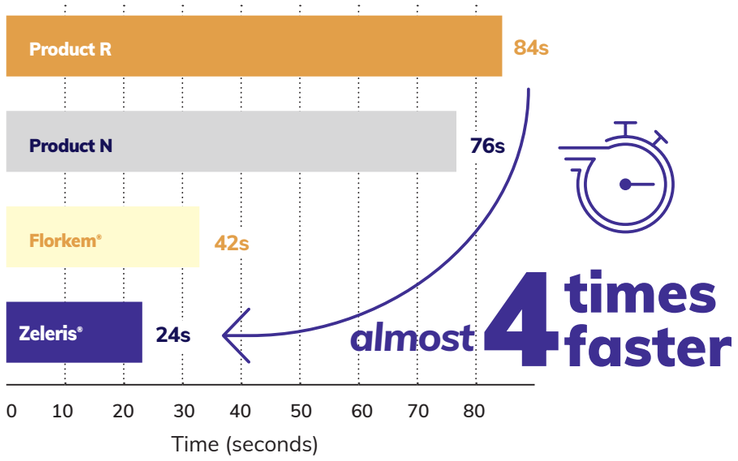
A convenient BRD solution

Practical dose rate: 1 ml / 10 kg
- Easy to remember
- Easy to calculate

Single shot*
- Simplify the treatment process
- Decrease stress and handling of treated animals

Good syringeability[18]

Graph showing the relative time needed to inject 10ml of each of four products[18]



Product R: a combination of 300 mg/ml florfenicol and 6.5 mg/ml flunixin
Florkem®: 300 mg/ml florfenicol
Product N: 300 mg/ml florfenicol

*refer to SPC

CLAS® the innovative vial

Shock resistance for less breakages and fewer losses[19]

Ergonomic "grip groove" for easier handling[20]

Eco-friendly for 33% less impact on the environment[2]

Lightweight material for easier transportation and handling[21]

Hi-tech multi-layered structure for product stability[22]

Designed for **practicality on farm**

TULAVEN®

Part of Ceva's BRD Treatment Range

Florkem®

Part of Ceva's BRD Treatment Range

Tulaven®

Tulaven® contains tulathromycin, an efficient and trusted antibiotic for the treatment and metaphylaxis of BRD[23,24]. It is characterised by intensive lung distribution, slow elimination, a dual mechanism of action, involving inhibition of protein synthesis at the ribosome level and anti-inflammatory properties[25]

Tulaven® persists above the MIC in tissues, enabling:[25,26]

- **15 days** of coverage for *P. multocida*
- **15 days** of coverage for *H. somni*
- **9 days** of coverage for *M. haemolytica*

Tulaven® is highly syringeable with a convenient low dose volume and and requires only a single subcutaneous administration in cattle

PINK EYE

Pink eye, the most common ocular disease of cattle, is caused by the bacterium, *Moraxella bovis*.
A **single dose** of tulathromycin administered subcutaneously, was found to be **an effective treatment**[27]

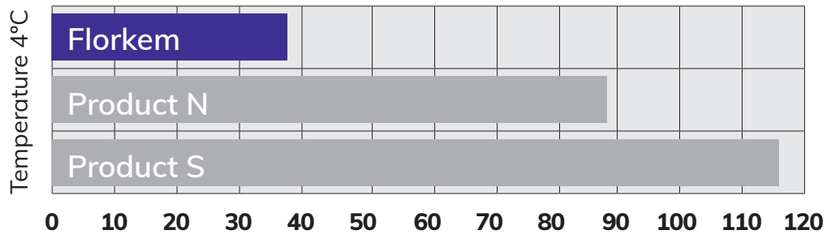
OVINE FOOT ROT

Ovine foot rot is a major cause of lameness, affecting the welfare of sheep. The main transmissible pathogen is the bacterium *Dichelobacter nodosus*. In a multicentre field trial, **a single dose** of tulathromycin **successfully treated** early stage foot rot in sheep[28]

Florkem®

Florkem® is easy to inject, even at low temperatures[29]**,** reducing the chance of dosing errors and possible muscle trauma

Graph to show the relative syringeability of three florfenicol products at 4°C using a 16G needle[29]



Cold proof

Shock resistant

Meloxidyl®

Part of Ceva's BRD Treatment Range

Allevinix®

Part of Ceva's BRD Treatment Range

Meloxidyl®

Meloxidyl® is indicated for use in:

- **acute respiratory infections** alongside appropriate antibiotic therapy
- **diarrhoea** in combination with oral re-hydration therapy to reduce clinical signs in calves of over one week of age and young, non-lactating cattle
- **acute mastitis** in lactating cows in combination with antibiotic therapy
- the relief of post-operative pain following **dehorning** in calves

72h Duration **of Action** ⋯⋯➤ A single injection **lasts up to 3 days**[14,17]

DOSAGE
2.5 ml per 100 kg bodyweight (IV or SC) as a single injection

IV	**milk withdrawal**	**5 days**	**meat withdrawal**	**15 days**
SC	**milk withdrawal**	**5 days**	**meat withdrawal**	**15 days**

OTHER SPECIES:

PIGS

- Symptomatic treatment of **non-infectious musculoskeletal disorders** to reduce lameness and inflammation
- Symptomatic treatment of **mastitis- metritis-agalactia syndrome (MMA)** in combination with appropriate antibiotic therapy
- **Single IM injection**
  2 ml per 100 kg body weight
- **Meat withdrawal:** 5 days

HORSES

- **Reduction of the inflammation and pain** associated with **acute and chronic musclo-skeletal conditions**
- **Relief from the pain** associated with colic
- **Single IV injection**
  3 ml per 100 kg body weight.

Allevinix®

- **Flexible administration:** the **ONLY** flunixin which can be administered to cattle I/V and I/M over 1 to 3 days, enabling follow-up doses to be given with minimal cost and hassle
- **Easy to remember dose rate:** 4ml per 100kg liveweight in cattle, aiding accurate dosing on-farm
- **Short milk withdrawal times, reducing losses:**
  - o 24 hours after I/V injection
  - o 36 hours after I/M injection
- **Fast acting:** C_{Max} is just 30 minutes following I/M injection, supporting a rapid recovery
- **100ml and 250ml vials available:** ideal for in-car or on-farm
- **Range of species indicated:** licensed to treat cattle, pigs and horses, so suitable for mixed practices

Licensed for I/V and I/M administration in cattle

Vetrimoxin® L.A.

Part of Ceva's BRD Treatment Range

Vetrimoxin® LA

With the responsible move away from CIAs and the increased use of more basic, yet effective antibacterials, **Vetrimoxin® L.A.** has been developed with ease of use in mind

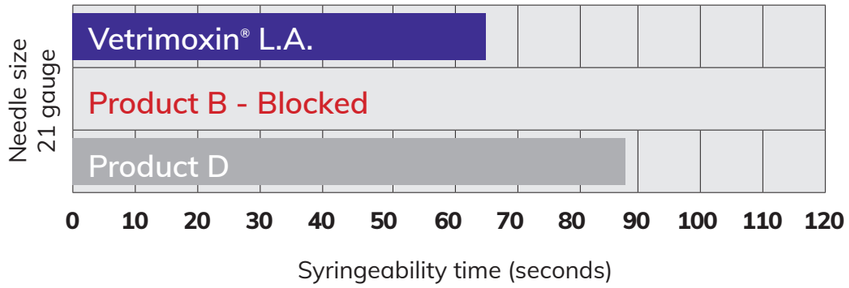
WHAT HAS VETRIMOXIN® L.A. GOT TO OFFER?

Rapid and long lasting efficacy

- The plasma peak is reached two hours after injection
- Duration of action up to 48 hours

Unparalleled syringeability[29]

- **Vetrimoxin® L.A.** is easy to inject, even through a 21 gauge needle, reducing the chance of needle blockage and possible muscle trauma



Syringeability of **Vetrimoxin® L.A.** at room temperature, compared to key competitors[30]

DOSAGE

1 ml per 10 kg bodyweight (IM)
corresponding to 15 mg/kg
Should be repeated after 48 hours

Low hassle, low waste

Withdrawal period

Vetrimoxin® LA has a relatively short milk withdrawal period of **3 days**, compared to other LA amoxicillin products for cattle

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Allevinix® 50 mg/ml solution for injection for cattle, pigs and horses. **Active ingredients:** each ml contains 50 mg flunixin (as meglumine). **Legal category:** UK POM-V
Florkem® 300 mg/ml solution for injection for cattle and pigs. **Active ingredients:** each ml contains 300 mg florfenicol. **Legal category:** UK POM-V
Meloxidyl® 20 mg/ml solution for injection for cattle, pigs and horses. **Active ingredients:** each ml contains 20 mg meloxicam. **Legal category:** UK POM-V
Tulaven® 100 mg/ml solution for injection for cattle, pigs and sheep. **Active ingredients:** each ml contains 100 mg tulathromycin. **Legal category:**UK POM-V
Vetrimoxin® L.A. 150 mg/ml solution for injection for cattle and pigs. **Active ingredients:** each ml contains 150 mg amoxicillin (as trihydrate). **Legal category:** UK POM-V
Zeleris® 400 mg/ml + 5 mg/ml solution for injection for cattle. **Active ingredients:** each ml contains 400 mg florfenicol and 5 mg meloxicam. **Legal category:** UK POM-V

For further information on any of the above products please refer to the SPC, datasheet or pack insert.

Prescription decisions are for the person issuing the prescription alone. Use medicines responsibly (www.noah.co.uk/responsible)

ZELERIS® in practice

One single* shot for a complete **BRD** treatment

Dose rate **1 ml / 10 kg**

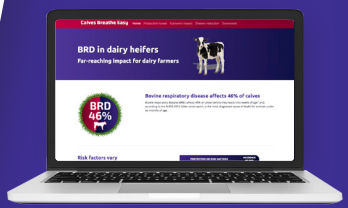
presented in a **CLAS® vial**

Available in **3 presentations**

BRD support

Ceva has developed a number of support and information tools to help you educate farmers as to the best way to manage and treat BRD

Bulletins



Website

Information

For information about any of the Ceva BRD treatment range or support items please contact your territory manager or call Ceva Animal Health on 01494 781510

*refer to SPC

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