Summary of Product Characteristics

1 NAME OF THE VETERINARY MEDICINAL PRODUCT

BOVICEF DC 250 mg Intramammary Suspension for Cattle

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each 3 g intramammary syringe contains:
Active substance:
Cefalonium 250mg (as cefalonium dihydrate).

For the full list of excipients, see section 6.1.

3 PHARMACEUTICAL FORM

Intramammary Suspension
Off-white to brownish suspension.

4 CLINICAL PARTICULARS

4.1 Target Species

Cattle (dry cow)

4.2 Indications for use, specifying the target species

For the treatment of subclinical mastitis at drying-off and the prevention of new bacterial infections of the udder during the non-lactating period of cows caused by *Staphylococcus aureus, Streptococcus agalactiae, Streptococcus dysgalactiae, Streptococcus uberis, Trueperella pyogenes, Escherichia coli* and *Klebsiella* spp.

4.3 Contraindications

Do not use in animals with known hypersensitivity to cephalosporins, other β-lactam antibiotics or to any of the excipients.

4.4 Special warnings for each target species

None.

4.5 Special precautions for use

Special precautions for use in animals
Use of the product should be based on susceptibility testing of the bacteria isolated from the animal. If this is not possible, therapy should be based on local (regional, farm level) epidemiological information about susceptibility of the target bacteria.
Use of the product should be in accordance with official, national and regional antimicrobial policies.
Use of the product deviating from the instructions given in the SPC may increase the prevalence of bacteria resistant to the cefalonium and may decrease the effectiveness of treatment with other beta lactams.
The feeding of waste milk containing residues of cefalonium to calves should be avoided up to the end of the milk withdrawal period (except during the colostral phase), because it could select antimicrobial-resistant bacteria within the intestinal microbiota of the calf and increase the faecal shedding of these bacteria.
The efficacy of the product is only established against the pathogens mentioned in section 4.2 "Indications for use".
Consequently, serious acute mastitis (potentially fatal) due to other pathogen species, mainly *Pseudomonas aeruginosa*, can occur after the drying off. Good hygienic practices should be thoroughly respected in order to reduce that risk; cows should be housed in a hygienic paddock far from the milking parlour and regularly checked several days after drying off.

Special precautions to be taken by the person administering the veterinary medicinal product to animals
Wash hands after use.
Penicillin and cephalosporins may cause hypersensitivity (allergy) following injection, inhalation, ingestion or skin contact. Hypersensitivity to penicillins may lead to cross-sensitivity to cephalosporins and vice versa. Allergic reactions to these substances may occasionally be serious.

- Do not handle this product if you know you are sensitised, or if you have been advised not to work with such preparations.

- Handle this product with great care to avoid exposure, taking all recommended precautions.
- If you develop symptoms following exposure, such as a skin rash, you should seek medical advice and show the Doctor this warning. Swelling of the face, lips or eyes or difficulty breathing are more serious symptoms and require urgent medical attention.

4.6 Adverse reactions (frequency and seriousness)

In very rare cases immediate hypersensitivity reactions were observed in some animals (restlessness, tremors, swelling of mammary gland, eyelids and lips). These reactions can lead to death.

The frequency of adverse reactions is defined using the following convention:
- very common (more than 1 in 10 animals treated displaying adverse reaction(s))
- common (more than 1 but less than 10 animals in 100 animals treated)
- uncommon (more than 1 but less than 10 animals in 1,000 animals treated)
- rare (more than 1 but less than 10 animals in 10,000 animals treated)
- very rare (less than 1 animal in 10,000 animals treated, including isolated reports).

4.7 Use during pregnancy, lactation or lay

Do not use during lactation.

4.8 Interaction with other medicinal products and other forms of interactions

Cephalosporins should not be administered concurrently with bacteriostatic antimicrobials. Concomitant use of cephalosporins and nephrotoxic drugs may increase renal toxicity.

4.9 Amounts to be administered and administration route

For intramammary use.
A single administration corresponding to the contents of one syringe (250 mg cefalonium) should be infused into the teat canal of each quarter immediately after the last milking of the lactation.
After milking is complete thoroughly clean and disinfect the end of the teat with the cleaning towel provided. Remove the cap fully by holding the barrel of the syringe firmly in one hand and with the thumb and push up along the length of the cap until the cap clicks off. Take care not to contaminate the nozzle. Do not bend the nozzle.

Insert the nozzle into the teat canal and apply steady pressure on the syringe plunger until the full dose has been delivered. Holding the end of the teat with one hand, gently massage upwards with the other to aid dispersion of the antibiotic into the quarter. After infusion it is advisable to dip the teats in an antiseptic preparation specifically designed for this purpose.

4.10 Overdose (symptoms, emergency procedures, antidotes), if necessary

Not applicable.

4.11 Withdrawal period(s)

Meat and offal:

- 21 days

Milk:

- 96 hours after calving if the dry period is higher than 54 days
- 58 days following the treatment if the dry period is below or equal to 54 days.

5 PHARMACOLOGICAL or IMMUNOLOGICAL PROPERTIES

Pharmacotherapeutic group: other beta-lactam antibacterials for intramammary use, first-generation cephalosporins.

ATCvet code: QJ51DB90

5.1 Pharmacodynamic properties

Cefalonium is an antibacterial drug of the first generation cephalosporin group which acts by inhibition of cell wall synthesis (bactericidal mode of action).
Three mechanisms of resistance to cephalosporin are known: reduced permeability of the cell wall, enzymatic inactivation and absence of specific penicillin binding sites. In Gram-positive bacteria and particularly staphylococci, the main cephalosporin resistance mechanism is through alteration of penicillin binding proteins. In Gram-negative bacteria resistance may consist in the production of (broad- or extended-spectrum) β-lactamases.
Cefalonium is active against: *Staphylococcus aureus, Streptococcus agalactiae, Streptococcus dysgalactiae, Streptococcus uberis, Trueperella pyogenes,Escherichia coli* and *Klebsiella* spp. MIC data was generated for these bacterial mastitis pathogens collected over the period 2014 to 2016. An overview of their *in vitro* susceptibility is presented in the table below:

Summary of *in vitro* susceptibility data for cefalonium against mastitis isolates collected during the period 2014-2016

Organism	**n**	**MIC range (µg/mL)**	**MIC_{90} (µg/mL)**
Staphylococcus aureus	246	≤0.03-≥64	0.25
Streptococcus agalactiae	44	≤0.03-0.06	≤0.03
Streptococcus dysgalactiae	135	≤0.03-≥64	≤0.03
Streptococcus uberis	209	≤0.03-≥64	0.06
Trueperella pyogenes	94	0.12-2	0.25
Escherichia coli	225	1-≥64	16
Klebsiella spp.	70	1-≥64	4

5.2 Pharmacokinetic particulars

Cefalonium is extensively but slowly absorbed from the udder and excreted primarily in the urine. Between 7 and 13% of the active substance is eliminated in urine on each of the first three days post dosing whilst daily excretion in faeces is < 1% over the same period.
Mean blood concentration remains fairly constant during approximately 10 days after dosing which is consistent with slow but prolonged absorption of cefalonium from the udder.
The long term persistence of cefalonium in the dry udder was examined over a time span of 10 weeks after infusion.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Aluminium Distearate
Liquid Paraffin

6.2 Major incompatibilities

None known.

6.3 Shelf-life

Shelf life of the veterinarymedicinal product as packaged for sale: 3 years.

6.4 Special precautions for storage

Do not freeze.

6.5 Nature and composition of immediate packaging

Single dose 3g white polyethylene intramammary syringe with a polyethylene cap.

Pack sizes:
24 intramammary syringes in a carton.
120 intramammary syringes in a bucket.
All pack sizes contain cleaning towels.

Not all pack sizes may be marketed.

6.6 Special precautions for the disposal of unused veterinary medicinal products or waste materials derived from the use of such products

Any unused veterinary medicinal product or waste materials derived from such veterinary medicinal product should be disposed of in accordance with local requirements.

7 MARKETING AUTHORISATION HOLDER

Zoetis Belgium S.A.
2nd Floor, Building 10
Cherrywood Business Park, Loughlinstown
Co Dublin
Ireland

8 MARKETING AUTHORISATION NUMBER(S)

VPA10387/003/001

9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorisation: 07 August 2015
Date of last renewal: 24 July 2020

10 DATE OF REVISION OF THE TEXT

July 2020