

Here's how Estrumate® can be used in managing reproduction in cattle, and in conjunction with other products from our comprehensive range

Indication*	Target treatment group	Dose and route	Recommended treatment scheme	Remarks
Estrus induction and synchronization	Dairy and beef heifers	2ml/animal, i.m.		Heifer should have obtained at least 75% adult body weight. Only animals with established cyclicity
	Dairy cows	2ml/animal, i.m.		Do not breed animals before 45 days post calving. Only animals with established cyclicity
Subestrus and silent heat	Beef cows	2ml/animal, i.m.		Do not breed animals before 45 days post calving. Less good results can be expected in non-cycling animals
	Cows and heifers	2ml/animal, i.m.		Temporary weaning of calf from 48h before breeding is recommended. Less good results can be expected in non-cycling animals
Treatment of luteal cysts and corpus luteum persistent	Cows	2ml/animal, i.m.		Temporary weaning of calf from 48h before breeding is recommended
Supportive treatment of uterine infections (endometritis, pyometra)	Cows	2ml/animal, i.m.		Detailed examination to assess the ovarian activity/status is recommended before treatment. Additional treatment with Receptal® stimulates growth of a new dominant follicle
Induction of calving	Cows	2ml/animal, i.m.		Estrumate® injection is recommended especially in animals with the presence of corpus luteum confirmed and in all cases of pyometra. Do not induce labor >7 days before the expected calving date. Increased frequency of placental retention can be observed

\* Please bear in mind that this indication list reflects the standard international product profile. For list of indications licensed for Estrumate® in your country consult the insert leaflet or contact our MSD Animal Health representative



**Estrumate®**  
(cloprostenol sodium)  
Prostaglandin analogue for Cattle  
Equivalent to 250 mcg cloprostenol/ml

**Description:** Estrumate® (cloprostenol sodium) is a synthetic prostaglandin analogue structurally related to prostaglandin F<sub>2α</sub>. Each ml of the colorless aqueous solution contains 263 mcg of cloprostenol sodium (equivalent to 250 mcg of cloprostenol).  
**Mode of action:** Cloprostenol causes functional and morphological regression of the corpus luteum (luteolysis) in cattle. In normal, non-pregnant cycling animals, this effect on the life span of the corpus luteum usually results in estrus 2 to 5 days after treatment. In animals with prolonged luteal function (pyometra, mummified fetus, and luteal cysts), the induced luteolysis usually results in resolution of the condition and return to cyclicity. Pregnant animals may abort depending on the stage of gestation.  
**Indications in cattle\*\*:** The induction of luteolysis in beef and dairy cattle. The luteolytic action of Estrumate® can be utilized to manipulate the estrous cycle to better fit certain management practices, to terminate pregnancies resulting from mis-matings, and to treat certain conditions associated with prolonged luteal function.  
**Safety and toxicity:** At 50 and 100 times the recommended dose, mild side-effects may be detected in some cattle. These include increased uneasiness, slight frothing at the mouth, and milk let-down.  
**Contraindications:** Estrumate® should not be administered to a pregnant animal unless the intention is to abort its calf.  
**Precautions:** As with all products for parenteral use, careful aseptic techniques should be employed to reduce the possibility of post-injection bacterial infection. Antibiotic therapy should be employed at the first sign of infection.  
**Dosage and administration:** Two ml of Estrumate® (500 mcg of cloprostenol) should be administered by **INTRAMUSCULAR INJECTION** for all indications in both beef and dairy cattle.  
**Special warning for operators:** For veterinary use only. Women of child-bearing age, asthmatics, and persons with bronchial and other respiratory problems should exercise extreme caution when handling this product. In the early stages, women may be unaware of their state of pregnancy. Estrumate® is readily absorbed through the skin and may cause abortion and/or bronchospasm; direct contact with the skin should therefore be avoided. Accidental spillage on the skin should be washed off immediately with soap and water.  
**Storage conditions:** Protect from light. Store at controlled room temperature (15°-30° C).  
**Presentation:** vials containing 2.0ml, 10ml, 20ml or 50ml.

\* The information shown here reflects the standard indications for the use of Estrumate® in cattle contained in the international product file. For details concerning the license conditions for the use of Estrumate® in your own country consult the product leaflet or contact your MSD Animal Health representative.

\*\* Estrumate® is also licensed in many countries for use in the management of reproduction in mares, sows and gilts, and small ruminants.

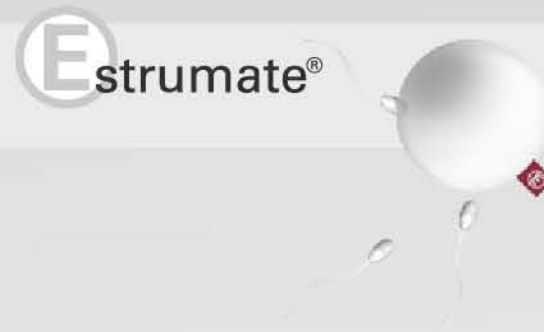


MSD Animal Health provides a wide range of products used for managing reproduction and the treatment of various reproductive disorders in cattle and small ruminants. To find out more about our reproduction and uterine health range visit: [www.Partners-in-Reproduction.com](http://www.Partners-in-Reproduction.com)



No matter where you are - a tool you can trust!





## Prostaglandins – an essential tool for the bovine practitioner

For decades, prostaglandins have played an integral part in the management of reproduction in cattle. Thanks to its luteolytic activity  $PGF_{2\alpha}$  is used to induce and synchronize estrus, as well as in the treatment of various reproductive disorders. Combining its luteolytic and uterotonic actions it has been used in the treatment of uterine disorders, and to induce calving.

## A trusted tool from MSD Animal Health

We are now presenting Estrumate<sup>®</sup>, for so many years the gold standard in efficacy and flexibility in the prostaglandin treatment of cattle, as a key element of our comprehensive portfolio for the management of reproduction and uterine health. It is backed by years of experience, extensive technical knowledge, and the support of our experts in the field.

During this time, Estrumate<sup>®</sup> has proved to be highly effective in veterinary use in various different types of cattle, practically all over the world.

**Treatment of various uterine disorders**

**Estrus induction & synchronization in heifers and cows:**

- for AI
- for natural service
- for ET

**Induction of calving**

**Estrumate<sup>®</sup>**

**Treatment of suboestrus and anoestrus**

**Treatment of luteal cysts and corpus luteum persistent**



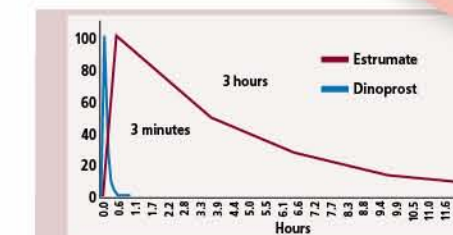
## Estrumate<sup>®</sup> (cloprostenol sodium) – reliability of a synthetic analogue

Estrumate<sup>®</sup> contains cloprostenol, a synthetic analogue of  $PGF_{2\alpha}$  characterized by a medium duration of half life (approx. 3 hours in contrast to just a few minutes in case of natural prostaglandin).

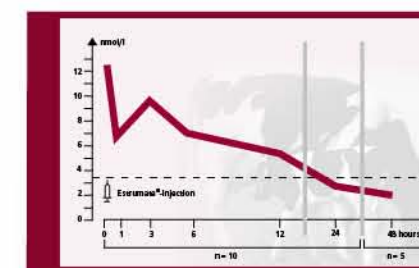
The prolonged half life and resulting more efficient and longer binding of prostaglandin-receptors is a direct result of the structure of the cloprostenol molecule and lower elimination time than observed for natural analogues. This ensures that after just one injection of Estrumate<sup>®</sup> an efficient luteolysis is achieved



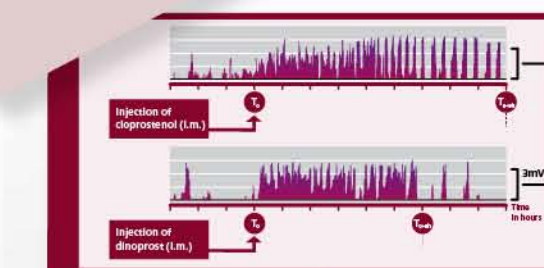
	Estrumate <sup>®</sup> (cloprostenol sodium)	Endogenous $PGF_{2\alpha}$ and natural analogues (e.g. dinoprost trometamate)
Half life	3 hours	(Very short) Few minutes
Clearance	Resistant to action of 15-hydroxy-dehydrogenase and 13,14-reductase	Almost completely degraded after one or two passages through the liver and/or lungs



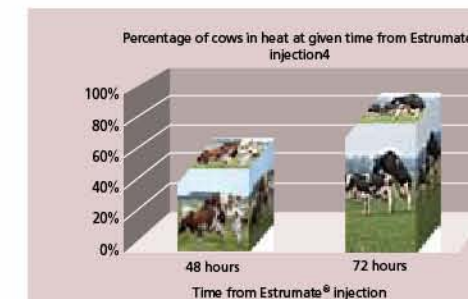
Longer residence of the  $PGF_{2\alpha}$  analogue in the system = more efficient receptor stimulation<sup>1</sup>



Rapid decrease of progesterone concentrations in the circulation promotes the onset of estrus with well-expressed behavioral signs at a highly predictable time<sup>2</sup>



Stimulation of strong and consistent contractions of the myometrium<sup>3</sup>



A trusted tool in estrus management and in the treatment of irregularities of the estrous cycle caused by persistent corpus luteum and luteal cysts

Important addition in the treatment of endometritis: elimination of immunosuppressive effect of progesterone<sup>5</sup> and improved uterine motility

