

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Lutalyse High Concentration 12.5 mg/ml solution for injection for cattle.

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each ml contains:

Active substances:

Dinoprost 12.5 mg (as dinoprost trometamol)

Excipients:

Qualitative composition of excipients and other constituents	Quantitative composition if that information is essential for proper administration of the veterinary medicinal product
Benzyl alcohol (E1519)	16.5 mg
Sodium Hydroxide (for pH adjustment)	
Hydrochloric Acid (for pH adjustment)	
Water for Injections	

Clear colourless to pale yellow solution.

3. CLINICAL INFORMATION

3.1 Target species

Cattle.

3.2 Indications for use for each target species

The veterinary medicinal product is indicated for its luteolytic and/or oxytocic effects in cattle.

The indications for use are:

1. To more effectively control the time of oestrus in cycling cows.
2. To treat cows which have a functional corpus luteum, but do not express behavioural oestrus (sub-oestrus or silent heat).
3. To induce abortion.
4. To induce parturition.
5. For treatment of chronic metritis and pyometra.
6. For controlled breeding in normally-cycling dairy cows:
 - o oestrus synchronisation
 - o ovulation synchronisation in combination with GnRH or GnRH analogues as part of fixed time artificial insemination protocols.

3.3 Contraindications

Do not use in animals suffering from either acute or sub-acute disorders of the vascular system, gastrointestinal tract or respiratory system.

Do not use when abortion or parturition is not intended.

Do not administer by the intravenous route.

3.4 Special warnings

None.

3.5 Special precautions for use

Special precautions for safe use in the target species:

1. Animals should not be treated if they suffer from either acute or sub-acute disorders of the vascular system, gastro-intestinal tract or respiratory system.
2. Pregnancy status should be determined prior to injection since the veterinary medicinal product has been demonstrated to result in abortion or parturition induction when administered at sufficiently high doses to many animal species.
3. The veterinary medicinal product is ineffective when administered prior to day five after ovulation.
4. If pregnant, the unlikely possibility of uterine rupture should be borne in mind, especially if cervical dilation does not occur.

Special precautions to be taken by the person administering the veterinary medicinal product to animals:

1. Prostaglandins of the F_{2α} type can be absorbed through the skin and may cause bronchospasm or miscarriage.
2. Care should be taken when handling the veterinary medicinal product to avoid self-injection or skin contact.
3. Women of child-bearing age, asthmatics and persons with bronchial or other respiratory problems should avoid contact with, or wear disposable plastic gloves when administering, the veterinary medicinal product.
4. Accidental spillage on the skin should be washed off immediately with soap and water.
5. Wash hands after use.

Special precautions for the protection of the environment:

Not applicable.

3.6 Adverse events

Cattle:

Very rare (<1 animal / 10 000 animals treated, including isolated reports):	Injection site infection ¹ Increased salivation Elevated temperature ²
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¹ May become generalized. Careful aseptic techniques should be employed to decrease the possibility of post injection bacterial infections. Aggressive antibiotic therapy, particularly covering clostridial species, should be employed at the first sign of infection.

² Following administration of five to ten times the recommended dose. However, changes were transient in all observed cases and were not harmful to the animals.

Reporting adverse events is important. It allows continuous safety monitoring of a veterinary medicinal product. Reports should be sent, preferably via a veterinarian, to either the marketing authorisation holder or the national competent authority via the national reporting system. See the package leaflet for respective contact details.

3.7 Use during pregnancy, lactation or lay

Termination of pregnancy is an indication for use.

3.8 Interaction with other medicinal products and other forms of interaction

None known.

3.9 Administration routes and dosage

Intramuscular use.

The dose for all indicated use in cattle is 2 ml (25 mg dinoprost). Do not administer more than 2 ml per single injection.

A single injection of the recommended dose of dinoprost activity is luteolytic provided a functional corpus luteum is present.

Full aseptic precautions must be taken. Use a sterile syringe and needle and make the injection through an area of clean dry skin. Care should be taken to avoid injection through wet or dirty areas of skin.

The rubber stopper of the vial may be safely punctured up to 20 times. Otherwise, automatic syringe equipment, or a suitable draw-off needle, should be used for the 100 ml vials to avoid excessive puncturing of the closure.

1. Oestrus control in cycling cattle.

Individual cows or heifers treated during dioestrus will normally return to oestrus and ovulate within two or four days after treatment. This may be employed to advantage as an effective aid towards managing oestrus and breeding in individual animals. (Note: Administration of the veterinary medicinal product to cattle within four days after oestrus is unlikely to result in luteolysis of the corpus luteum. Administration within 48 hours before onset of the next oestrus may not influence the timing of the oestrus after treatment).

2. Treatment of sub-oestrus (no visible oestrus) in cattle.

Individual cattle may have normal cyclical ovarian activity, without detectable behavioural oestrus; this occurs most frequently in the winter months, at peak lactation in high producing dairy cows and in suckler beef cows. If a corpus luteum is present and ovulation has not occurred in the previous four days, administration of the veterinary medicinal product will result in corpus luteum regression followed by return to oestrus and ovulation.

Breeding of cattle treated with the veterinary medicinal product for the above indication may be by natural service, artificial insemination at the usual time in relation to observed oestrus, or by fixed time insemination (78 hours or 72 and 90 hours post-treatment).

3. Induction of abortion in cattle.

The veterinary medicinal product may be used to terminate pregnancy in cattle through its luteolytic effect during those stages of pregnancy in which the corpus luteum is sensitive to its action and in which maintenance of pregnancy is dependent upon the corpus luteum as the sole source of progesterone.

Stage of gestation in cattle is an important factor influencing response. The percentage of animals responding to a single intramuscular injection decreases as the gestation period increases.

Approximate percentage responding are 90% within the first 100 days of gestation, 60% within 101-150 days of gestation and 40% in animals beyond 150 days of gestation. In the early stages of gestation, abortion will usually occur within one week, but as gestation length increases, the period to abortion following injection may also increase.

4. Induction of parturition in cattle.

The veterinary medicinal product has been used to induce parturition on or after day 270 of gestation. The interval from administration to parturition is one to eight days (average three days). Induction of parturition in cattle is indicated where there is a risk of oversize calves or where early parturition is desired. In addition, induction is indicated where pregnancies are complicated by miscellaneous conditions such as mummified or macerated foetuses, hydrops amnii, hydroallantois, etc. The veterinary medicinal product is indicated for expulsion of a dead foetus.

5. Treatment of metritis or pyometra in cattle.

In the cow chronic metritis frequently occurs as a sequel to an acute or sub-acute endometritis in the first two or three weeks post-partum; typically, there is an intermittent purulent or mucopurulent discharge. Pyometra is characterised by the retention of purulent fluid within the uterus.

Luteal regression through the administration of the veterinary medicinal product is followed by oestrus, during which the uterine environment is relatively unfavourable to the bacteria involved in the infection. Treatment may have to be repeated after 10-12 days where the condition is long standing.

6. Controlled breeding in cattle.

The veterinary medicinal product is indicated for its luteolytic effect in cattle. This luteolytic effect can be utilised to control the timing of oestrus in cycling cattle that have a corpus luteum. For normally cycling cows, at least 35 days after calving, the identified activity of the veterinary medicinal product permits a wide range of oestrus control programmes.

Programme I

1. Inject 2 ml Lutalyse High Concentration 12.5 mg/ml (25 mg dinoprost) intramuscularly;
2. Repeat the injection in 11 (10 to 12) days; then,
3. Inseminate 78 (75 to 80) hours after the second Lutalyse High Concentration injection. No oestrus detection or observation is required if animals were cycling normally when injected.

This programme is recommended for most herds with successful A.I. experience where females are known to be cycling.

Programme II

1. Inject 2 ml Lutalyse High Concentration 12.5 mg/ml (25 mg dinoprost) intramuscularly;
2. Repeat the injection in 11 (10 to 12) days; then,
3. Inseminate 72 (70 to 74) hours and 90 (88 to 96) hours after the second Lutalyse High Concentration injection. No oestrus detection or observation is required if animals were cycling normally when injected.

Double insemination has demonstrated increased pregnancy rates in some herds.

Programme III^a

1. Inject 2 ml Lutalyse High Concentration 12.5 mg/ml (25 mg dinoprost) intramuscularly;
2. Repeat the injection in 11 (10 to 12) days; then,
3. Inseminate upon detected oestrus.

Programme IV^a

1. Inject 2 ml Lutalyse High Concentration 12.5 mg/ml (25 mg dinoprost) intramuscularly;
2. Inseminate upon detected oestrus.

^a If it is unknown whether most animals to be treated are cycling, Programmes III and IV calling for oestrus detection should be followed rather than Programmes I and II calling for timed insemination. A clean-up bull may be used following any Lutalyse High Concentration programme, or the service may be repeated at the next oestrus, one cycle later, in animals that did not conceive at first service.

Practical application of these programmes will vary depending upon many factors, and in many cases these programmes may be altered to meet the requirements of the specific operation. For example, some veterinary surgeons may wish to design their own programmes for specific situations and schedules. The activity of the veterinary medicinal product may be easily adapted for such individualised approach. These changes should be carefully evaluated to ensure that they do not detrimentally affect the success of the breeding programme.

Programme V

The veterinary medicinal product may be used as part of a fixed time artificial insemination protocol to synchronise ovulation for normally-cycling dairy cows at any stage of lactation. The following protocols have been commonly reported in the literature:

- Day 0 – Inject GnRH or analogue
- Day 7 – Inject 2 ml Lutalyse High Concentration 12.5 mg/ml (25 mg dinoprost) intramuscularly
- Day 9 – Inject GnRH or analogue
- Artificial insemination 16–20 hours later or at observed oestrus if sooner.

Alternatively:

- Day 0 – Inject GnRH or analogue
- Day 7 – Inject 2 ml Lutalyse High Concentration 12.5 mg/ml (25 mg dinoprost) intramuscularly
- Artificial insemination and inject GnRH or analogue 60–72 hours later or at observed oestrus if sooner.

To maximise conception rates of cows to be treated, the ovarian status should be determined and regular cyclic ovarian activity confirmed. Optimal results will be achieved in healthy normally cycling cows.

GENERAL NOTES

Many factors contribute to the success and failure of reproduction management, and these are important when the time of breeding is to be regulated with the veterinary medicinal product. Some of these factors are:

1. Cattle must have a corpus luteum on the ovary of about five days or more of age in order for the veterinary medicinal product to be luteolytic, i.e. they are healthy and are undergoing normal oestrus cycles.
2. Semen of high fertility must be inseminated.
3. Semen must be inseminated properly.
4. Oestrus must be detected accurately if timed A.I. is not employed.
5. Physical facilities must be adequate to allow cattle handling without being detrimental to the animal.
6. Nutritional status must be adequate prior to and during the breeding season as this has a direct effect on conception and the initiation of oestrus in heifers or return of oestrus cycles in cows following calving.

3.10 Symptoms of overdose (and where applicable, emergency procedures and antidotes)

See Section 3.6 (Adverse events).

3.11 Special restrictions for use and special conditions for use, including restrictions on the use of antimicrobial and antiparasitic veterinary medicinal products in order to limit the risk of development of resistance

Not applicable.

3.12 Withdrawal periods

Meat and offal: 2 days.

Milk: Zero hours.

4. PHARMACOLOGICAL INFORMATION

4.1 ATCvet code: QG02AD01

4.2 Pharmacodynamics

The therapeutic use of dinoprost (natural prostaglandin F_{2a}) in food producing animals is to induce regression of corpora lutea. This response is observed in many animals. The intracellular mechanism by which dinoprost induces luteolysis remains unknown. Various other physiological responses to dinoprost are known. These include stimulation of smooth muscle including vascular, bronchial, uterine and gastrointestinal muscle.

4.3 Pharmacokinetics

Following administration, dinoprost tromethamine is rapidly dissociated to dinoprost (PGF_{2a}). This compound has an extremely short blood half-life of only a few minutes. Near complete clearance occurs on one to two passages through the liver or lungs. No accumulation of dinoprost or residues have been observed in blood following repeated daily injections in cattle. Highest tissue concentrations of dinoprost are observed at the injection site which depletes to background concentrations by 24-48 hr post-injection. Residue concentrations in milk of cows peak at 2 hr post-injection and decrease rapidly thereafter.

5. PHARMACEUTICAL PARTICULARS

5.1 Major incompatibilities

In the absence of compatibility studies, this veterinary medicinal product must not be mixed with other veterinary medicinal products.

5.2 Shelf life

Shelf life of the veterinary medicinal product as packaged for sale: 2 years.

Shelf life after first opening the immediate packaging: 28 days.

5.3 Special precautions for storage

This veterinary medicinal product does not require any special storage conditions.

5.4 Nature and composition of immediate packaging

Type I glass vial with a chlorobutyl rubber stopper and an aluminum seal with flip-off disc.

Cardboard box containing 1 vial of 10 ml, 20 ml or 100 ml.

Not all pack sizes may be marketed.

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

Medicines should not be disposed of via wastewater or household waste.

Use take-back schemes for the disposal of any unused veterinary medicinal product or waste materials derived thereof in accordance with local requirements and with any national collection systems applicable to the veterinary medicinal product concerned.

6. NAME OF THE MARKETING AUTHORISATION HOLDER

Zoetis Belgium S.A.

7. MARKETING AUTHORISATION NUMBER(S)

VPA10387/042/002

8. DATE OF FIRST AUTHORISATION

23/03/2018

9. DATE OF THE LAST REVISION OF THE SUMMARY OF THE PRODUCT CHARACTERISTICS

06/02/2026

10. CLASSIFICATION OF VETERINARY MEDICINAL PRODUCTS

Veterinary medicinal product subject to prescription.

Detailed information on this veterinary medicinal product is available in the [Union Product Database \(https://medicines.health.europa.eu/veterinary\)](https://medicines.health.europa.eu/veterinary).