



## REPRODUCTION MANAGEMENT

|                              |                                    |  |
|------------------------------|------------------------------------|--|
| <b>Weak or silent heats</b>  | Oestrous induction                 | 2 ml of Dalmazin between the 6 <sup>th</sup> and 18 <sup>th</sup> day of the cycle in presence of corpus luteum.<br>Heats usually occur within 48-60 hours.<br>Inseminate within 72 to 96 hours after treatment.<br>In the absence of heat: inject 2 ml of DALMAZIN 11 days after the first treatment. |
| <b>Heats synchronization</b> | Fixed-time artificial insemination | 2 ml of DALMAZIN twice in a 11 days interval.<br>Insemination 72-96 hours after the last injection.  |

## OVARIAN DYSFUNCTIONS

|  |   |   |
|--|---|---|
| <b>Luteal cysts</b>                            | Luteal cysts involution, oestrous cycle normalization | 2 ml of DALMAZIN<br>(if cysts persist repeat after 11 days)   |
| <b>Luteal cysts (persistent corpus luteum)</b> | Luteal tissue regression, heats induction             | 2 ml of DALMAZIN and insemination 72-96 h after injection.<br>In the absence of heat, perform a transrectal examination and inject 2 ml of DALMAZIN 11 days after the first treatment |

## OTHER INDICATIONS

|                                   |   |  |
|-----------------------------------|---|--|
| <b>Endometritis or pyometra</b>   | Drainage of the uterine cavity, heats induction                 | 2 ml of DALMAZIN. If necessary, repeat after 10-11 days.<br>Insemination 72-96 h after injection                                 |
| <b>Induction of parturition</b>   | Induction of parturition for medical reasons                    | After the 270 <sup>th</sup> day of gestation 2 ml of DALMAZIN.<br>Calving should occur within 30-60 h after treatment            |
| <b>Delayed uterine involution</b> | Complete uterine involution and uterine epithelium regeneration | After the initial treatment with 2 ml of DALMAZIN, it is possible to repeat one or two injection at 24 h intervals, if necessary |
| <b>Mummified fetuses</b>          | Elimination of mummified fetuses                                | 2 ml of Dalmazin. 3-4 days after treatment, the mummified foetus is aborted  |

**DALMAZIN for veterinary use, solution for injection**, synthetic prostaglandin for cattle. **Composition:** (+) - Cloprostenolum 75 µg/ml; **Excipients:** Chlorocresolum 1.0 mg, water q.s. for 1 ml injectable solution. **Indications: Cattle:** persistent corpus luteum, luteal cysts, oestrus synchronization, oestrus induction, induction of parturition, induction of abortion, interruption of pregnancy with fetal mummification, endometritis/pyometra and delayed uterine involution. **Dosage/Indications for use: Cattle:** dosage is 2 ml of DALMAZIN/animal (equivalent to 150 micrograms D-cloprostenol/animal). DALMAZIN must be administered by intramuscular route. **Warnings: Contraindications:** do not use in pregnant animals, except in cases of induction of parturition and interruption of pregnancy for medical reasons. **Precautions:** antiseptic measures must be observed. The injection site must be carefully cleaned and disinfected prior to administration. **Adverse effects:** the product is generally well tolerated. Even with a ten-fold overdose, no side effects were observed. In case of accidental overdose, symptomatic treatment is indicated. There isn't a known specific antidote. Prostaglandins can cause a local ischemia at the injection site, which increases the risk of infection with anaerobic bacteria. **Interactions:** DALMAZIN can't be simultaneously administered with non-steroidal anti-inflammatories because both drugs inhibit endogenous prostaglandins synthesis. **Withdrawal periods: Cattle:** Milk: 0 days; Meat and offals: 0 days. **Packings:** 1 vial of 10 ml vial - 1 vial of 20 ml vial - 5 vials of 10 ml. In some countries other packaging are available. For this purpose please contact the local distributor.

### References:

- Hospes et al., 2005. Estrus induction by means of prostaglandin injection in dairy cows - Comparison of the effectiveness of dl-vs. D-cloprosteol. *Tierarzte. Prax.* 33:395.
- Pérez et al., 2005. Reproductive performance evaluation of different prostaglandins for repeated synchronization program in postpartum dairy cows. 56<sup>th</sup> EAAP Meeting, Upsala.
- Re et al., 1994. Specific binding of DL-cloprostenol and Droprostenol to PGF<sub>2α</sub> in bovine corpus luteum and myometrial cell membranes. *J.Vet. Pharmacol. Ther* 17:455-458.
- Král et al., 1987. Remophan: Fetermination of biologica activity in heifers and cows. *Biopharm Research Institute of Biopharmacy and Veterinary Drugs. Czech Republic.*

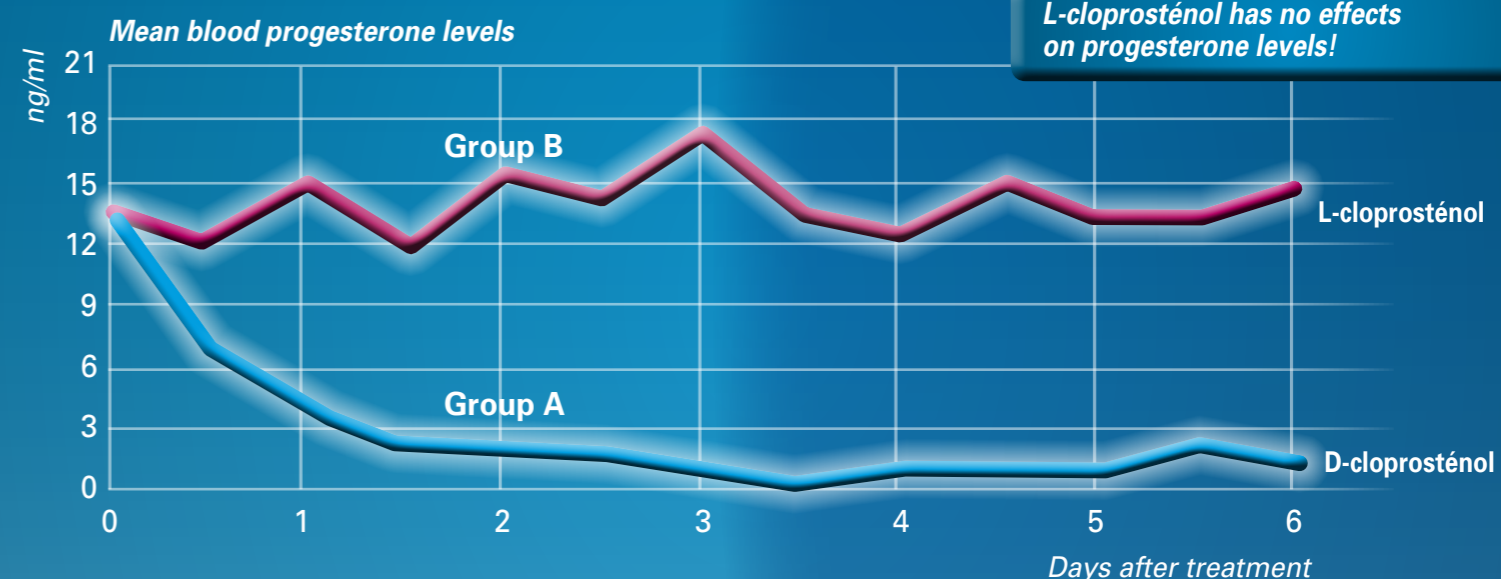


# Dalmazin<sup>®</sup>

Last generation Synthetic prostaglandin for cattle

## 100% DEXTROROTATORY CLOPROSTENOL 100% ACTIVE

**D-cloprostenol is 3-4 times more effective than racemic cloprostenol (DL-cloprostenol) in luteolysis induction\***



Only **dextrorotatory cloprostenol** causes a drop of the progesterone levels!



\*Source: Kral et al., 1989



# D-cloprosténol is 3.3 times more effective

than racemic DL-cloprostenol

## Dalmazin®

### D-cloprostenol

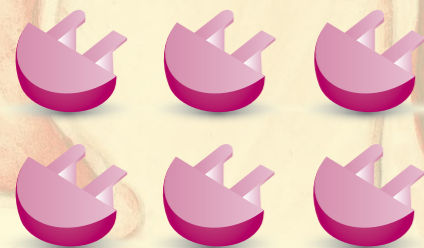
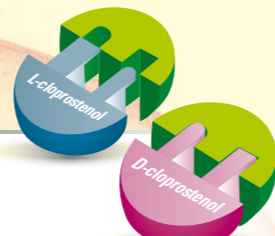
D-cloprostenol binds with high affinity to PGF2 $\alpha$  receptors. Uneffective L-cloprostenol is not included.



## RACEMIC

### DL-cloprostenol

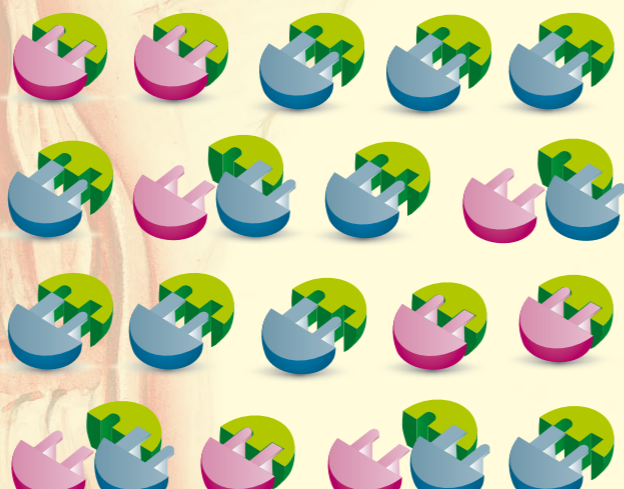
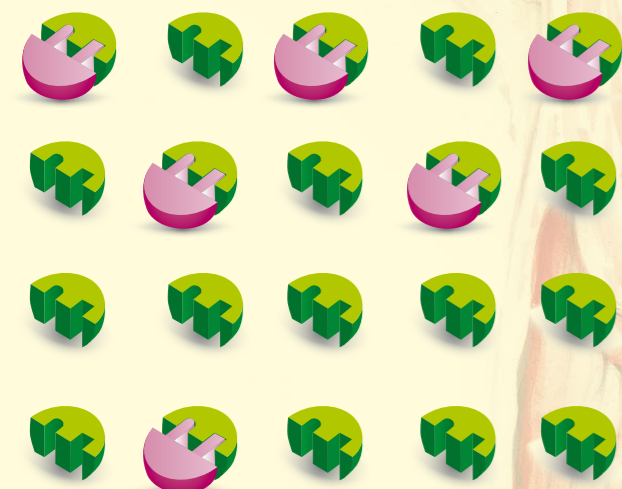
L-cloprostenol binds to PGF2 $\alpha$  receptors, not only without triggering a reaction, but also producing a block.



*In vitro* results showed that in cattle D-cloprostenol has an affinity to bind with corpus luteum receptors 150 times greater than DL-cloprostenol and a 10 times higher for myometrial receptors (Re et al., 1994)

Dextrorotatory: 75 µg/ml

Dextrorotatory and levorotatory: 250 µg/ml



PGF2 $\alpha$  receptors bound to D-cloprostenol

PGF2 $\alpha$  receptors blocked by L-cloprostenol

Luteolytic effect is exclusively caused by cloprostenol dextrorotatory enantiomer (D-cloprostenol), while this effect cannot take place with cloprostenol levorotatory enantiomer (L-cloprostenol) that seems also to have a luteotropic effect (Král et al., 1987).

To have the same effect, with the racemate, it is necessary to use 3.3 times more active substance.

# Dalmazin®

100% dextrorotatory cloprostenol

Physiologically, endogenous PGF2 $\alpha$  produced in the uterus, are only in the dextrorotatory form. That is why receptors present in the female genital tract bind functionally only to dextrorotatory enantiomers.



| Prostaglandin        | mg/animal | Active substance required quantity |
|----------------------|-----------|------------------------------------|
| Dalmazin             | 0,15      | 1                                  |
| Racemic cloprostenol | 0,50      | 3,3*                               |
| Tiaprost             | 0,75      | 5                                  |
| Etiproston           | 5         | 33,3                               |
| Alfaprostol          | 8         | 53,3                               |
| Luprostiol           | 15        | 100                                |
| Dinoprost            | 25.000    | 166                                |

Comparison of the effective dose of various prostaglandins in cattle

*D-cloprostenol is 3-4 times more effective than racemic mixture in luteolysis induction (Král et al., 1987).*

## Luteolysis and uterine motility control

DALMAZIN induces visible and time-concentrated estruses

Dalmazin - by far the most effective!!

- It contains 100% biologically active cloprostenol-form
- 3.3 times more potent than racemate
- Maximum potency with a minimum amount of active substance
- Lower incidence of side-effects



*The application of 150 µg of D-cloprostenol and 500 µg DL-cloprostenol gives comparable results, however better luteolytic results can be achieved with the use of D-cloprostenol (Hospes et al., 2005).*

*D-cloprostenol has the same effect of Dinoprost in heat symptoms induction, however better fertility results are obtained with D-cloprostenol (Perez et al., 1992).*