

## Contains Gonadorelin (as acetate) 100 µg / ml

### For use in:-

- Oestrus synchronization programs in combination with PgF2α (Estroplan).
- For the treatment of cystic ovaries.
- Prevention of delayed ovulation and
- Improvement of postpartum fertility in cattle

### PHARMACOLOGY

Gonadorelin is a synthetic decapeptide, identical to the endogenous gonadotrophin releasing hormone (GnRH). GnRH is synthesized and secreted in a pulsatile manner by the hypothalamus and is transported via the hypothalamic –hypophyseal portal circulation to its site of action, the anterior pituitary.

### ACTIONS

Gonadorelin induces the synthesis and release of gonadotrophins from the anterior pituitary such that LH and FH are released from the pituitary shortly after Gonadorelin administration. Lutenising Hormone (LH) and Follicular Stimulating Hormone (FSH) act on the ovary to stimulate maturation of ovarian follicles and ovulation.

### PHARMACOKINETICS

Gonadorelin is rapidly absorbed from the site of intramuscular injection. Following absorption, rapid distribution of Gonadorelin occurs with concentration at the site of action as well as in the pineal gland, posterior pituitary, ovaries, liver, and kidney greater than concentration of plasma.

The plasma half-life on Gonadorelin is approximately 20 minutes in cattle. Gonadorelin undergoes rapid metabolism by peptidase enzymes into smaller inactive peptides and aminoacids. Metabolites are primarily excreted in urine and expired air.

### CLINICAL REPORT

Clinical applications for Gonabreed injection in cattle are as follows

#### 1. Oestrus Synchronization

Oestrus synchronization protocols involving the use of Prostaglandin F2α (PgF2α) and Gonadotrophin releasing hormones (GnRH) have been subjected to extensive study in dairy herds around the world. Comparisons have been made between GnRH/PgF2α synchronization programs and a variety of existing reproductive management programs of varying levels of intervention. GnRH/pgF2α protocols have measured favorably against standard prostaglandin programs in terms of reproductive parameters such as pregnancy rate and calving to conception interval.

Unlike previously implemented synchronization protocols utilizing PgF2α only, application of the GnRH/PgF2α protocols described below results in synchronization of ovulation to a degree of precision that allows fixed-time insemination.

A reproductive program using fixed time insemination provides numerous benefits both in terms of reduced management inputs and economic advantages. Fixed-time insemination reduces managements input through the insemination of large groups of cows together, and by elimination of the need for oestrus detection activities in the first round. The benefits are magnified in situations where the level of oestrus detection is low. Economic benefits of a fixed-time insemination programs result from a reduction in calving to conception interval and a tighter calving pattern, parameters of particular significance under seasonal calving conditions.

GnRH/PgF2α protocols have the added advantage of demonstrated success for simultaneous treatment and synchronization of cows suffering from cystic ovarian disease and the ability to stimulate and synchronize the oestrus cycle of previously anovulatory cows.

The GnRH/PgF2α protocol that has received the most interest and study for its applicability to dairy cattle reproductive management may be summarized as follows:

- Day 1 GnRH (Gonabreed) administration
- Day 7 PgF2α (Estroplan) administration
- Day 9 GnRH administration (48 hours after PgF2α) Insemination 8-24 hours after 2<sup>nd</sup> GnRH (Ideally 16 hours).

NB: Any animal coming on heat after Day 0 Gonabreed administration can be inseminated and further injections of hormones stopped. After the 2<sup>nd</sup> GnRH dose, regardless of the presence or absence of visible oestrus, the animal should be inseminated.

The rationale behind the GPG (GnRH/PgF2α) protocol is as follows:

- I. The initial GnRH dose induces either ovulation or luteinization of the dominant follicle present at the time of treatment and the smaller follicles undergo atresia. A new follicular wave is subsequently recruited and a new dominant follicle gradually emerges.
- II. 7 days after treatment with GnRH, administration of PgF2α causes luteolysis of the GnRH-induced corpus luteum. The new dominant follicle is ready to ovulate 2-3 days later.
- III. The 2<sup>nd</sup> GnRH dose induces an LH surge which further synchronizes the dominant follicle resulting from ovulation of predictable timing, allowing fixed time Insemination 8-24 hours (ideally 16 hours later).

GnRH/PgF2α oestrus synchronization protocols are intended for lactating dairy cattle. Variable results are reported in the literature for the application of GnRH/PgF2α in heifers.

#### 2. Treatment of Cystic Ovaries

Cystic ovaries are an important infertility problem in dairy cattle. Ovarian cysts may be single or multiple, and of follicular or luteal origin. Clinical signs of ovarian cysts include irregular oestrus cycles, anoestrus and nymphomania. Diagnosis of ovarian cysts is by rectal palpation of the structures on one or both ovaries.

Ovarian cysts respond to the LH release induced by the treatment with Gonabreed injection, such that normal cystical activity can resume.

#### 3. Prevention of delayed ovulation

Delayed ovulation can result in reduced conception rates due to asynchrony between ova and sperm at the time of artificial insemination (AI). Administration of Gonabreed injection stimulates an LH surge and consequently induces ovulation, thereby preventing the problem of delayed ovulation.

#### 4. Improvement of postpartum fertility

Resumption of normal ovarian cyclical activity in the early postpartum period is essential to minimize the calving to conception interval, or "days open". Treatment of cows with Gonabreed injection during the first 40 days of postpartum period may initiate a resumption of cyclicity in acyclic cows and reduce the incidence of postpartum ovarian disorders.

### DIRECTIONS FOR USE

**CATTLE:** Injection to be given into the anterior half of the neck

1. **Cystic Ovaries:** 5ml (500µg Gonadorelin) by intramuscular injection.
2. **Prevention of Delayed Ovulation:** 2.5ml (250µg Gonadorelin) by intramuscular injection.
3. **Improvement of postpartum fertility:** 2.5ml (250µg Gonadorelin) by intramuscular injection.
4. **Oestrus synchronization:** 1ml (100ag Gonadorelin) per dose by intramuscular injection for example

Day 0 1ml Gonabreed injection  
Day 7 2ml Estroplan Injection  
Day 9 1ml Gonabreed injection  
Insemination 8-24 Hours (ideally 16 Hours) after 2<sup>nd</sup> GnRH.

NB: Any animal coming on heat after Day 0 Gonabreed administration can be inseminated and further injections of hormones stopped.

Estroplan Injection contains cloprostenol (as Sodium) 250µg/ML.

### WITHHOLDING PERIODS

Withholding periods:

MEAT – NIL; MILK – NIL.

### STORAGE AND DISPOSAL

Store below 25°C (in a cool dry place).

Protect from light.

Stability studies have demonstrated

Gonabreed injection is stable for at least 28 days following first use, providing aseptic technique is followed.

Following withdrawal of the first dose, use the remainder of the vial within 28 days or discard the unused portion.

**Dispose** of empty container by wrapping with paper and putting in garbage or burying it.

**PRESCRIPTION ANIMAL REMEDY  
KEEP OUT OF REACH OF CHILDREN  
FOR ANIMAL TREATMENT ONLY**

For a detailed prescription information covering all indications for GONAbreed, please refer to

**Available Packs : 20ml.**

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