SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

DIB 1.0 g Vaginal Delivery System for Cattle

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each vaginal delivery system contains:

Active substance:

Progesterone 1.0 g

Excipients:

For the full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Vaginal delivery system.

A white winged “V” shape device covered in progesterone-impregnated silicone, fitted with a green nylon tail to enable removal.

4. CLINICAL PARTICULARS

4.1 Target species

Cattle (cows and heifers).

4.2 Indications for use, specifying the target species

For the control of the oestrous cycle in cycling cows and heifers used in combination with prostaglandin F2α (PGF2α) or analogue, including synchronisation of oestrus, e.g. of donor and recipient animals for embryo transfer.

For induction and synchronisation of oestrus in fixed time artificial insemination (FTAI) protocols:
- In cycling cows and heifers: used in combination with PGF2α or analogue.
- In cycling and non-cycling cows and heifers used in combination with Gonadotropin releasing hormone (GnRH) or analogue and PGF2α or analogue.
- In non-cycling cows, used in combination with PGF2α or analogue and equine chorionic gonadotrophin (eCG).

4.3 Contraindications

Do not use in sexually immature heifers or in females with abnormal genital tracts e.g. freemartins.
Do not use in animals presenting with infectious or non-infectious diseases of the genital tract.
Do not use within the first 35 days after calving.
Do not use in pregnant cattle. See section 4.7

4.4 Special warnings for each target species

The progesterone treatment alone, according to dosage regimen proposed, is not sufficient to induce oestrus and ovulation in all cycling females. Progesterone based breeding protocols are reproduction management tools and should not replace adequate feeding and general health management. The choice of a specific protocol should be based on the requirements of the individual herd or cow and it is advisable to examine ovarian activity before using the progesterone treatment.

The response of cows and heifers to progesterone based synchronisation protocols is influenced by the physiological state at the time of treatment.

Responses to treatment can vary either across herds or across cows within herds. However, the percentage of cows displaying oestrus within a given period is usually greater than in untreated cows and the subsequent luteal phase is of normal duration.

4.5 Special precautions for use

Special precautions for use in animals

Animals in poor condition, whether from illness, inadequate nutrition, or other factors, may respond poorly to treatment.

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

Progesterone is a potent steroid hormone and may cause adverse effects on the reproductive system in cases of high or prolonged exposure. Pregnant women should avoid using this product. The device should be inserted using the product specific applicator.

Personal protective equipment consisting of gloves should be worn when handling the veterinary medicinal product during insertion and removal.
This product may cause eye irritation. Avoid accidental contact with the eyes. In case of accidental ocular exposure, flush the eyes thoroughly with water. Wash hands and exposed skin with soap and water after use.

4.6 Adverse reactions (frequency and seriousness)

Vaginal discharge associated with local irritation has been observed at removal of the insert, however, this has not been reported to affect conception rates following treatment. In target animal safety studies, this discharge was observed to resolve spontaneously within 7 days of device removal.

4.7 Use during pregnancy, lactation or lay

Laboratory studies in rats and rabbits, after intramuscular or subcutaneous administrations, and at repeated high doses of progesterone, have produced evidence of foetotoxic effects.

The safety of the veterinary medicinal product has not been established during pregnancy. Do not use in pregnant cattle or within the first 35 days after calving. Can be used during lactation.

4.8 Interaction with other medicinal products and other forms of interaction

None known.

4.9 Amounts to be administered and administration route

Vaginal use.

1.0 g of progesterone (1 device) per animal for 7-9 days (depending on indication). The following protocols could be used:

<u>For synchronisation of oestrus (including synchronisation of oestrus of donor and recipient animals for embryo transfer):</u>

- Insert one device into the vagina for 7 days.
- Inject a luteolytic dose of PGF2α or analogue 24 hours prior to device removal.
- In animals that respond to treatment the onset of oestrus generally occurs within 1-3 days after removal of the insert. Cows should be inseminated within 12 hours of first observed oestrus.

<u>For the induction and synchronisation of oestrus for Fixed Time Artificial Insemination (FTAI)</u>:

In cycling cows and heifers:
- Insert one device into the vagina for 7 days.
- Inject a luteolytic dose of PGF2α or analogue 24 hours prior to device removal.
- FTAI 56 hours after removal of the device.

In cycling and non-cycling cows and heifers:
- Insert one device into the vagina for 7- 8 days.
- Inject a dose of GnRH or analogue at device insertion.
- Inject a luteolytic dose of PGF2α or analogue 24 hours prior to device removal.

- FTAI 56 hours after removal of the device, or
- Inject GnRH or analogue 36 hours after device removal and FTAI 16 to 20 hours later.

In non-cycling cows:
- Insert one device into the vagina for 9 days.
- Inject a luteolytic dose of PGF2α or analogue 24 hours prior to device removal.
- Inject eCG at device removal.
- FTAI 56 hours after removal of the device, or inseminate within 12 hours following first observed oestrus behaviour.

Administration

The device specific applicator should be used for administration, following the procedure described below:

1. Ensure that the applicator is clean and disinfected using a non-irritant antiseptic solution before use.
2. Wearing sterile disposable plastic gloves, fold the arms of the device and load into the applicator. The arms of the device should protrude slightly from the end of the applicator. Care should be taken to avoid unnecessary or prolonged handling of the product to minimise transfer of the active substance to the operator's gloves.
3. Apply a small quantity of obstetrical lubricant to the end of the loaded applicator.
4. Lift the tail and clean the vulva and perineum.
5. Gently insert the applicator into the vagina, first in a vertical direction and then horizontally until some resistance is encountered.
6. Make sure the removal string is free, press the handle of the applicator and allow the barrel to move back towards the handle. This releases the arms of the device, which will then retain the device in the anterior vagina.
7. With the device correctly positioned, withdraw the applicator, leaving the removal string hanging from the vulva.
8. The applicator should be cleaned and disinfected before being used on another animal.

Removal

The device may be removed by gently pulling on the string. On occasions the string may not be visible from the outside of the animal, in such cases it may be located in the posterior vagina using a gloved finger. Withdrawal of the device should not require force. If any resistance is encountered a gloved hand should be used to ease removal.

If there is any difficulty in removal from the animal beyond that itemised above veterinary advice must be sought.

The device is intended for single use only.

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

Not applicable.

4.11 Withdrawal periods

Meat and offal: zero days.
Milk: zero hours.

5. PHARMACOLOGICAL OR IMMUNOLOGICAL PROPERTIES

Pharmacotherapeutic group: Sex hormones and modulators of the genital system, progestogens.
ATC vet code: QG03DA04.

5.1 Pharmacodynamic properties

The vaginal delivery system delivers progesterone at a controlled rate across the vaginal mucosa into the blood stream. Progesterone has a negative feedback action on the hypothalamo-pituitary axis, primarily on GnRH and consequently on LH secretion. Progesterone prevents the hormonal surge from hypophysis (FSH and LH) inhibiting follicle maturation and so suppresses oestrus and ovulation. After removal of the device, circulating blood levels of progesterone fall rapidly, allowing follicle maturation, oestrus and ovulation in a narrow window.

5.2 Pharmacokinetic particulars

The pharmacokinetic profile of progesterone when administered as a single device for 7-days to ovariectomised cows was characterised by a mean maximum concentration (C_{max}) in plasma of approximately 10.5 ng/ml achieved on average at 4.5 hours post-dosing (T_{max}). The mean Area Under the Curve (AUC) for the 7-day treatment period was 715.3 ng*hr/ml. Peak concentrations were followed by a decline in systemic exposure with an apparent mean elimination half-life ($t_{1/2}$) of 20 hours. After removal of the device, circulating blood levels of progesterone fall rapidly.

Progesterone is accumulated in fatty tissue due to its lipophilic properties, and in tissues/organs containing progesterone receptors. The liver is the main site of progesterone metabolism. The principal route of excretion is the faeces and the secondary route is the urine.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Titanium dioxide (E171)
Zinc stearate
Polydimethylsiloxane

Nylon Core
Nylon Tail

6.2 Major incompatibilities

Not applicable.

6.3 Shelf life

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

6.4 Special precautions for storage

The bag must be re-sealed using the zipper after opening.

6.5 Nature and composition of immediate packaging

The devices are packed in tri-laminar bags consisting of a polyethylene terephthalate (PET) external sheet, an aluminium middle sheet and a polyethylene internal sheet; in units of 10 per bag. Bags are re-sealable (zipper).

Package size:
Bag with 10 devices.

6.6 Special precautions for the disposal of unused veterinary medicinal product 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

Syn Vet-Pharma Ireland Limited
G24A Arclabs Research & Innovation Centre
Carriganore
Waterford
X91 XD96
Ireland

8. MARKETING AUTHORISATION NUMBER

Vm 54400/4002

9. DATE OF FIRST AUTHORISATION

16 April 2021

10. DATE OF REVISION OF THE TEXT

March 2025

Approved 21 March 2025
Gavin Hall