SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Doxycycline Hyclate VMD 500 mg/g Powder for Use in Drinking Water for Chickens

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

One gram contains:

Active substance:
Doxycycline hyclate 500 mg
Excipients:
For the full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Powder for use in drinking water
Homogeneous, fine, yellow powder.

4. CLINICAL PARTICULARS

4.1 Target species

Non-egg laying chickens.

4.2 Indications for use, specifying the target species

Treatment of the following specified infections of the respiratory tract and alimentary tract caused by micro-organisms susceptible to doxycycline.
Non-egg laying chickens:
Infections of the respiratory tract caused by *Mycoplasma spp, Escherichia coli, Avibacterium paragallinarum* and *Bordetella avium*.
Enteritis caused by *Clostridium perfringens* and *Clostridium colinum.*

4.3 Contraindications

Do not use in cases of hypersensitivity to tetracyclines or any of the excipients.
Do not administer to animals with severe liver or kidney insufficiency.

4.4 Special warnings for each target species

None.

4.5 Special precautions for use

Special precautions for use in animals
Due to variability (time, geographical) in susceptibility of bacteria to doxycycline, bacteriological sampling and susceptibility testing of micro-organisms from diseased animals on farm are highly recommended.
A high resistance rate of *E.coli* isolated from chickens, against tetracyclines has been documented. Therefore the product should be used for the treatment of infections caused by *E.coli* only after susceptibility testing has been carried out.

As eradication of the target pathogen may not be achieved, medication should therefore be combined with good management practices e.g. good hygiene, proper ventilation, no overstocking.

Special precautions to be taken by the person administering the veterinary medicinal product to animals
This product may cause contact dermatitis and/or hypersensitivity reactions if contact is made with the skin or eyes (powder and solution), or if the powder is inhaled. People with known hypersensitivity to tetracyclines should not handle the product. Wear impermeable gloves (e.g. rubber or latex) and an appropriate dust mask (e.g. a disposable half-mask respirator conforming to European Standard EN 149 (FFP2) or a non-disposable respirator to European Standard EN 140 with a filter to EN 143) when applying the product.
Do not smoke, eat or drink while handling the product. In the event of eye or skin contact, rinse the affected area with large amounts of clean water and if irritation occurs, seek medical attention. Wash hands and contaminated skin immediately after handling the product.
If you develop symptoms following exposure such as skin rash, you should seek medical advice and show this warning to the physician. Swelling of the face, lips or eyes, or difficulty with breathing are more serious symptoms and require urgent medical attention.

4.6 Adverse reactions (frequency and seriousness)

None known.

4.7 Use during pregnancy, lactation or lay

Laying birds:
Do not use in birds in lay and within 4 weeks before the start of the laying period.

4.8 Interaction with other medicinal products and other forms of interaction

Do not administer in combination with bactericidal antibiotics, such as penicillins and cephalosporins.

Doxycycline absorption may be reduced by the presence of high quantities of calcium, iron, magnesium or aluminium in the diet.

4.9 Amounts to be administered and administration route

Non-egg laying chicken: 25 mg doxycycline hyclate per kg bodyweight per day, corresponding to 50 mg of product per kg bodyweight, per day for 3-5 days.

Route of administration: For the administration through the drinking water, the exact daily amount of product should be calculated, based on the recommended dose, and the number and weight of the birds to be treated, according to the following formula:

$$\text{Mg product per litre drinking water} = \frac{\text{Mg product/kg bodyweight/day} \times \text{mean bodyweight (kg) of birds to be treated}}{\text{Mean daily water consumption (litre) per animal}}$$

To ensure a correct dosage, bodyweight should be determined as accurately as possible to avoid underdosing. The uptake of medicated water depends on the

clinical conditions of the birds and the concentration of doxycycline should be adjusted accordingly. The daily amount is to be added to the drinking water such that all medication will be consumed in 24 hours. Medicated drinking water should be freshly prepared every 24 hours. It is recommended to prepare a concentrated pre-solution – approximately 100 grams product per litre drinking water – and to dilute this further to therapeutic concentrations if required. Alternatively, the concentrated solution can be used in a proportional water medicator. Medicated water should be the only drinking source.
Use appropriately and properly calibrated dosing equipment.

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

Doxycycline has a high therapeutic index. The normal dose for oral use is 25 mg/kg bodyweight, where the LD50 for the most sensitive animal species is 1700 mg/kg bodyweight after oral administration.

4.11 Withdrawal period(s)

Meat and Offal: 5 days.
Not for use in birds producing or intended to produce eggs for human consumption.

5. PHARMACOLOGICAL PROPERTIES

Pharmacotherapeutic group: Antibiotics.
ATCvet code: QJ01AA02.

5.1 Pharmacodynamic properties

Doxycycline is a broad spectrum antibiotic. It inhibits the intracellular bacterial protein synthesis by binding on the 30S ribosomal subunits. As such, the access of aminoacetyl-tRNA to the receptor location of the mRNA-ribosomal complex is blocked. As a result the linkage of amino acids to the forming peptide chain is inhibited. Doxycycline inhibits bacteria, Mycoplasmas, Chlamydia, Rickettsia, and certain Protozoa.

Four resistance mechanisms acquired by microorganisms against tetracyclines in general have been reported: decreased accumulation of tetracyclines (decreased permeability of the bacterial cell wall and active efflux), protein protection of the bacterial ribosome, enzymatic inactivation of the antibiotic and rRNA mutations (preventing the tetracycline binding to ribosome). Tetracycline resistance is usually acquired by means of plasmids or other mobile elements (e.g. conjugative transposons). Cross resistance between tetracyclines has also been described. Due to the greater liposolubility and greater facility to pass through cell membranes (in comparison to tetracycline), doxycycline retains a certain degree of efficacy against microorganisms with acquired resistance to tetracyclines.

5.2 Pharmacokinetic particulars

Doxycycline is rapidly and almost fully absorbed from the intestine. Presence of food in the intestine has no influence on the absorption of doxycycline. The distribution of doxycycline throughout the body and the penetration in most tissues is good. Tetracyclines are virtually not metabolised after absorption. In contrast to other tetracyclines, doxycycline is primarily excreted via the faeces.

Steady state plasma concentrations of 2.05 ± 0.47 µg/ml were reached within 6 hours after start of the medication and varied between 1.28 and 2.18 µg/ml with a dosage of 25 mg/kg body weight during 5 days.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Citric Acid Anhydrous.
Lactose Monohydrate.

6.2 Major incompatibilities

None known.

6.3 Shelf life

Shelf life of the veterinary medicinal product as packaged for sale: 3 years.
Shelf life after first opening the immediate packaging: 28 days.
Shelf life after reconstitution according to directions: 24 hours.

6.4 Special precautions for storage

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

6.5 Nature and composition of immediate packaging

Packs of 100 g and 1 kg bags formed in a polyester/aluminium foil/polyethylene laminate.
Not all pack sizes may be marketed.

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

V.M.D. n.v.
Hoge Mauw 900
2370 Arendonk
Belgium

8. MARKETING AUTHORISATION NUMBER

Vm 19968/4001

9. DATE OF FIRST AUTHORISATION

29 November 2011

10. DATE OF REVISION OF THE TEXT

February 2018

PROHIBITION OF SALE, SUPPLY AND/OR USE

To be supplied only on veterinary prescription.

Approved 19 February 2018