HYDRODOXX® 500 mg/g Oral powder (doxycycline)

COMPOSITION

Content	HydroDoxx® 500 powder
Doxycycline	500 mg
Excipeints: Citric acid anhydrous	Up to 1 g

PHARMACOLOGICAL ACTION

Doxycycline is a bacteriostatic antibiotic that acts by interfering with the bacterial protein synthesis of sensitive species. Doxycycline is a semi-synthetic tetracycline derived from oxytetracycline. It acts on the subunit 30 S of the bacterial ribosome, to which is bound reversibly, blocking the union between aminoacyl-tRNA(transfer RNA) to the mRNA-ribosome complex, preventing the addition of new aminoacids into the growing peptide chain and thus interfering with protein synthesis. Doxycycline is active against, *Mycoplasma spp.* (chickens and *Pasteurella multocida* (fattening pigs). Sensitivity of Doxycycline against *Pasteurella multocida* strains isolated from fattening pigs in 2004 has been determined.

The most important mechanism of acquired resistance to tetracyclines is plasmid mediated, and is evidenced by a decrease in the cellular accumulation of the drug. Because the action mechanism of all tetracyclines has the same base, when resistance occurs, normally there is cross-resistance completed within its group. Resistance to tetracyclines may not only be the result of therapy with tetracyclines, but may also be caused by therapy with other antibiotics leading to selection of multi-resistant strains including tetracyclines. Both long term treatment and treatment for an insufficient length of time and/or sub-therapeutic dosages can select for antimicrobial resistance and should be avoided.

Doxycycline is bio-available after oral administration. When orally administered, it reaches values greater than 70% in most species. In fasting conditions bioavailability is around 10-15% greater than when the animal is fed. Doxycycline is well distributed through the body as it is highly lipid soluble. It reaches well irrigated tissues as well as peripheral ones. It accumulates in liver, kidney, bones and intestine; enterohepatic recycling occurs. In lungs it always reaches higher concentrations than in plasma. Therapeutic concentrations have been detected in aqueous humour, myocardium, reproductive tissues, brain and mammary gland. Plasma protein binding is 90-92%. 40% of drug is metabolized and largely excreted through faeces (biliary and intestinal route), mainly as microbiologically inactive conjugates.

INDICATIONS

Chickens (broilers): Prevention and treatment of Chronic Respiratory Disease (CRD) caused by *Mycoplasma gallisepticum.*

Fattening pigs: prevention and treatment of clinical respiratory infection caused by sensitive strains of *Pasteurella multocida*.

In case of any infective process, a bacteriological confirmation of the diagnosis is recommended, as well as a sensitivity test of the bacteria causing the process. The presence of the clinical disease in the herd should be established before preventive treatment is started.

CONTRAINDICATIONS

Do not use in animals with known hypersensitivity to tetracyclines. Do not use in animals with hepatic disorders. Do not use in animals with renal disorders. The product should not be used during pregnancy or lactation. Do not use in laying birds producing eggs for human consumption.

MODE OF ADMINISTRATION

Orally, yellow powder for use in drinking water.
The intake of medicated water depends on the clinical condition of the animals. In order to obtain the correct dosage the concentration of doxycycline has to be adjusted accordingly.

TARGET SPECIES

Chickens (broilers) and Pigs for fattening.

DOSAGE

In drinking water use.
Chickens (broilers): 20 mg of doxycycline (equivalent to 40 mg of the veterinary medicinal product)/ kg BW/ day for 3-5 days
Calculation of the product to be administered in 1L H_20:
mg product / L water= (40 mg product /kg b.w. /day * mean body weight of the animals to be treated (kg))/ water consumed by kg b.w.)
Fattening pigs: 10 mg of doxycycline (equivalent to 20 mg of the veterinary medicinal product)/ kg b.w/ day for 5 days.
Calculation of the product to be administered in 1L H_20:
mg product / L water = (20 mg product /kg b.w./day * mean body weight of the animals to be treated (kg))/ water consumed by kg b.w.)

For the preparation of the medicated water the body weight of the animals to be treated and their actual daily water intake should be taken into due account. Consumption may vary depending on factors like age, state of health, breed, husbandry system. To provide the required amount of active substance in mg per litre drinking water the following calculation should be made:

$$\frac{\text{...mg doxycycline/ kg body weight/ day} \times \text{Average body weight (kg) of the animals to be treated}}{\text{Average amount of drinking water/ animal (l)}} = \text{...mg doxycycline/ l of drinking water}$$

Sufficient access to the system of water supply should be available for the animals to be treated to ensure adequate water consumption. No other source of drinking water should be available during the medication period. Only sufficient medicated drinking water should be prepared to cover daily requirements. Medicated water should be replaced every 24 hours.

SIDE EFFECTS

Allergic or photosensitivity reactions may occur. Intestinal flora may be affected if treatment is very prolonged. This may result in digestive disorders. If suspected adverse reactions occur, treatment should be discontinued. Inform your veterinary surgeon if adverse reactions that are not indicated occur.

WITHDRAWAL PERIOD

Meat and offal
Pigs: 6 days
Chickens: 6 days
Not authorised for use in laying birds producing eggs for human consumption. Do not use within 4 weeks of onset of the laying period.

STORAGE

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

PACKING

Heat-sealed bag of 1 kg formed from polyester/aluminium/low density polyethylene laminate.
Cardboard drum containing 5 bags of 1 kg.
Cardboard drum containing 25 bags of 1 kg.
Bag of 1 kg formed from PE/Alu/PET laminate.

WARNING

Special precautions for use in animals:

Avoid administration in oxidised drinking equipment and long term usage to avoid creating resistance. Do not use at concentrations lower than 0.23 g of powder/l in drinking water with pH higher or equal to 7.5 to avoid precipitation. Do not add acid to the medicated drinking water.

Special precautions for the person administering the veterinary medicinal product to animals:

If you know you are allergic to the tetracycline class of antibiotics, special care should be taken when handling this product or the medicated solution. During preparation of drinking water, avoid skin contact with the product and inhalation. Wear impermeable gloves (e.g. rubber or latex) and an appropriate dust mask when applying 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 a 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. Do not smoke, eat or drink while handling the product.

Do not administer together with bactericidal antibiotics (penicillins, aminoglycosides, etc.). Do not administer together with antacids, kaolin and iron preparations. It is advised that the interval between the administration of other products containing polyvalent cations should be 1-2 hours because they limit the absorption of tetracyclines. Doxycycline increases the action of anticoagulants. The solubility of the product is pH dependent and will precipitate if mixed in alkaline solution. Do not store the drinking water in metallic containers.