SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Huvacillin 800 mg/g Powder for use in drinking water for chickens and pigs.

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each gram (g) contains:

Active substance:
Amoxicillin ……697 mg
(equivalent to 800 mg of amoxicillin trihydrate).

Excipients:

Qualitative composition of excipients and other constituents
Sodium carbonate
Sodium citrate
Silica colloidal hydrated

Powder for use in drinking water.
White to slightly yellow powder.

3. CLINICAL INFORMATION

3.1 Target species

Chickens (for reproduction, broiler, pullet), pigs

3.2 Indications for use for each target species

In chickens:
Treatment of respiratory tract and gastrointestinal infections.

In pigs:
Treatment of respiratory tract, gastrointestinal and urogenital infections, infections secondary to viral diseases and septicaemia.

3.3 Contraindications

Do not use in horses, rabbits, guinea pigs, hamsters, gerbils or any other small herbivores given that amoxicillin, as for all aminopenicillins, has a deleterious effect on caecal bacteria.
Do not use in ruminants.
Do not use in animals with hypersensitivity to penicillins or other ß-lactam antibiotics or to any of the excipients.
Do not use in animals with renal disease including anuria or oliguria.

Do not use in the presence of ß-lactamase-producing bacteria, as the veterinary medicinal product is not effective against them.

3.4 Special warnings

The uptake of medication by animals may be altered as a consequence of illness. In case of insufficient water/feed uptake, animals should be treated parenterally instead using a suitable injectable veterinary medicinal product prescribed by the veterinarian.
Cross-resistance has been shown between amoxicillin and other penicillins, in particular amino-penicillins in bacteria susceptible to amoxicillin. Use of the veterinary medicinal product/amoxicillin should be carefully considered when antimicrobial susceptibility testing has shown resistance to penicillins because its effectiveness may be reduced.

3.5 Special precautions for use

Special precautions for safe use in the target species:
Use of the veterinary medicinal product should be based on identification and susceptibility testing of the target pathogens. If this is not possible, therapy should be based on epidemiological information and knowledge of susceptibility of the target pathogens at farm level, or at local/regional level.
Use of the veterinary medicinal product should be in accordance with official, national and regional antimicrobial policies.
Use of the veterinary medicinal product deviating from the instructions given in the SPC may increase the prevalence of bacteria resistant to amoxicillin and may decrease the effectiveness of treatment with other penicillins, due to the potential for cross-resistance.
Narrow spectrum antibacterial therapy with a lower risk of antimicrobial resistance selection should be used for first line treatment where susceptibility testing suggests the likely efficacy of this approach.
Do not leave medicated water available to other animals.
Repeated and protracted use should be avoided by improving management practices through cleaning and disinfection.
Prolonged use of the veterinary medicinal product can induce intestinal bacterial flora alteration and favour the development of non-sensitive microorganisms.
The antimicrobial should not be used as part of heard health programmes.
Not for use for prophylaxis.

Special precautions to be taken by the person administering the veterinary medicinal product to animals:
Penicillins and cephalosporins may cause hypersensitivity (allergy) following injection, inhalation, ingestion or skin contact. Hypersensitivity to penicillins may lead to cross reactions to cephalosporins and vice versa. Allergic reactions to these substances may occasionally be serious.
This veterinary medicinal product may be irritating to the respiratory tract.
People with known hypersensitivity to beta-lactam antibiotics should avoid handling the veterinary medicinal product.
Handle this veterinary medicinal product with great care to avoid exposure, taking all recommended precautions.

Avoid inhalation of dust. Wear either a disposable half-mask respirator conforming to European Standard EN149 or a non-disposable respirator to European Standard EN140 with a filter to EN143.
Wear gloves when handling the veterinary medicinal product or the medicated water. Wash hands after use. Wash any exposed skin after handling the veterinary medicinal product or medicated water.
In the event of eye or skin contact , rinse the affected area with large amounts of clean water.
Do not smoke, eat or drink while handling the veterinary medicinal product. In case of accidental ingestion, immediately rinse the mouth with water and seek medical advice.
If you develop symptoms following exposure such as a skin rash, you should seek medical advice and show the doctor this warning. Swelling of the face, lips or eyes or difficulty with breathing are more serious symptoms and require urgent medical attention.

Special precautions for the protection of the environment:
Not applicable.

3.6 Adverse events

Chickens (for reproduction, broiler, pullet), pigs

Undetermined frequency (cannot be estimated from the available data)	Hypersensitivity reaction (varying from allergic skin reaction to anaphylactic shock)[1] Digestive tract disorders (vomiting, diarrhoea)

[1] Immediately stop administering the veterinary medicinal product.

Reporting adverse events is important. It allows continuous safety monitoring of a veterinary medicinal product. Reports should be sent, preferably via a veterinarian, to either the marketing authorisation holder or its local representative or the national competent authority via the national reporting system. See the package leaflet for respective contact details.

3.7 Use during pregnancy, lactation or lay

Pregnancy and lactation:
The safety of the veterinary medicinal product has not been established during pregnancy and lactation. Use only according to the benefit-risk assessment by the responsible veterinarian.
Laboratory studies in rats have not shown evidence of teratogenic effects.

3.8 Interaction with other medicinal products and other forms of interaction

Do not combine with bacteriostatic antibiotics.
Synergism with other beta-lactam antibiotics and aminoglycosides may occur.
Do not use simultaneously with neomycin since it blocks the absorption of oral penicillins.
Do not use together with antibiotics which inhibit bacterial protein synthesis as they can antagonise the bactericidal effect of penicillins.

3.9 Administration routes and dosage

In drinking water use, for chickens and pigs.

Chickens:
The recommended dosage is 23.0 mg amoxicillin trihydrate per kg bodyweight per day, equivalent to 20 mg of amoxicillin/kg of bodyweight/day (corresponding to 28.8 mg veterinary medicinal product/kg bodyweight/day) for 3 to 5 consecutive days.

Pigs:
The recommended dosage is 12.9 mg amoxicillin trihydrate per kg bodyweight, equivalent to 11.2 mg amoxicillin/bodyweight/day, (corresponding 16.1 mg veterinary medicinal product/kg bodyweight/day) for 3 to 5 consecutive days.

For the preparation of medicated water, the body weight of the animals to be treated and their actual daily water consumption should be taken into account. Consumption may vary depending on factors like species, age, state of health, breed and husbandry system (e.g. different temperature, different light regimes). In order to obtain the correct dosage, the concentration of amoxicillin has to be adjusted accordingly.
Based on the recommended dose and the number and weight of animals to be treated, the exact daily concentration of the veterinary medicinal product should be calculated according to the following formula:

$$\frac{\text{mg veterinary medicinal product / per kg bodyweight per day} \times \text{Average body weight (kg) of animals to be treated}}{\text{average daily water intake (L/animal)}} = \text{mg veterinary medicinal product per litre of drinking water}$$

To ensure a correct dosage, bodyweight should be determined as accurately as possible.
The required amount of veterinary medicinal product should be weighed as accurately as possible using suitability calibrated weighing equipment.
All animals to be treated should have sufficient access to the water supply system to ensure adequate consumption of the medicated drinking water.
In order to ensure consumption of the medicated water, animals should not have access to other water supplies whilst being treated.
Prepare the solution with fresh potable water.
Complete dissolution of the veterinary medicinal product should be ensured by gently mixing the veterinary medicinal product until fully dissolved. The homogeneity of the medicated drinking water should be kept during the administration to animals. Any unused medicated water should be discarded after 24 hours and the medicated drinking water replenished.
After the end of the medication period the water supply system should be cleaned appropriately to avoid intake of sub-therapeutic amounts of the active substance,
When using a water tank, it is recommended to prepare a stock solution and to dilute it to the target final concentration. Turn off the water supply to the tank until all the medicated solution is consumed.
For stock solutions, take care not to exceed the maximum solubility of the veterinary medicinal product, i.e. 3 g/L in soft/hard water at 5°C or 8g/L at 20°C.
When using a proportioner, adjust flow rate settings of the dosing pump according to the concentration of the stock solution and water intake of the animals to be treated.

Care should be taken that the intended dose will be completely ingested.

3.10 Symptoms of overdose (and where applicable, emergency procedures and antidotes)

No adverse events other than those listed in section 3.6 are reported. Amoxicillin has a wide margin of safety. In case of overdosing, the treatment should be symptomatic. No specific antidote is available.

3.11 Special restrictions for use and special conditions for use, including restrictions on the use of antimicrobial and antiparasitic veterinary medicinal products in order to limit the risk of development of resistance

Not applicable.

3.12 Withdrawal periods

Chickens: Meat and offal: 1 day.
Pigs: Meat and offal: 2 days.
Not for use in birds producing or intended to produce eggs for human consumption.

4. PHARMACOLOGICAL INFORMATION

4.1 ATCvet code:
QJ01CA04

4.2 Pharmacodynamics

Amoxicillin exerts its bactericidal, time-dependent effect by inhibiting the biochemical processes of bacterial cell wall synthesis, which occurs by selective and irreversible block of enzymes involved in this process. This interference with the final stage of peptidoglycan synthesis causes an osmotic imbalance due to the inadequate cell wall, which mainly affects active growing cells where bacterial cell wall synthesis process is very important.

Development of resistance *in vitro* against amoxicillin, as all penicillins, occurs slowly and stepwise.
There is complete cross-resistance between amoxicillin and other penicillins, in particular other
aminopenicillins. Both long treatment and sub-therapeutic dosages can select for antimicrobial resistance.
There are three main mechanisms of resistance to beta-lactams antibiotics: beta-lactamase production, production of penicillin binding proteins (PBP) and decreased penetration of the outer membrane. One of the most important mechanisms is the inactivation of penicillins by beta-lactamase enzymes, which inactivate the substance by hydrolysis of the beta-lactam ring. Beta-lactamase enzymes can be acquired via plasmids or can be constitutive in the bacterial chromosome. These genetic structures are able to encode for resistance for many antibiotics and can be transferred to other bacteria. The use of extended spectrum beta-lactam drugs (e.g. aminopenicillins) might lead to the selection of multi-resistant bacterial phenotypes (e.g those producing extended spectrum beta-lactamases (ESBLs)).

Plasmids responsible for ESBL production frequently carry genes encoding resistance to other drug classes, thus reducing the options in the treatment of ESBL-producing organisms. Plasmid-mediated beta-lactamases TEM-1 has become widespread in *E. Coli*, whereas other ESBLs have emerged among *Enterobacteriaceae*, including food-borne microorganisms (e.g. *Salmonella* spp.).

4.3. Pharmacokinetics

Amoxicillin is well absorbed after oral administration and it is stable in acid conditions. The absorption is rapid and independent from food intake. Peak plasma concentrations are reached rapidly in most animal species, from 1 to 2 hours after administration. Amoxicillin binds sparingly to plasma protein (24% in swine), which facilitates its distribution to the body fluids and tissues. The metabolism of amoxicillin takes place in the liver and consists of hydrolysis of the beta-lactam ring, leading to the formation of the inactive amoxicilloic acid. Amoxicillin is primarily excreted via the kidneys, mainly in an unchanged form. Smaller amounts can be excreted via bile through faeces.
Amoxicillin is rapidly and better absorbed after oral administration in chickens than in mammals.

5. PHARMACEUTICAL PARTICULARS

5.1. Major incompatibilities

In the absence of compatibility studies, this veterinary medicinal product must not be mixed with other veterinary medicinal products.

5.2. Shelf life

Shelf life of the veterinary medicinal product as packaged for sale: 2 years
Shelf life after first opening the immediate packaging: 6 months
Shelf life after dissolution in drinking water according to directions: 24 hours

5.3. Special precautions for storage

Do not refrigerate or freeze.
Store in the original container in order to protect from light and moisture.
Keep the container tightly closed in order to protect from moisture.
Store in a dry place.

5.4. Nature and composition of immediate packaging

100 g jar made of high density polyethylene closed with a seal made of low density polyethylene/ polyethylene terephthalate/aluminium and a screw cap made of polypropylene.
100 g thermo-sealed sachet made of low density polyethylene/aluminium/polyethylene terephthalate.
Zipped 500 g bag made of low density polyethylene/aluminium/polyethylene terephthalate.
Zipped 1 kg bag made of low density polyethylene/aluminium/polyethylene terephthalate.

Not all pack sizes may be marketed.

5.5. Special precautions for the disposal of unused veterinary medicinal products or waste materials derived from the use of such products

Medicines should not be disposed of via wastewater or household waste.
Use take-back schemes for the disposal of any unused veterinary medicinal product or waste materials derived thereof in accordance with local requirements and with any national collection systems applicable to the veterinary medicinal product concerned.

6. NAME OF THE MARKETING AUTHORISATION HOLDER

Huvepharma NV
Uitbreidingstraat 80
2600 Antwerp
Belgium

7. MARKETING AUTHORISATION NUMBER

Vm 30282/3000

8. DATE OF FIRST AUTHORISATION

25 August 2022

9. DATE OF THE LAST REVISION OF THESUMMARY OF THE PRODUCT CHARACTERISTICS

August 2023

10. CLASSIFICATION OF VETERINARY MEDICINAL PRODUCTS

Veterinary medicinal product subject to prescription.
Detailed information on this veterinary medicinal product is available in the Union Product Database (https://medicines.health.europa.eu/veterinary).

Approved 28 April 2024