1 NAME OF THE VETERINARY MEDICINAL PRODUCT

Dycoxan 2.5 mg/ml Oral Suspension for sheep and cattle

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

1 ml contains

Active substance:	
Diclazuril	2.5 mg
Excipients:	
Methyl Parahydroxybenzoate (E218)	1.8 mg
Propyl Parahydroxybenzoate	0.2 mg

For the full list of excipients, see section 6.1

3 PHARMACEUTICAL FORM

Oral suspension.
White to off-white suspension.

4 CLINICAL PARTICULARS

4.1 Target Species

Sheep (lambs), Cattle (calves)

4.2 Indications for use, specifying the target species

In lambs:
Prevention of clinical signs of coccidiosis caused by *Eimeria crandallis* and *Eimeria ovinoidalis* sensitive to diclazuril.

In calves:
Prevention of clinical signs of coccidiosis caused by *Eimeria bovis* and *Eimeria zuernii* sensitive to diclazuril.

4.3 Contraindications

Do not use in cases of hypersensitivity to the active substance or to any of the excipients.

4.4 Special warnings for each target species

Avoid under-dosing, which may be due to underestimation of body weight, misadministration of the product or lack of calibration of the dosing device (if any).
It is recommended to treat all lambs of the flock and all calves in a pen. This will contribute to reduce the infection pressure and assure a better epidemiological control of the coccidiosis infection.
If there is no recent and confirmed history of clinical coccidiosis, the presence of coccidia in the flock or herd should be confirmed by faecal sampling prior to treatment.

In certain cases, only a transient reduction of oocyst shedding may be achieved.
Suspected clinical cases of resistance to anticoccidials should be further investigated and where evidence strongly suggest resistance to a particular antiprotozoal, an anticoccidial belonging to another pharmacological class and having a different mode of action should be used.

Frequent and repeated use of antiprotozoals may lead to the development of resistance in the target parasite.

4.5 Special precautions for use

Special precautions for use in animals

Lambs
On rare occasions, in highly susceptible lambs e.g. where they have been housed for long periods of time before being turned out onto heavily contaminated pasture, a severe scour has been seen shortly after dosing. In such cases, fluid therapy is essential.

Calves
Clinical coccidiosis generally occurs late in the parasite's life cycle after most of the damage to the calf's intestine has already been done. This severely damaged intestine can easily be infected by secondary bacteria and/or other agents. In cases of acute clinical coccidiosis treated with the product, fluid therapy is essential.
Symptoms of clinical disease may remain obvious in some calves treated with the product, even though oocyst excretion is reduced to a very low level, and overall prevalence of diarrhoea is decreased.

The preferred timing of treatment is directed by the known epidemiology of *Eimeria* spp. and the presence of coccidia in the flock or herd should be confirmed by faecal sampling prior to treatment, if there is no recent and confirmed history of clinical coccidiosis.
Coccidiosis is an indicator of insufficient hygiene in the flock/pen. It is recommended

to improve hygiene and to treat all lambs in the flock and all calves in a pen.

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

Wash hands after use.

4.6 Adverse reactions (frequency and seriousness)

In very rare cases, adverse events involving gastrointestinal disorders (such as diarrhoea, with possible presence of blood), lethargy and/or neurological troubles (agitation, recumbency, paresis...) have been reported. Some treated animals may show signs of clinical disease (diarrhoea) even though oocyst excretion is reduced to a very low level.

The frequency of adverse reactions is defined using the following convention:
- very common (more than 1 in 10 animals treated displaying adverse reaction(s))
- common (more than 1 but less than 10 animals in 100 animals treated)
- uncommon (more than 1 but less than 10 animals in 1,000 animals treated)
- rare (more than 1 but less than 10 animals in 10,000 animals treated)
- very rare (less than 1 animal in 10,000 animals treated, including isolated reports)

4.7 Use during pregnancy, lactation or lay

Not applicable.

4.8 Interaction with other medicinal products and other forms of interaction

None known.

4.9 Amounts to be administered and administration route

For oral use only.

To ensure the correct dosage, bodyweight should be determined as accurately as possible.
If animals are to be treated collectively rather than individually, they should be grouped according to their bodyweight and dosed accordingly, in order to avoid under- or overdosing.

1 mg diclazuril per kg bodyweight (equivalent to 1 ml of the oral suspension per 2.5 kg bodyweight) as a single oral administration.

Lambs:
A single oral administration of 1 mg diclazuril per kg bodyweight or 1 ml the product

oral suspension per 2.5 kg bodyweight at about 4-6 weeks of age at the time that coccidiosis can normally be expected on the farm.

Under conditions of high infection pressure, a second treatment may be indicated about 3 weeks after the first dosing.

Calves:
A single administration of 1 mg diclazuril per kg bodyweight or 1 ml the product oral suspension per 2.5 kg bodyweight, administered as a single dose, 14 days after moving into a potentially high risk environment.

If a satisfactory response is not observed, then further advice should be sought from your veterinary surgeon and the cause of the condition should be reviewed. It is good practice to ensure the cleanliness of calf housing.

Method of administration
Shake well before use.
The product oral suspension should be administered with a drenching gun.
Appropriate drenching equipment should be used to allow accurate dosing. This is particularly important when administering small volumes.

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

Diclazuril oral suspension was given to lambs as a single dose up to 60 times the therapeutic dose. No adverse clinical effects were reported.
No adverse effects were noted either at 5 times the therapeutic dose administered four consecutive times with a 7-day interval.
In calves, the product was tolerated when administered up to five times the recommended dose rate.

4.11 Withdrawal period(s)

Meat and offal:

Sheep (lambs): zero days
Cattle (calves): zero days

5 PHARMACOLOGICAL or IMMUNOLOGICAL PROPERTIES

Pharmacotherapeutic group: Antiprotozoals, triazine derivatives
ATC vet code: QP51AJ03

5.1 Pharmacodynamic properties

Diclazuril is an anticoccidial of the benzene acetonitrile group and has an anticoccidial activity against *Eimeria* species. Depending on the coccidia species, diclazuril has a coccidiocidal effect on the asexual or sexual stages of the development cycle of the parasite. Treatment with diclazuril causes interruption of the coccidial cycle and of excretion of oocysts for approximately 2 to 3 weeks after administration. This allows the lambs to bridge the period of decrease of maternal immunity (observed at approximately 4 weeks of age) and calves to reduce the infection pressure of their environment.

5.2 Pharmacokinetic particulars

The absorption of diclazuril when administered as an oral suspension to lambs and calves is poor. In lambs, peak plasma concentrations are reached about 24 hours after dosing. The absorption decreases with the age of the lambs. The elimination half-life is about 30 hours.

In calves, kinetic profiles have been studied after administration of a single dose of 5 mg diclazuril per kg body weight and after dosing for 3 consecutive days at respectively 1 mg, 3 mg and 5 mg diclazuril per kg body weight. Following the single dose of 5 mg peak plasma concentrations in the range of 21 to 75 ng/ml were reached after 8 to 24 hours. Thereafter the concentrations decreased with a half-life of 16 hours to concentrations below 10 ng/ml after 48 hours. Following the 3 consecutive daily doses of 1 mg diclazuril per kg body weight, mean peak plasma concentrations of 65.6 ng/ml were reached 10.5 hours after the last dose. Thereafter the concentrations decreased with a half-life of 22 hours. The AUC_{0-96} h was 2127 h.ng/ml. Comparison with the profiles obtained after the multiple doses indicated dose proportionality and linearity. The time to reach peak plasma concentrations and the subsequent depletion half-life were independent of the dose. *In vitro* studies in ovine and bovine hepatocytes indicated that the metabolic transformation of diclazuril is very limited, as was also observed for other species. *In vivo* studies in a number of animal species have also demonstrated that diclazuril is not excreted and excreted virtually completely unchanged with the faeces.

5.3 Environmental properites

Diclazuril has been shown to be very persistent in soil.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Methyl Parahydroxybenzoate (E218)
Propyl Parahydroxybenzoate
Microcrystalline Cellulose
Carmellose Sodium
Polysorbate 20
Sodium Hydroxide
Purified water

6.2 Major incompatibilities

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

6.3 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

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

200 ml, PET bottle with child resistant tamper evident HDPE cap with LDPE lining
1 litre, 2.5 litre and 5 litre high density polyethylene bottle with polypropylene tamper-evident cap with Alu seal
Each pack size will be marketed with one container in a carton.

Not all pack sizes may be marketed.

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

Any unused veterinary medicinal product or waste material derived from such a veterinary medicinal product should be disposed of in accordance with local requirements.

7 MARKETING AUTHORISATION HOLDER

Chanelle Pharmaceuticals Manufacturing Limited
Loughrea
Co. Galway
Ireland

8 MARKETING AUTHORISATION NUMBER(S)

VPA10987/122/001

9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorisation: 4th May 2018

10 DATE OF REVISION OF THE TEXT