

# CLEAN-UP YOUR ANTICOCCIDIAL PROGRAMMES

## Coxiril® 0.5% Premix Broilers

### INTRODUCTION

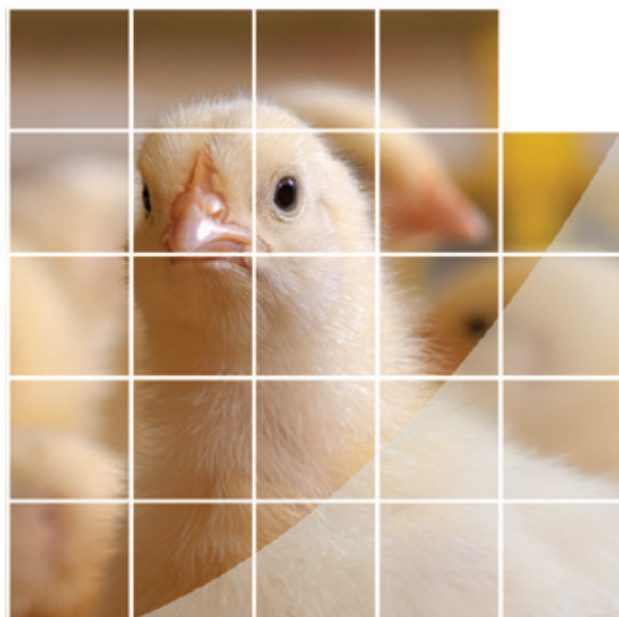
The key for preventing sub-clinical coccidiosis is to create an environment with low infection pressure, where most anticoccidials can keep the situation under control, enabling immunity to develop naturally.

However, while small amounts of oocysts help to trigger the immunization process, too many will lead to excessive damage of the intestinal wall, resulting in slow growth, poor feed efficiency, increased risk of disease and a higher number of deaths.

Control of (sub-) clinical coccidiosis can have an important role in the prevention of dysbacteriosis. Coxiril® is a potent synthetic anticoccidial that can be used strategically to clean up high infection pressures at regular intervals.

Coxiril® wipes out ionophore resistant coccidia strains, therefore helping to restore ionophore efficacy.

A clean-up programme with Coxiril® prior to vaccine use will ensure that the field infection pressure is low and the vaccine multiplication is not overwhelmed, resulting in coccidiosis outbreaks.



# Unique profile

## Allows natural immunity to develop

Natural immunity development is essential for chickens and turkeys, enabling them to fight off coccidial infection. The early stages of *Eimeria* are highly immunogenic, and as a consequence, products that act only on the later stages of the *Eimeria* lifecycle will not interfere with natural immunity build-up.

Diclazuril has a strong cidal action against the later stages of *Eimeria* but allows the early, immunogenic stages, to develop. As a consequence Coxiril® will not interfere with natural immunity formation as was demonstrated in controlled laboratory experiments.

## Coxiril®: does not disturb the natural intestinal microflora

Coxiril® provides maximum protection against clinical coccidiosis outbreaks and allows a completely normal development of intestinal microflora. Because the active ingredient diclazuril has no antibacterial effect, it does not and cannot cause any intestinal imbalance. Because of the strong coccidiocidal effect, the product also contributes in decreasing dysbacterioses issues to occur.

## Unique safety profile

No other anticoccidial on the market comes close to Coxiril® for safety.

## Well tolerated

- Coxiril® will not influence feed and water uptake, it does not induce higher sensitivity to heat stress or increase litter humidity.
- High safety margin for all animals and humans.

## Safe in use

- No known incompatibility with other feed ingredients or medications.

<i>Eimeria</i> species	Development stage affected by diclazuril				
	Trophozoite	Early Schizont	Late Schizont	Gamonts	Zygote
<i>E. acervulina</i>			D	L	
<i>E. maxima</i>				L	D
<i>E. tenella</i>		D	DL	D	
<i>E. brunetti</i>				DL	
<i>E. necatrix</i>			DL		

D: Stages affected by diclazuril

L : Stages inducing lesions

## For the environment

- No toxicity for plants, soil microflora, fish and other aquatic species.
- There is complete bio-transformation and no bio-accumulation.

## Key advantages:

- Zero withdrawal time
- Extremely powerful, effective and safe chemical
- Strong cidal activity against all relevant coccidia species
- Allows development of natural immunity
- Can be used to decrease coccidiosis pressure before implementing coccidiosis vaccines programs
- Excellent safety profile in all species
- Dosage range allows flexible dosing, depending on the coccidiosis challenge in the field
- Increased economic performance (decreasing sub-clinical coccidiosis)
- Well-tolerated by the animals
- No heat stress or increased litter humidity
- Perfectly compatible with other feed ingredients
- Unique carrier coated formulation

# Highly effective

## Benefits of Coxiril® zero day withdrawal

- Handling and thinning is more flexible for producers/integrators
  - In vivo coccidian clean-up
  - Lower infection pressure for the next flock
  - Multiple unloading (thinning) to maintain optimal density
  - Economic benefit:
    - increased performance
    - less outbreaks
    - lower transport
    - handling charges
  - Established and published MRL
- Other molecules and/ or combined formulations have longer withdrawal times and many still have a number of practical issues:
- Withdrawal feed deliveries: expensive small volume, bulk transport
  - Expensive, excessive handling and logistics in trying to meet delivery times to slaughter houses
  - Sub-optimal farm management

## A valuable anticoccidial

Coxiril® 0.5% premix is the highest selling non-ionophore anticoccidial. The product is the safest and most potent (1ppm) synthetic anticoccidial on the market. The product can be used for broilers, replacement pullets, turkeys and game birds:

- Highly effective against all relevant *Eimeria* species at only 1 ppm in the feed.
- An exceptionally wide safety margin in poultry and other animals.
- Is not chemically related to any of the other available anticoccidial feed additives.
- Fits into various anticoccidial programmes.

## Effect of 1 ppm Coxiril® on lesion score and oocyst excretion (OPG), in replacement pullets and broilers

<i>Eimeria</i> spp.	Average lesion scores		OPG (x 1000)	
	IUC*	Coxiril®	IUC*	Coxiril®
<i>E. tenella</i>	3.2	0	462	0
<i>E. acervulina</i>	2.1	0	399	0
<i>E. necatrix</i>	3.5	0.8	79	0
<i>E. brunetti</i>	2.8	0.8	144	0
<i>E. maxima</i>	2.7	0.3	241	30

IUC\* = infected untreated control



## Safe and effective for use in replacement pullets

- Coxiril® is highly effective against all relevant coccidia species, also against the more pathogenic ones like *E. tenella*, *E. maxima* and *E. necatrix*.
- Coxiril® does not interfere with natural immunity formation against coccidiosis.
- Coxiril® is a very safe product and does not pose any risk to growing pullets, not even at exaggerated dose levels.

# Multiple use

## Rotation strategies

Most broiler companies rotate their anticoccidial programmes on a regular basis, on average every 4 to 6 months. After rotating them broiler companies clearly experience better broiler performance and an improvement in the levels of coccidiosis control. Traditionally these programmes contained different classes of anticoccidial drugs, but nowadays also the concept of rotating between anticoccidial drugs and vaccines offers new possibilities. A prerequisite for effective rotation programmes is that products of different, unrelated chemical classes are used.



## Advices to use Coxiril® in three types of programmes

### 1. Coxiril® in starter feed as shuttle (chemical/ ionophore)

The infection pressure that may have been built-up in the finishing stage of earlier rounds can be a serious burden, endangering the growth and economic performance of newly put-up chicks from day one. Shuttering Coxiril® with other anticoccidials will result in highly efficient animal performance.

**Duration of use: maximum 6 months**

### 2. Coxiril® in a full programme

It is recommended to use Coxiril® in a full clean-up programme in case of a high infection pressure, especially after predominant use of ionophores.

**Duration of use: maximum 2 grow-outs**

### 3. Coxiril® “zero withdrawal broiler programme”

Coxiril® obtained a zero day withdrawal period. Huvepharma® recommends the use of Coxiril® in the growing phase from day 28 till slaughter.

It will manage to decrease the infection pressure in the late growing stages. The zero withdrawal time provides full flexibility in terms of handling and thinning.

The next flock can effectively make a clean start.

**Duration of use: maximum 6 months**

# Quality assured

Diclazuril – the active ingredient in Coxiril® – is produced by Huvepharma® in its manufacturing site Biovet® – Peshtera, Bulgaria in accordance with all quality GMP standards and requirements.

## Production of Coxiril®

The manufacturing process of Coxiril® comprises 2 phases:

**1. Formulation of Coxiril®**, which includes the following steps:

1. Synthesis of diclazuril
2. Standardizing of the active substance with the carriers and mixing to assure homogeneity
3. Granulation of the standardized intermediate product and sieving
4. Quality control of finished product

**2. Filling and packing**

## Composition Coxiril®

Name of the ingredient	Content, (mg/g)
<b>Active ingredient:</b> Diclazuril	5.0
<b>Binding agent:</b> Starch for granulation	15.0
<b>Structure-forming agents and diluents:</b> Wheat meal Calcium carbonate	700 Up to 1.0 kg

## Finished product batch release specification:

Test characteristics	Specification
<b>Appearance</b>	Granules
<b>Colour</b>	From off-white to beige
<b>Identity</b>	HPLC
<b>Loss on drying, %</b> - At batch release - During shelf-life	Not more than 8.0 Not more than 12.0
<b>Content of Diclazuril (HPLC), mg/g</b>	From 4.75 to 5.25
<b>Granule size, %:</b> - Sieve 800 µm, % of particles passing - Sieve 100 µm, % of particles passing	Not less than 97.0 Not more than 10.0





# Practicability

## Practical advices and packages

### Useful tip

Today we can help our customers to get rid of these expensive management techniques by implementing the flexible and economical Coxiril® “zero withdrawal” programme.

### Directions for mixing and administration

Diclazuril is well-tolerated when fed at the recommended dose range of 0.8-1.2 ppm per ton of feed. Mix 160 to 240 gram of Coxiril® 0.5% premix per ton of complete feed to get a final dosage of 0.8 and 1.2 ppm, respectively. To ensure thorough dispersion of the product, it should be mixed with a suitable quantity (20-25 kg) of feed ingredients before incorporation in the final mix.

Feed containing Coxiril® premix may be given in pelleted or meal form to the animals from the 1<sup>st</sup> day of age.



### Packaging and labelling

- Inner lining is made of polyethylene
- Outer layer is made of 3- ply paper
- Multi-language label is printed on the back of the bag
- Net weight of one bag is 20 kg.

Target species	Diclazuril (ppm)	Coxiril® 0.5% Premix (g/ton)	Maximum age (weeks)	Withdrawal period (days)
Broilers	0.8-1.2	160-240	-	0
Chickens reared for laying	0.8-1.2	160-240	16	-
Turkeys	0.8-1.2	160-240	16	0
Game birds	0.8-1.2	160-240	-	0



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