

Body weight

Individual body weights were recorded on day 15 and day 28 of this trial. The table below illustrates the effects of *C.p*-associated NE on body weight, feed intake, and feed conversion ratio parameters for all four groups of this trial.

Effect of *C.p*-challenged necrotic enteritis and penicillin G potassium on body weight and feed intake parameters

	pens	BODY WEIGHT MEAN (kg)		FEED INTAKE MEAN (kg/day)	FEED CONVERSION RATIO MEAN (kg/kg)
		day 15	day 28	day 15-28	day 15-28
TREATMENT GROUP					
A NEGATIVE CONTROL	8	0.367	1.125 ^{a,b}	0.097 ^a	1.700 ^a
B POSITIVE CONTROL	8	0.366	1.102 ^b	0.097 ^a	1.803 ^b
C POT-PEN 0.2 g/L	8	0.349	1.155 ^{a,c}	0.100 ^{a,b}	1.614 ^c
D POT-PEN 0.4 g/L	8	0.362	1.173 ^c	0.102 ^b	1.655 ^{a,c}
GENDER					
MALES	16	0.360	1.166 ^a	0.102 ^a	1.6785 ^a
FEMALES	16	0.362	1.111 ^b	0.096 ^b	1.7074 ^a

^{a, b, c} Rows within treatment group and gender within column with different superscripts are significantly different (P < 0.05)

To further expand on the results displayed on the table above, the following key findings can be highlighted:

- birds treated with Pot-Pen show an overall improvement in body weight,
- birds treated with Pot-Pen show an overall improvement in both feed conversion and feed intake.

Discussion

This trial provides evidence that administering Pot-Pen in drinking water appears to be effective in reducing both mortality and poor growth performance usually linked to subclinical NE caused by *C.p* infection. The following favourable points were assessed:

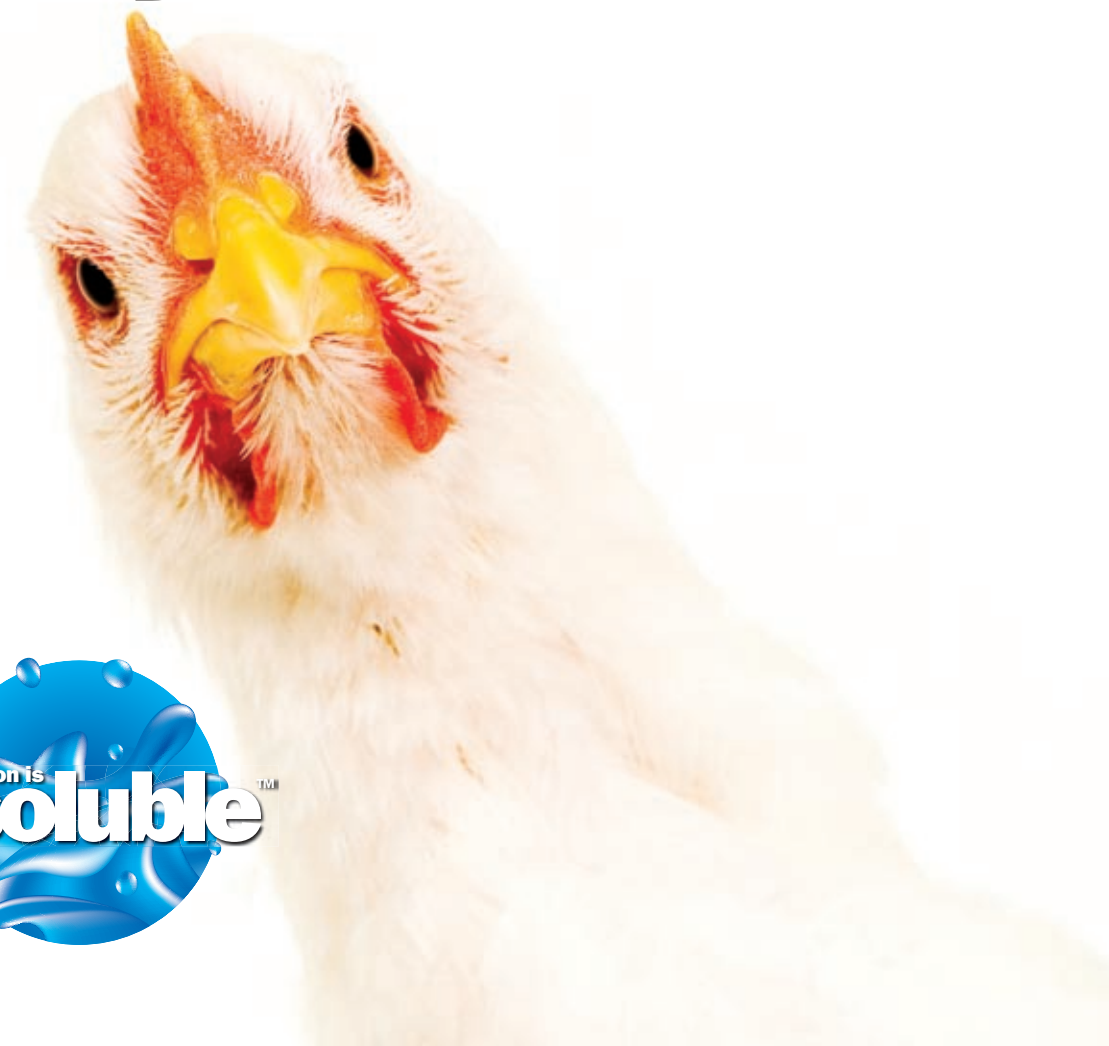
- administration of Pot-Pen (at both 0.2 g/L and 0.4 g/L) in drinking water effectively controls necrotic enteritis associated with *C.p* in broiler chickens,
- subclinical NE caused by *C.p* infection appears to be part of the overall NE syndrome associated with *C.p* infection,
- subclinical NE appears to impact negatively on growth performance,
- Pot-Pen associated improvements in mortality and growth performance appear to be focussed on controlling *C.p*-associated NE,
- despite the fact that group A (control) was not voluntarily infected with *C.p*, NE was diagnosed, showing the omnipresence of the disease.

The improvement in both mortality and growth performance are linked to Pot-Pen[®]'s role in controlling *C.p*-associated NE.



pot-pen™

say whaaaat?



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Data on file with Vétoquinol.



Dr Claude Thibault DVM
 Technical Veterinary Services
 Vétoquinol Canada Inc.

Throughout the last decades, water soluble powders have been successfully used to deliver nutritional supplements and medications. Compared to injections and feed additives, soluble powders are a very efficient and an economical way to deliver mass medication:

- medicating a relatively large number of animals is definitely more logistically friendly through water consumption as opposed to repetitive injections,
- ill animals may have very low appetites especially when fever is involved, while water consumption may remain relatively reasonable, thus medicating through water is more likely to deliver optimal amounts of active ingredients,
- the sole use of soluble powders, as opposed to feed additives, will virtually eliminate the risk of antibiotic contamination of feed manufacturing, storage and distribution equipment,
- finally, soluble powders allow for precise administration of actives while allowing to treat targeted groups within a herd or flock, on pulse therapy programs, whereby overall efficiency is improved.

There are many commercially available medicated soluble powders, however, through recent research, only Pot-Pen® displays the following unique characteristics on its label:

SUMMARY	ACTIVE INGREDIENT	SCOPE	SPECIES + WITHDRAWAL (DAYS)	THERAPEUTIC SUMMARY
For the treatment of infections caused by penicillin susceptible micro-organisms.	penicillin G potassium	ANTIBACTERIAL MULTIVITAMIN	SWINE 1 BROILERS 1 TURKEYS 1	STREPTOCOCCUS SUIIS NECROTIC ENTERITIS ERYSIPELAS

Chart to the right displays concentration of penicillin G potassium per Pot-Pen® container:

- one jar (500,000,000 I.U.) in 13.1 L stock solution, distributed by water medicator – 30 mL per 4 L (1 oz per U.S. gallon), ~300,000 I.U./L or ~0.2 g/L
- withdrawal time is one day.

INGREDIENT	ME.	CONCENTRATION
per jar		
Penicillin G Potassium	I.U.	500,000,000
per pail		
Penicillin G Potassium	I.U.	15,000,000,000

IMPORTANT NOTE:
 The data supplied throughout the charts and texts in this page are merely a summary. Labels should be thoroughly read at all times to ensure proper usage.

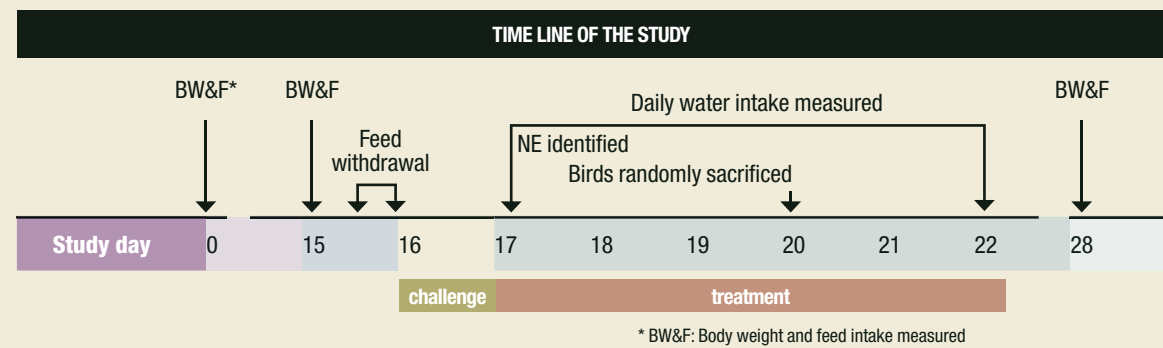
At Vétoquinol we understand the need for ongoing research, and how this may better guide you in your everyday work. As a longstanding leader in the soluble powder market for over thirty years, we believe that we have the duty to supply you with the most recent information, and this understood as an intricate part of high quality products and services.

Introduction

A *Clostridium perfringens* (C.p) challenge trial¹ was conducted to measure the efficacy of Pot-Pen®, administered through drinking water, in managing mild, clinical or subclinical manifestations of necrotic enteritis (NE) caused by C.p. The trial was meant to determine if Pot-Pen effectively controls NE caused by C.p infection and to find the evidence to suggest that subclinical NE is part of the overall C.p infection profile.

A total of 1600 one-day old broiler chickens (800 males and 800 females) originating from a commercial hatchery were used in this trial. The birds were randomly assigned to 32 contiguous pens. The trial consisted of four treatment groups: (**group A**) negative control (unchallenged, non-medicated); (**group B**) positive control (C.p challenged, non-medicated); (**group C**) Pot-Pen® 0.2 (C.p challenged, treated with Pot-Pen at 0.2 g/L of drinking water); (**group D**) Pot-Pen® 0.4 (C.p challenged, treated with Pot-Pen at 0.4 g/L of drinking water).

The table below describes a time line progression including days of challenge, measurements, and bird sacrifices.



Morbidity & mortality

The C.p challenge model used in this trial gave the following results in relation to mortality associated with NE. In addition, the key findings below show that both Pot-Pen treatment groups (C and D) were effective against NE caused by C.p infection thus reducing mortality associated to NE.

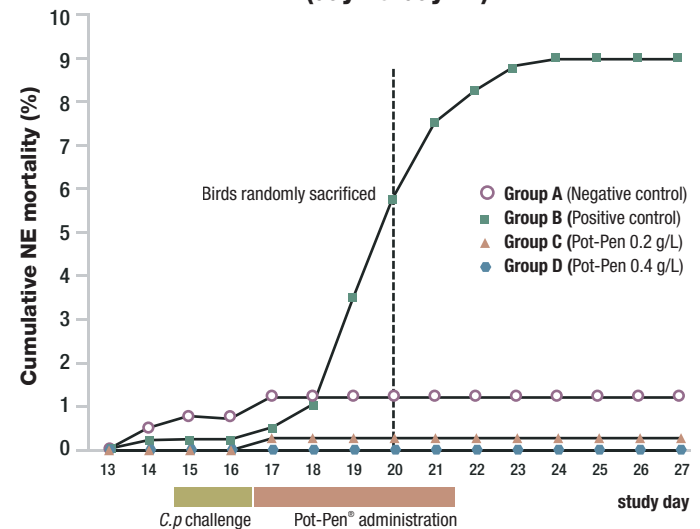
- Pot-Pen treatment in **groups C and D** (Pot-Pen at 0.2 g/L and 0.4 g/L) was effective at reducing mortality associated to NE.
- NE was found in **group A** (negative control).
- Only 1 of 40 randomly sacrificed birds in **groups C and D** (Pot-Pen) showed any C.p-related lesions.

Pen-level mortality post-treatment initiation (≥day 17)

TREATMENT GROUP	NO. PENS	ALL CAUSES	NE ONLY	NON-NE
		MEAN MORTALITY		
A Negative control	8	2.62% ^a	0.57% ^a	2.05% ^a
B Positive control	8	10.12% ^b	8.86% ^b	1.26% ^a
C Pot-Pen 0.2 g/L	8	0.76% ^a	0.25% ^a	0.51% ^a
D Pot-Pen 0.4 g/L	8	2.04% ^a	0.00% ^a	2.04% ^a

^{a,b} Rows with different superscript within column are significantly different (P < 0.05)

Cumulative NE mortality (day 13-day 27)



¹ Aramini, J., Wilson, J., Efficacy of Penicillin G Potassium for treatment of necrotic enteritis in *Clostridium perfringens* challenged broiler chickens, 2007.