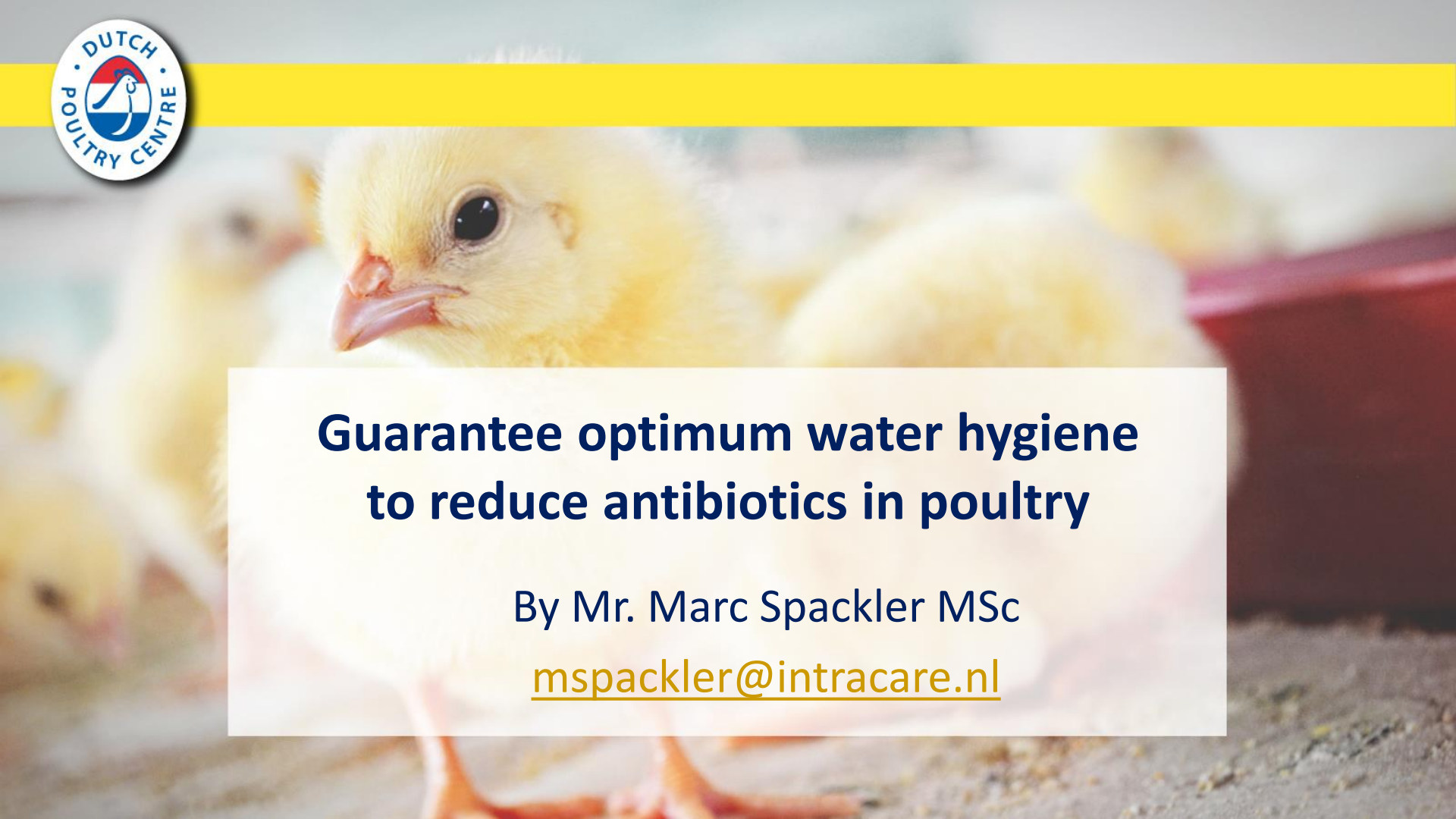


Guarantee optimum water hygiene to reduce antibiotics in poultry

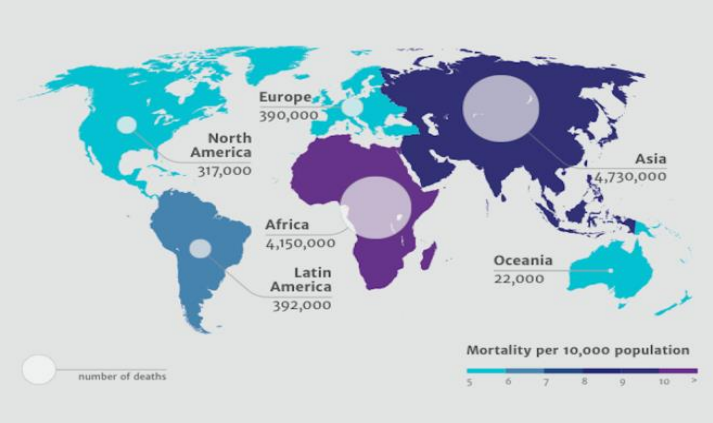
By Mr. Marc Spackler MSc

mspackler@intracare.nl

2015 antibiotic resistance currently accounts for an estimated **50,000 deaths** in the US and Europe,

The actual current death toll is **700,000** worldwide

If antibiotic resistance were allowed to grow unchecked ……



" In 2050 an estimated death rate of

10 million people worldwide each year "

http://amr-review.org/home

Statement on Antibiotic Use

- "Our customers want food that they feel great about eating – all the way from the farm to the restaurant – and these moves take a step toward better delivering on those expectations," said McDonald's U.S President Mike Andres

- In the US, we agree antibiotics have important benefits, but we believe that a few sensible changes can both maintain their most important benefits while helping to reduce their use overall. We are **committing to use chicken that is not raised with antibiotics important to human medicine**. McDonald's has been working closely with farmers for years to reduce the use of antibiotics in our supply, thus we are able to commit today to **stop using antibiotics** important to human medicine in chicken production for **McDonald's USA by March 2017**.

http://news.mcdonalds.com/US/Media-Statements/Response-to-Antibiotics-in-Chicken

Foster Farms launches 1st antibiotic-free turkey product

Release Date: 2015-07-21

Foster Farms has introduced its first antibiotic-free turkey product. On July 21, the company announced that Foster Farms Organic Ground Turkey is now available at retailers and Costco locations. The release of the new antibiotic-free, organic turkey product comes less than two months after the company launched its organic fresh chicken line and announced that it would soon be introducing **antibiotic-free turkey** products

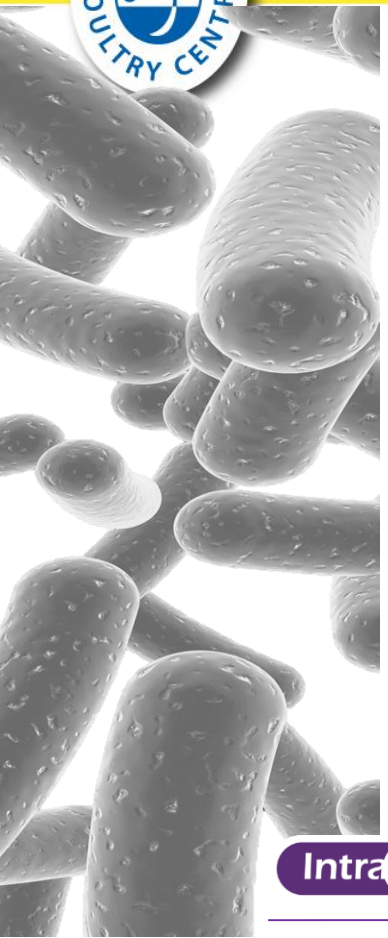
In 2014, Perdue Farms, the fourth largest chicken producer in the United States, already raising 95 % of its birds without antibiotics.

2015, Perdue announced that more than 50 % of their birds are raised completely without antibiotics.

Antibiotic use policies of major chicken companies

	Millions of chickens produced a week	Use of human class antibiotics		
		HATCHERY	PREVENTION	GROWTH
Tyson Food	36	NO	YES	NO
Pilgrim's	33	YES	YES	YES
Perdue Farms	12	NO	NO	NO
Koch Foods	12	YES	YES	YES
Sanderson Farms	9	YES	YES	YES
Wayne Farms	6	YES	YES	YES
Mountair Farms	6	YES	YES	YES
Foster Farms	6	YES	YES	NO

Source: Compiled from company websites by Keep Antibiotics Working, a coalition of 14 advocacy groups ranging from the Lymphoma Foundation of America to Food and Water Watch



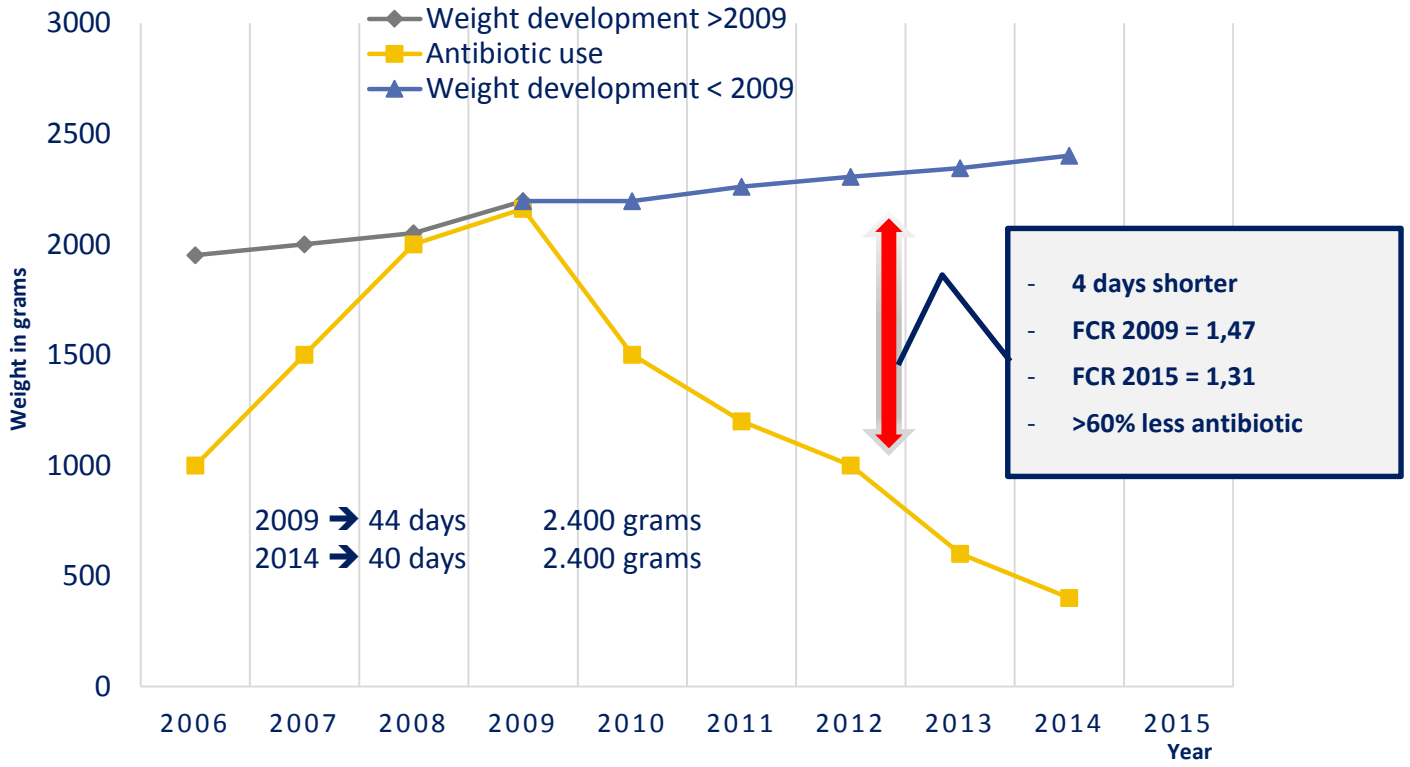
- Netherlands, small country but a world player in the agricultural field and the **second largest exporter** of agricultural products in the world, next to the United States…
- The Netherlands was number 1 as heavy user of antibiotics in Europe. We made the mistake of using antibiotics rather than optimizing the living conditions of our livestock.
- Only in 5 years time we managed to change the course drastically. And: without ruining the sector!

Goals for the Netherlands :

- 20% AB reduction 2011 √
- 50% AB reduction 2013 √
- 70% AB reduction 2015 √

The Netherlands is still the number two in agricultural export!

Sector Results



TRANSMITTED BY WATER

Brazilian Journal of Poultry Science
Revista Brasileira de Ciência Avícola

Bacterial Diseases:

Chronic Respiratory Disease (CRD) : **Mycoplasma gallisepticum**

Colibacillosis : **Escherichia coli**

Fowl Typhoid : **Salmonella Gallinarum**

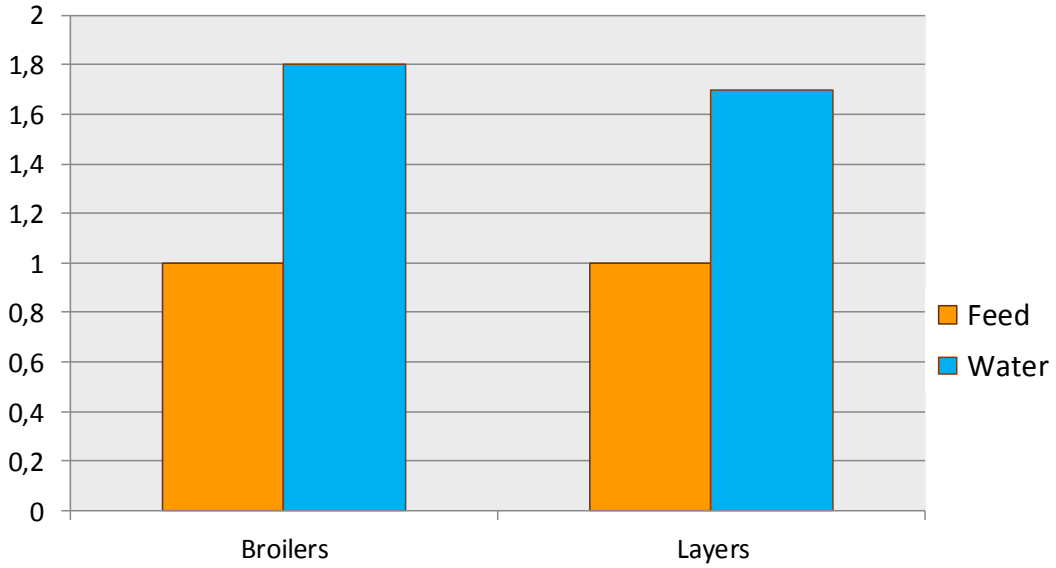
Diseases caused by virus:

Newcastle Disease: Paramyxovirus

Infectious bronchitis: Coronavirus

Marek's disease: Herpesvirus

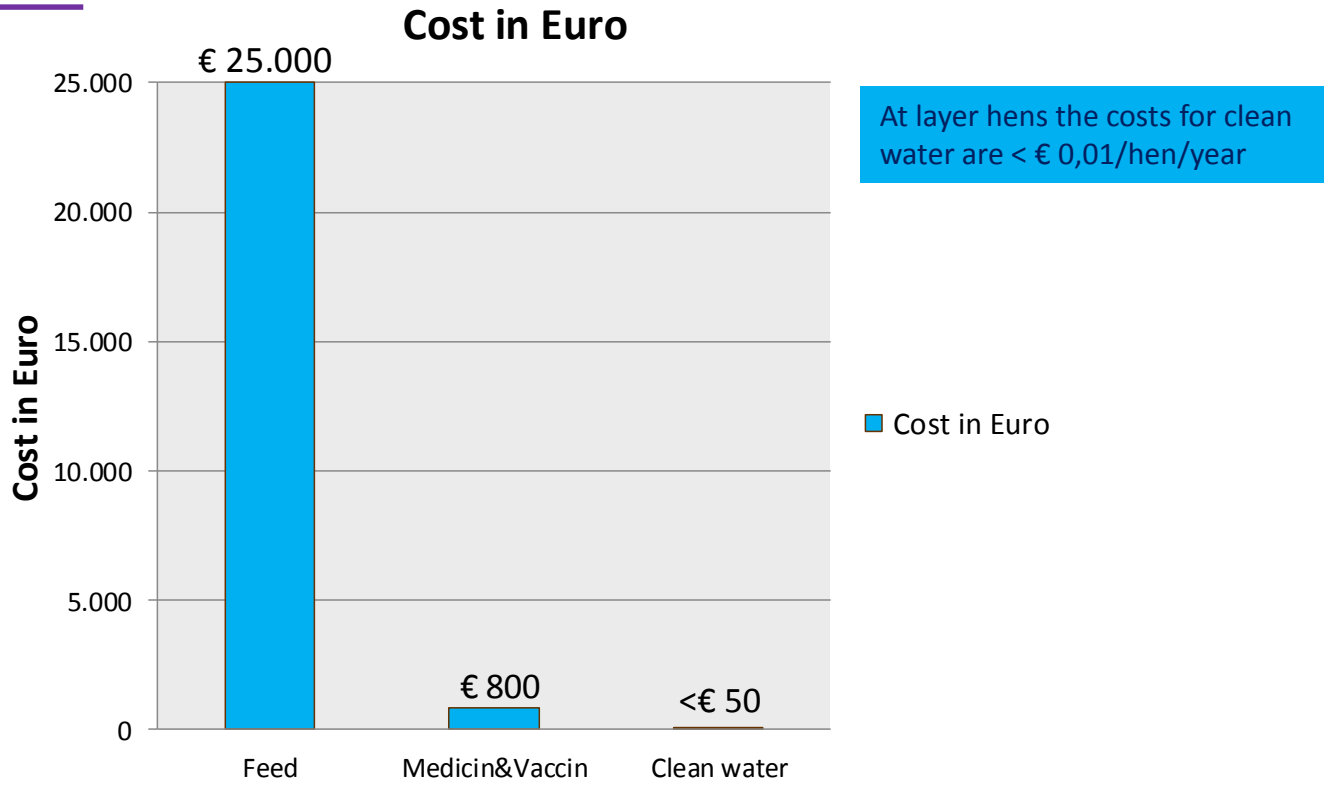
Double water intake vs feed



Water is the most important "feed ingredient"
3 minutes without oxygen
➔ *3 days without water*
➔ *3 months without food*

Clean water <2 ‰ of feed costs

20.000 birds



At layer hens the costs for clean water are < € 0,01/hen/year

Risks of a polluted drinking system

- Change of taste and smell
- Decreasing water intake
- Decrease of feed ingestion

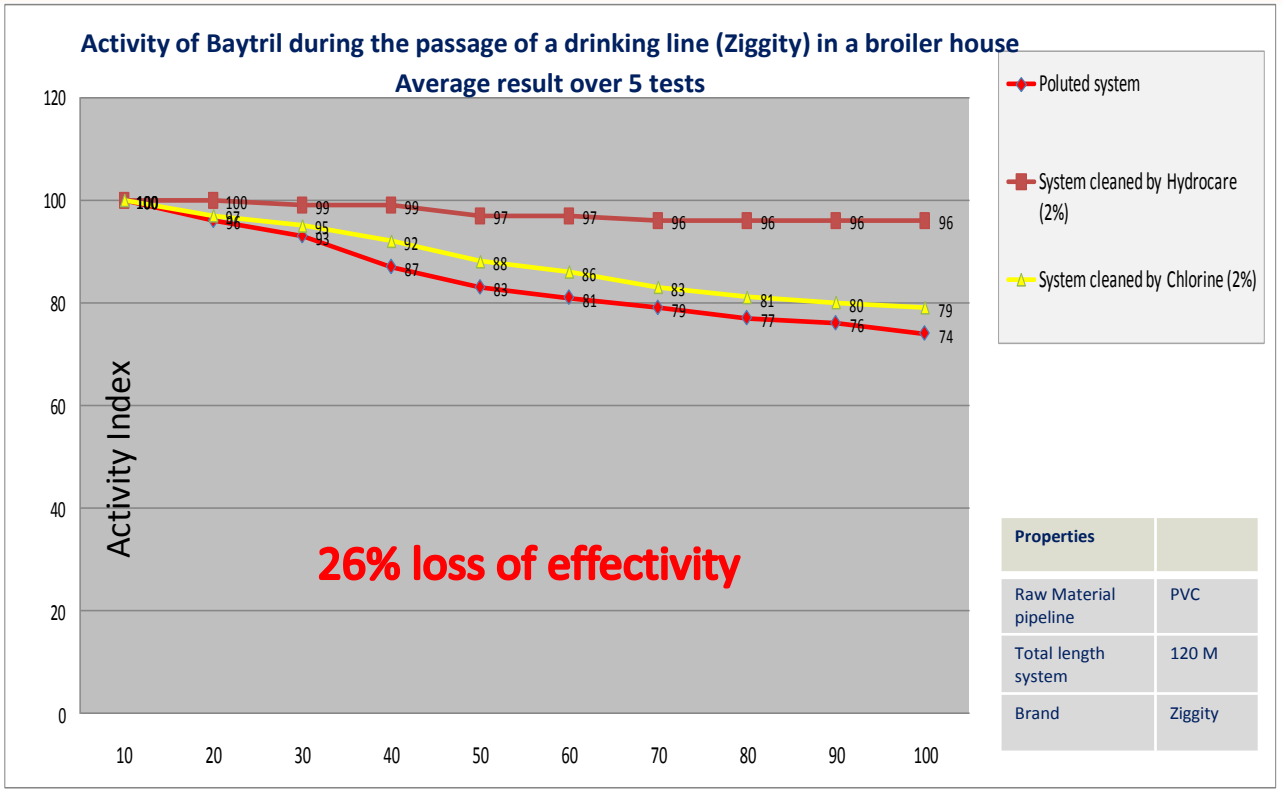
} Lower performance & health

- Source of micro-organism
- New breeding ground for new micro-organism
- Formation of toxins
- Blockages in the drinking system
- Less benefit of medicines and vaccines

Water restriction	Feed Consumed (g)	Weight Gain (g)	Intestine Weight (g)	Villi Height (micrometer)
0%	173a	140a	13.03a	1340
10%	136b	119b	11.95ab	1137

The effect of water restriction on feed consumption, weight gain, feed conversion and intestine weight of chicks at 7 days of age (Ribeiro et al., 2005)

Antibiotics loss by reaction with biofilm

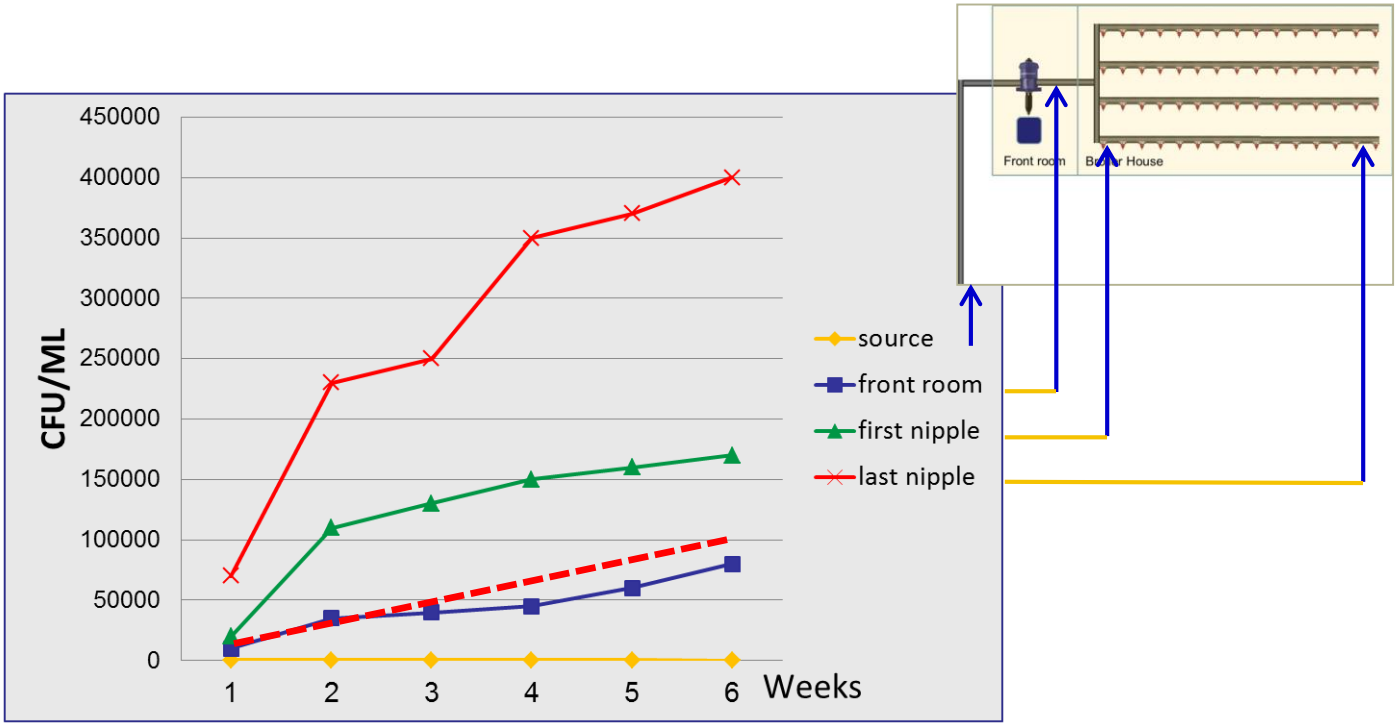


Sample inspection in meter pipeline

Trail: 2007: CCL Laboratories in cooperation with farmers Hendrix UTD

Microbiological count drinking water route

Trail V.O.F. Vosters The Netherlands, for Hydrocare PT05 registration
March 2012

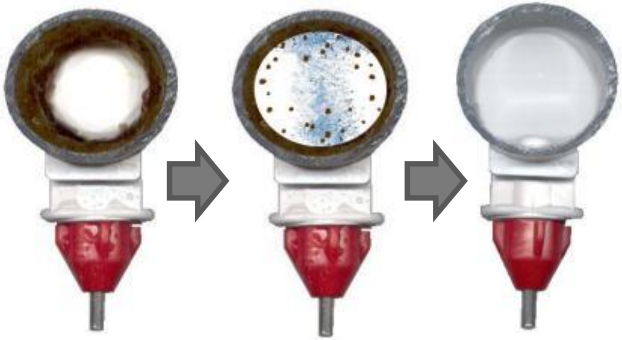


Note: Trail organized in cooperation with Dutch Animal Health Service (Deventer)

Cleaning without disinfection makes no sence !

Cleaning

- Removes biofilm inside the drinking system
- Cleaning = 99% removing of micro-organism
- Cleaning is more important than disinfecting!!

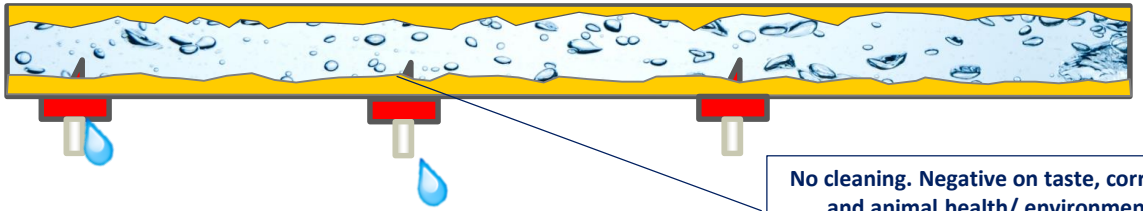


Disinfecting

- Destroys all the micro-organism

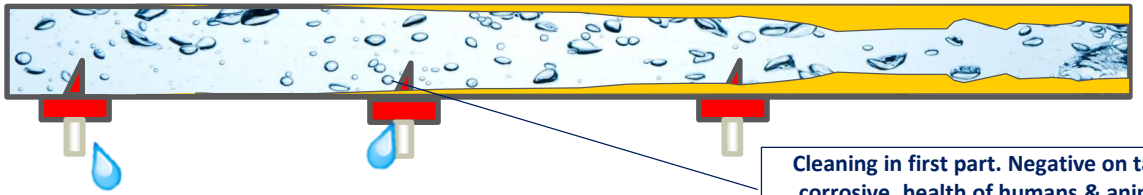
Cleaning capacity

Polluted system treated with chlorine or acids



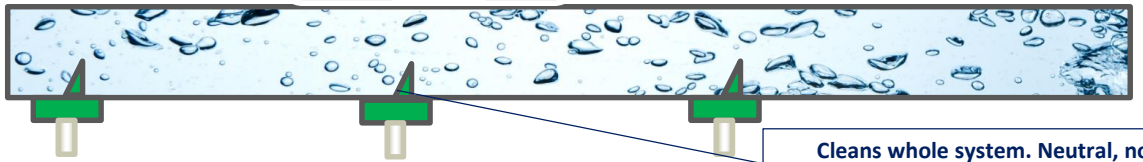
No cleaning. Negative on taste, corrosive and animal health/ environment. Constantly dosed.

Treated with peracitic acids



Cleaning in first part. Negative on taste, corrosive, health of humans & animals and environment

Treated with IntraHydrocare



Cleans whole system. Neutral, not corrosive, PT02 – 05 (safe & effective)

The European BPD regulations

The CTGB is the competent authority regarding the registration of Biocidal products in Europe (Netherlands)

- **PT02 – Private area & Public health**
- **PT03 – Animals**
- **PT04 – Food and feed**
- **PT05 – Drinking water**

You can control by yourself if a product is approved, effective and save.

ctgb

www.ctgb.nl

The European BPD regulations

ctgb College voor de toelating van gewasbeschermingsmiddelen en biociden

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organisation | pesticides and active substances | application | contact

Ctgb > Pesticides and active substances > Pesticides database > Search pesticides

Online help pesticides database

search pesticides | biocidal product-types | standard reports

Search result pesticides databank

Registration number	13279		
Product name	Intra Hydrocare		
Status	~~Authorised~~ pesticide		
Category	Biocidal products		
Type of use	professional		
Expiry date	01-01-2020		
Date first authorisation	08-01-2010	**Year first authorisation**	2010
Period of grace on the market		**Period of grace for use**	
W-code		**Date W-code**	
Formulation	Soluble concentrate		
Holder of authorisation	Intracare B.V.		
Active substance	hydrogen peroxide	**Content/Unit**	590 G/L

Biocidal product-type(s)

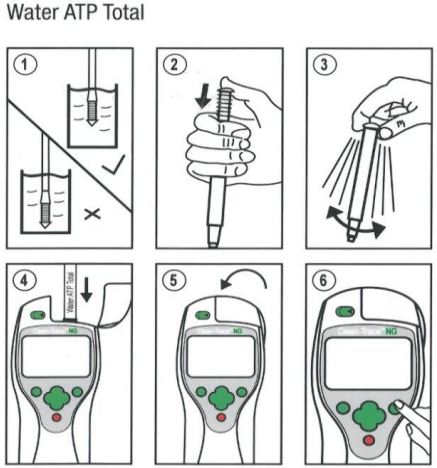
Code Description

PT02 - Private area and public health area disinfectants and other biocidal products
PT03 - Veterinary hygiene biocidal products
PT04 - Food and feed area disinfectants
PT05 - Drinking water disinfectants

With regards to this product the following decisions are electronically available (in Dutch):

Authorisation decision/ Description
Change of authorisation / 05-10-2012
Change of authorisation / 01-06-2011
Change of authorisation / 08-10-2010
New authorisation / 08-01-2010

Intraclean Quick Scan



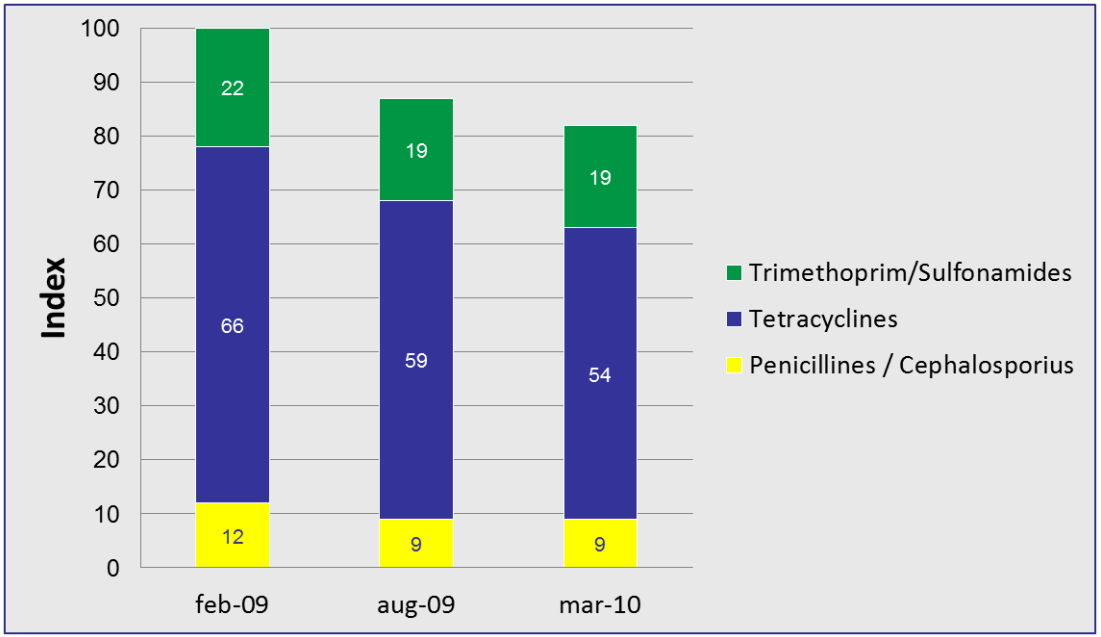
Drinking water:

Type of sample	RLU value
Good for human consumption	< 70
Good water in animal housing	< 300
Okay – poor water quality → monitor intensively	300 - 500
Questionable water quality → action required	500 - 1000
Problems occurring → immediate action needed	1000+

Test results Hydrocare

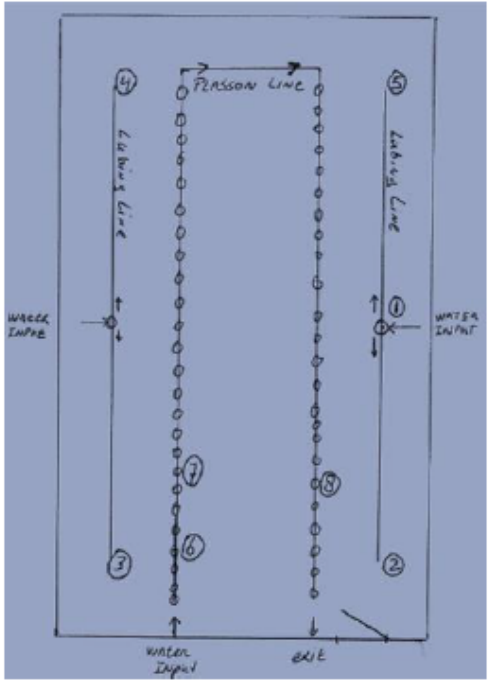
Reduction antibiotics by using Intra Hydrocare

Cleaning empty house 2% for 12 hours and during cycle 100 ml/1.000 ltr drinking water
Trial done in cooperation with Ramon Agro Ltd: 4 Russian Poultry Integrations
(Febr. 2009 – March 2010)



- Reduction of antibiotics: after 6 months: 13%, after 1 year: 18%
- In particular the Tetracyclines are reduced seriously (Colistine, Oxytetraclyclines): Gram negative bacteria (E-Coli, Salmonella)
- Especially in the start (first week) we can reduce the amount of antibiotics seriously. Starting with a clean drinking system avoids infections in first week. Reduction of preventive use of antibiotics

Trial Schlüter (house 2)



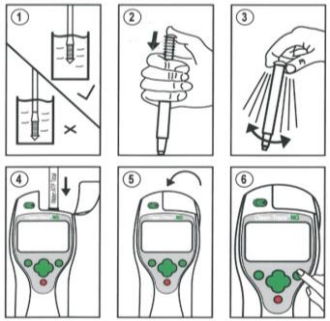
Measuring point	Before Hydrocare treatment	After Hydrocare treatment
1	1.345	15
2	1.009	22
3	1.362	8
4	414	32
5	586	44
6	2.231	7
7	1.181	3
8	2.921	4
Breather unit	18.290	5

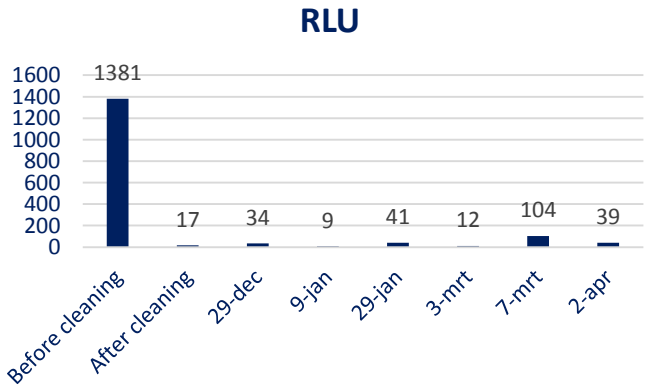
The RLU measurements before treatment were between 414 and 2.921, giving an average at the 8 measuring points at 1.381 RLU, meaning "problems occurring".

After treatment with 3% Intra Hydrocare brought the values down to 3 and 44, an average at the 8 measuring points of 17 RLU, meaning "good for human consumption".

RLU (house 2) remains “human grade” during 16 weeks

Water ATP Total





- No Pseudomonas problems during the round
- More healthy and fit
- > 20% reduction on medicines. Saving > € 0.10 / turkey.
- The turkey hens have grown on average by an ADG of 97 gr
  ➔ best round ever, water can’t longer be the problem

www.intra-hydrocare.nl

Appreciate your attention!