PLANET INNOVATION

POULTRY REARING

AREAS OF APPLICATION

IN POULTRY REARING

Examples

- HATCHERY
- KEEPING OF LAYING HENS
- BROILER FATTENING
- CLEANING AND DISINFECTION OF THE FEED LINES
- CLEANING AND DISINFECTION OF THE WATERING LINES
- STABLE CLEANING AND DISINFECTION
- DISINFECTION OF BEDDING
- CIP AREAS (WATER AND WASTEWATER LINES)
- STABLE DISINFECTION VIA FOGGING
- PERSONAL HYGIENE

OBJECTIVE

>> Significant reduction in the spread of viruses, germs and mites in the chickens' feathers

>> Increase in slaughter weight

>> Faster and more effective cleaning and disinfection

>> Less empty chicken coops, as there is no requirement to air out chemical odours and residues

>> Increase in fattening cycles

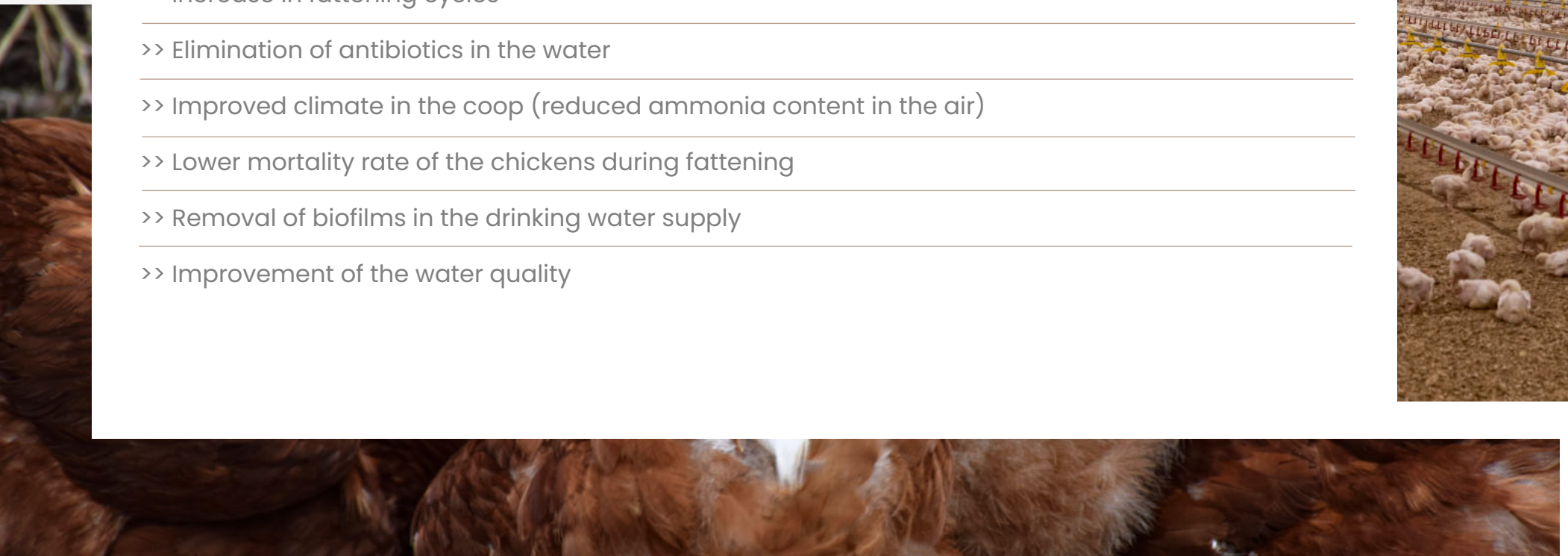
>> Elimination of antibiotics in the water

>> Improved climate in the coop (reduced ammonia content in the air)

>> Lower mortality rate of the chickens during fattening

>> Removal of biofilms in the drinking water supply

>> Improvement of the water quality



POULTRY REARING

OUR SERVICE

ASSESSMENT AND DETERMINATION OF THE ACTUAL CONDITION

EVALUATION AND PROBLEM ANALYSIS OF POSSIBLE VULNERABILITIES

SOLUTION CONCEPT IN A HOLISTIC CONTEXT

>> Creation of individual cleaning plans (formulas)

>> Training of employees on documenting processes and abnormalities in a protocol

>> Regular service visits to the production site

>> 24/7 Support (by phone and in person)

>> Semi-annual employee training in the field of:

- >> Safe handling of chemicals
- >> Why clean?
- >> How do you clean properly?

1

PLANET STRONG, PLANET FOAM IN PRACTICE AT A FATTENING PLANT

Together with the customer we developed an individual hygiene concept for the cleaning and disinfection processes, following an on site visit to the chicken farms. Our application technician was continuously on site during the conversion of the processes and went through all work steps with the employees.

Once the entire stalls had been cleaned with Planet Foam and Planet CIP, the product Planet Strong was used for the disinfecting process.

The floor, the fans, lamps, feed lines and wastewater tanks were all disinfected.

Figure 1:
After cleaning

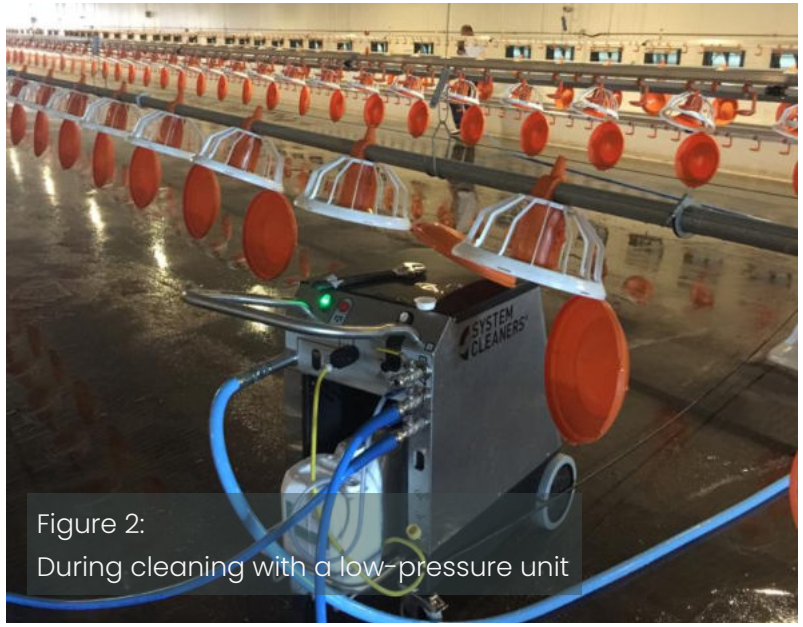


Figure 2:
During cleaning with a low-pressure unit

Figure 3:
Feeding trough after cleaning

2

PLANET STRONG, PLANET FOAM IN PRACTICE AT A FATTENING PLANT

The following benefits have been achieved at the fattening plant through cleaning and disinfection by Planet Innovation GmbH:

- **INCREASE OF THE SLAUGHTER WEIGHT BY 2.5 - 5%**
- **INCREASE OF FATTENING CYCLES FROM 6 TO 7 PER YEAR**
- **ELIMINATION OF ANTIBIOTICS IN THE WATER**
- **20-35% LOWER MORTALITY RATE OF THE CHICKENS DURING FATTENING**
- **FASTER AND MORE EFFECTIVE CLEANING AND DISINFECTION**

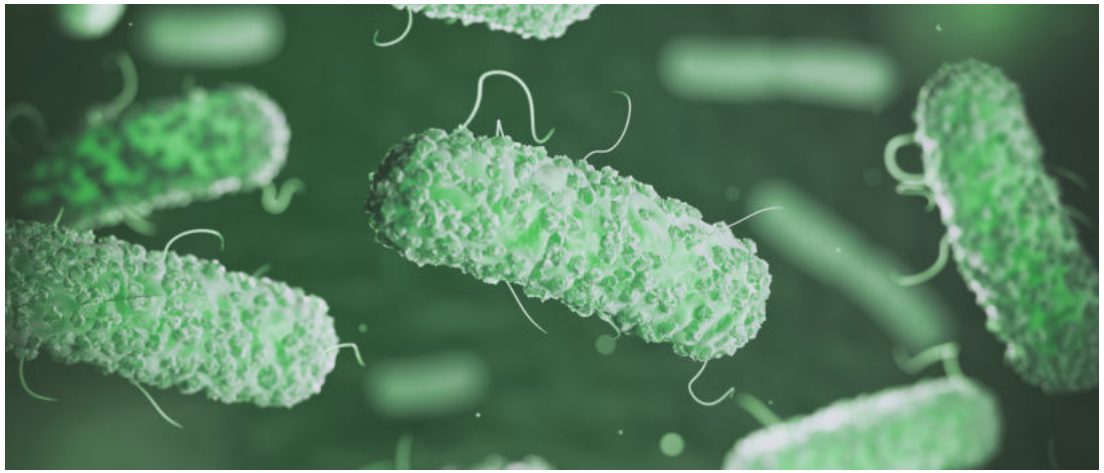
The cleaning and disinfection process is completely safe for both the animals and the cleaners because Planet products do not require hazard identification.

BIOFILM REDUCTION AND PREVENTION BETWEEN THEORY AND PRACTICE

WHAT IS ELECTROCHEMICAL ACTIVATION?

ECA stands for Electrochemical Activation. Our Planet products are electro-chemically activated solutions produced using a specifically designed system. This involves passing a saturated, highly pure saline solution through a cell and converting the sodium chloride into hypochlorite through the process of electrolysis. Our Planet products have high level of antimicrobial efficacy.

The issue of biofilm formation plays a central role in the field of drinking water safety and food production. Complex structures composed of different microorganisms pose a significant challenge for cleaning agents and disinfectants. There is a significant risk of exposing people to a high microbial load of potentially harmful pathogens if these are not completely removed or if their development is not prevented.



BIOFILM REDUCTION AND PREVENTION BETWEEN THEORY AND PRACTICE

The project "Prevention and Remediation of Drinking Water Contamination by Hygienically Relevant Microorganisms from Biofilms in Domestic Installations" funded by the Federal Ministry of Education and Research (Bundesministerium für Bildung und Forschung - BMBF) investigated the effectiveness of ECA products on biofilm removal.

Table 1 illustrates that with continuous disinfection with 0.3 mg/l (according to the German Drinking Water Ordinance, 2001) in a system with a 2-year-old biofilm, no further colony-forming units can be detected within 70 days (0 CFU/cm2).. System disinfection using 25 mg/l resulted in no colony-forming units being detected after 6 hours. (1, Page 205)

Type	Concentration [mg/l]	Application time	CFU/cm2 (after application)	TCC/cm2 (after application)
Initial values			> 10^6	> 10^7
Continuous	0,3	70 days	u.N.	4,0 x 10^5
Plant disinfection	1	6 hours	2,5 x 10^4	5,3 x 10^6
	10	6 hours	5,2 x 10^1	6,1x10^4
	25	6 hours	u.N.	u.N.

Table 1 Efficacy testing of an ECA procedure

SUMMARY OF THE RESULTS OF THE CHEMICAL DISINFECTION PROCEDURES

When handled correctly a reduction of CFU/cm2 up to the detection limit is possible with all of the products tested.
However, at the concentrations tested, the TCC/cm2 could only be minimally reduced in most cases.

A reduction of TCC/cm2 up to the detection limit ".could only be achieved using chlorine from the ECA process at a concentration of 25 mg/l...". (1, page 205) Figure 1 shows a 2-year-old biofilm and the reduction achieved using the ECA product. (1, Page 209)

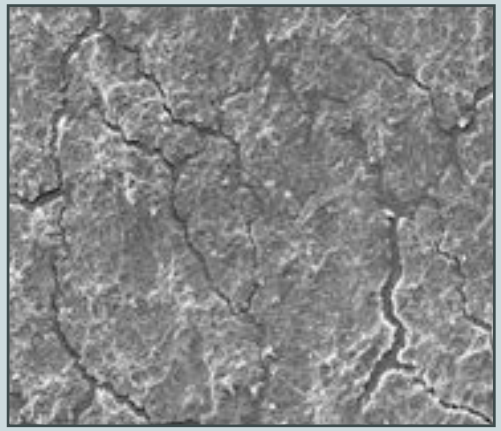
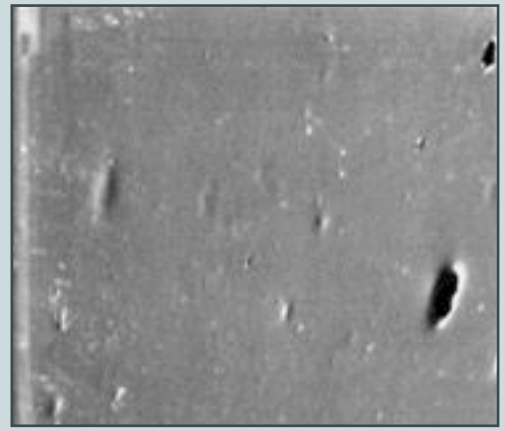
2-year-old biofilm		Biofilm after continuous treatment with 0.3 mg/l free chlorine (ECA)	

Figure 1 Scanning electron microscopic images of silicone tubing surfaces (magnification 1,000x)
Source: https://www.cleaner-production.de/fileadmin/assets/02WT0832_-_Abschlussbericht.pdf (Stand April 2021)
Publisher Umweltbundesamt Fachgebiet III 2.4 (Waste technology, Waste technology transfer)
Wörlitzer Platz 1, 06844 Dessau-Roßlau, Germany

CFU = colony-forming units
TCC = total cell count
(No difference between living and dead cells)

PLANET STRONG

LIQUID DISINFECTION WITH A SANITISING PROPERTIES

Planet Strong is a highly effective and efficient broad-spectrum disinfectant concentrate with a water base from active chlorine released from sodium hypochlorite. Planet Strong also has sanitising properties and is very effective against biofilms. It is ideally suited for use in animal husbandry, for example in drinking lines, disinfection of straw, disinfection of drinking water in stable fogging, as well as on all contaminated surfaces. The disinfecting component has a broad efficacy spectrum against gram-negative and gram-positive bacteria. Planet Strong demonstrates excellent results particularly with listeria, salmonella and E. coli. It is a very effective penetrator enabling disinfection in places that are normally not accessed by conventional disinfectants (e.g. porous surfaces). Planet Strong is also highly effective against avian flu and swine fever.

- SHORT APPLICATION TIMES
- BROAD EFFICACY SPECTRUM
- FIGHTS BIOFILMS
- ELIMINATES ODOURS

OVERVIEW OF THE CLEANING AGENTS AND AREAS OF APPLICATION

	Planet Strong	Planet FOAM	Planet CIP
Hatchery	✓	✓	
Keeping of laying hens	✓	✓	
Broiler fattening	✓	✓	
Feed lines	✓	✓	
Drink lines	✓		✓
Stable cleaning and disinfection	✓	✓	
Bedding disinfection	✓		
CIP areas (water and wastewater lines)	✓		✓
Stable disinfection via fogging	✓		
Personnel hygiene	✓		
CONTAINER SIZES			
Canister	✓	✓	✓
Barrel	✓	✓	✓
IBC	✓	✓	✓

CERTIFICATES

DERMATEST

PLANET STRONG

HALAL

PLANET STRONG
PLANET CIP
PLANET FOAM

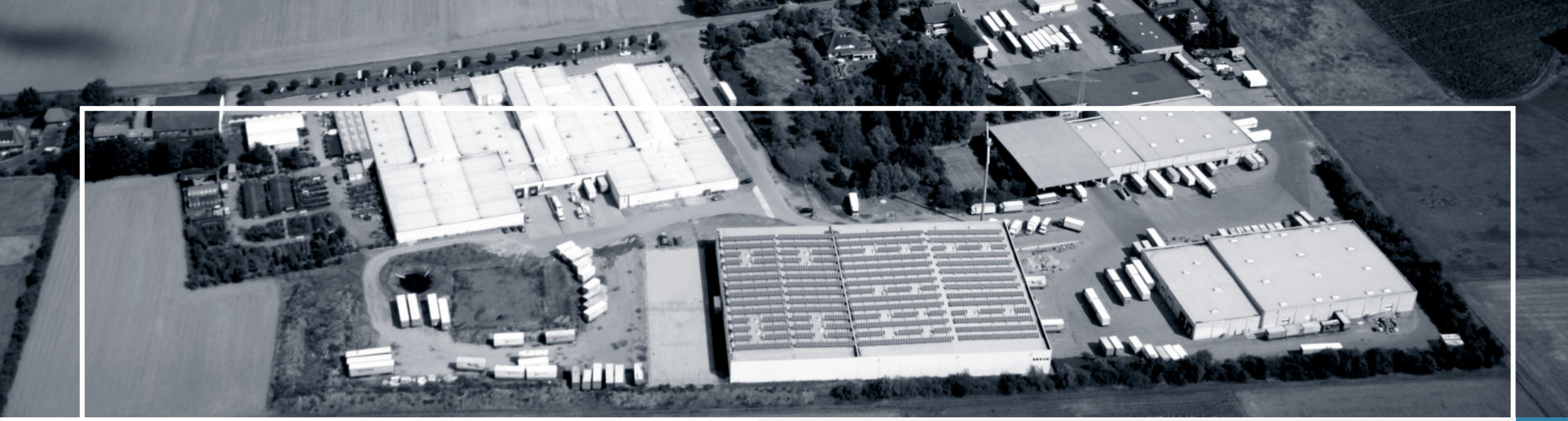
IHO

PLANET STRONG

KOSHER

TCA 400	TFA 200	TFA 207 CL	TMA 13
TCA 402	TFA 201	TFA 208	TME 5
TCA 403	TFA 202 CL	TFS 100	TMS 1
TCS 300	TFA 203 CL	TFS 101	TXN 950
TCS 301	TFA 204	TFS 102	TXN 951
TDA 800	TFA 205	TFS 203	TXN 952
	TFA 206	TMA 11	

TCA 400	TFA 200	TFA 207 CL	TMA 13
TCA 402	TFA 201	TFA 208	TME 5
TCA 403	TFA 202 CL	TFS 100	TMS 1
TCS 300	TFA 203 CL	TFS 101	TXN 950
TCS 301	TFA 204	TFS 102	TXN 951
TDA 800	TFA 205	TFS 203	TXN 952
	TFA 206	TMA 11	



GET TO KNOW US

THE PLANET INNOVATION

Planet Innovation GmbH considers itself a cross-sector system provider and, in cooperation with technical experts, develops genuine alternatives to alcohol based disinfection and cleaning products that are beneficial to the environment, humans and animals.

We offer our customers an innovative and sustainable hygiene and safety concept, as well as preventive infection control, which fulfils the requirements of present day conditions, regulations and all those involved.

www.planet-innovation.de

PLANET
INNOVATION

WE'RE HERE FOR YOU!

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