



## Biofilm elimination



### Biofilms:

Biofilms and scale in water pipes and fittings are the perfect habitat for establishment of pathogens. Bacterial colonies produce exo- and endotoxins that continuously affect animal health. Production often stagnates and declines without medical treatment. Cleaning only helps for a short time and biofilms continually re-form. A never ending vicious circle without, until now, any cost effective solution.

### Solution:

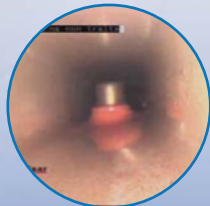
Aqua-4D® prevents the adhesion of biofilms to pipes, fittings and drinking systems by detaching the sticky protein substance. Within three months of treatment, existing biofilms are flushed out of the pipes and fittings and do not build up again. Drinking water becomes clear. The vicious circle is broken

### Animal production:

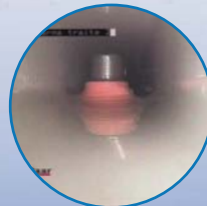
The animal body is not flooded by toxic bacteria anymore, coming from the water. The animal often drinks more water. The water balance of the animal is stabilized and the nutrition is easier adsorbed. The digestion is normalized. The animals are healthier, the production significantly improved and stabilized.

### Production facility cleaning:

Scaling and blockages in pipe fittings and drinking water equipment are eliminated. A simple flushing and rinse regime is sufficient to clean all production facility pipes, fittings and receptacles. You do not need to use aggressive chemicals. Costly and time consuming interruptions for cleaning become a thing of the past.



Biofilm before  
Aqua 4D® installation



Clean pipe 6 weeks  
after installation



## Satisfied customers...

« ... no more biofilm after 6 weeks ... »

... Since March 2007 I have treated my spring water using Aqua-4D®. Within 6 weeks all biofilm was washed away. The production facility fittings and associated sanitary areas have been free of biofilm ever since. The performance of my animals (sow breeding, dairy cattle) has become much more reliable and predictable.

Germany, Sow breeding and Dairy cattle Willenbrink, Cloppenburg

« ... significantly increased chickens production ... »

The animals suffer less from enteric problems, have put on weight faster and losses have declined. The bedding is dryer, so the hygienic situation has improved permanently. The production rate has increased significantly and the Aqua-4D® treatment system has paid for itself within a very short time.

Germany, Agrar Service GbR, Emsland



## Advantages of biofilm elimination

### Improved food conversion ratio and healthier animals

The danger of illness due to toxins in the water supply is minimized by the complete elimination of biofilm. Animal metabolism is optimised and food conversion ratios are better. Animals are more resistant to disease and climate variations. Medication is reduced to the absolute minimum.

### Improved stable production

Many customers confirm increased performance: In chicken rearing, the advantages are particularly apparent and rapidly seen. Milk production also increases significantly. The Aqua-4D® installation pays for itself within a very short time.

### Protection of equipment - reduced cleaning costs

Aqua-4D® eliminates deposits and prevents corrosion. The ability of the water to dissolve minerals is significantly increased. Crystalline residues on fittings and drinking-water equipment are minimised. Time-consuming cleaning of biofilms and calcium deposits in pipes using chemical and mechanical means can be stopped. You can save yourself expensive chemicals and a lot of time.