



Raising Calves for the Future

Innovation in Automated Feeding

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1 Introduction and company presentation



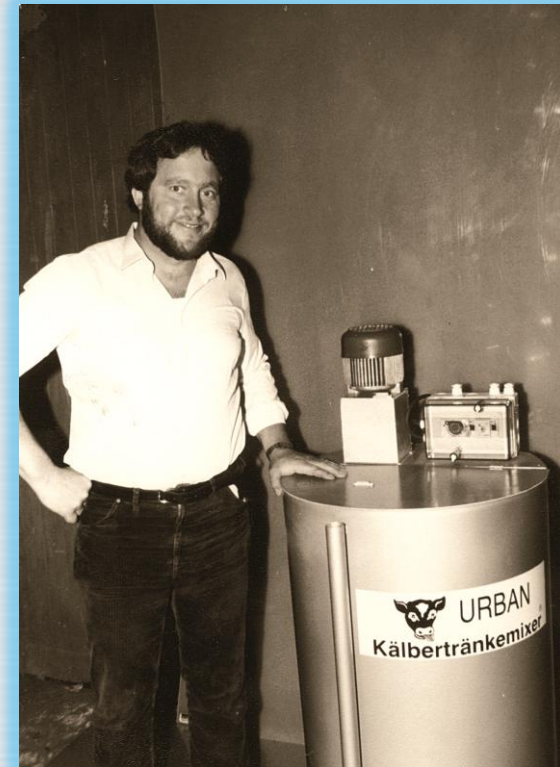
Our products are manufactured here



Over 40 years of calf feeding experience



- 1984: Founding of the Urban company for the distribution and production of calf feed mixers in the barn on the dairy farm Urban



Over 40 years of calf feeding experience



- 2002: First automatic feeder U20 with integrated teat and teat disinfection



- 2008: the first MilkShuttle

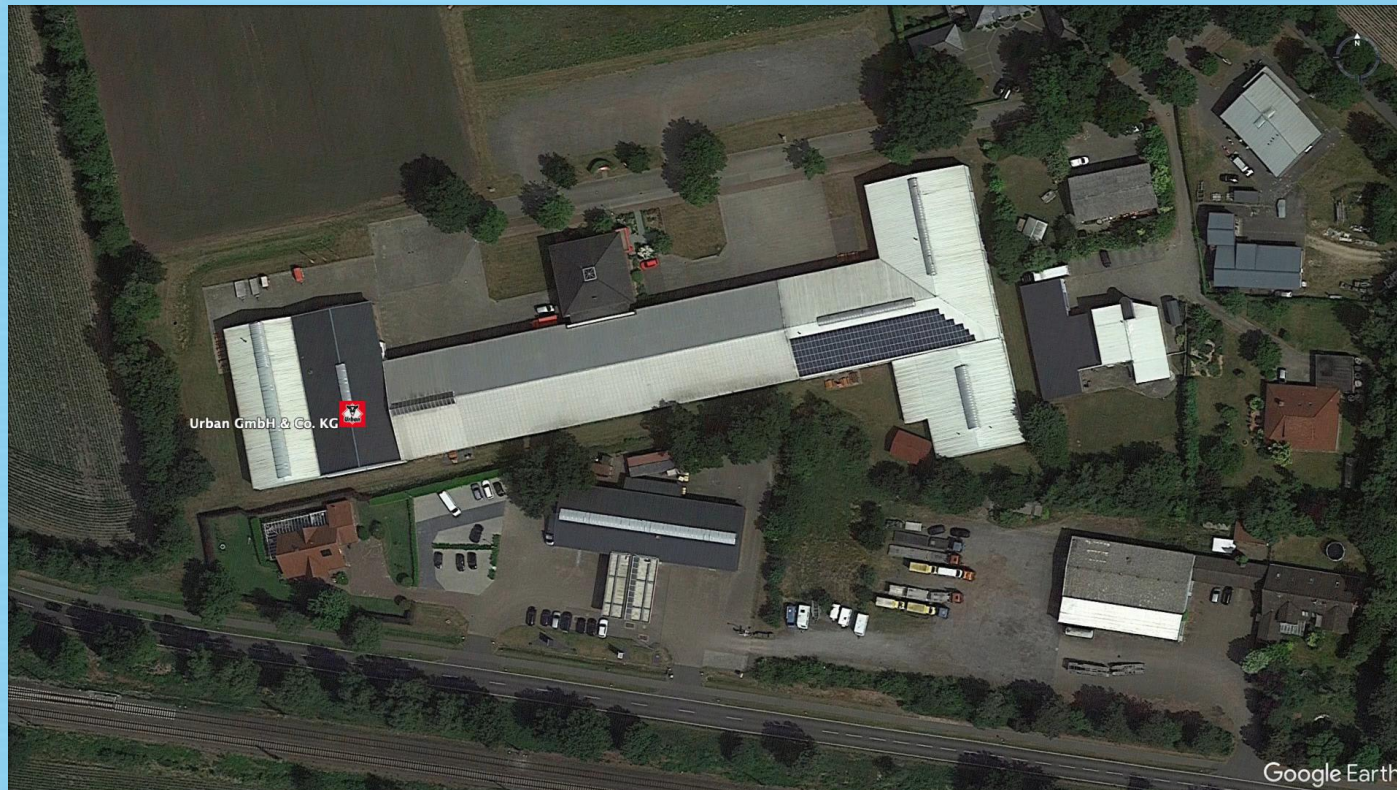
Large product portfolio



Globally active



- Today active in over 60 countries with a good dealer network





2 Alma Pro

Solution for automatic calf feeding



Feeding with the Alma Pro



- Flexible and individual feeding times for each animal
- Perfect milk temperature at the teat
- Natural small portions
- Consistent milk quality
- Optimal drinking position thanks to teat inclination
- Intelligent health monitoring



Constant temperature

- Sensors monitor the milk temperature in the ring line
- If necessary, the AlmaPro pumps the milk and ensures that each animal has the optimum drinking temperature
- The temperature can be adjusted to the CMR requirements





Group Housing

- Group Housing direct after Colostrum
 - Higher gains
 - Better growth rates
 - Improved animal health
 - Easier stress management
 - Social interactions
 - Better learning and adaptability



Health Monitoring



- User-friendly traffic light rating system with school grades
- Evaluation is carried out using complex algorithms, presented in a simple and comparable way
- Evaluation of several factors:
 - Station interruptions
 - Drinkingspeeds
 - Timing/punctuality
 - Feeding behaviour
 - Activity
- Treatment documentation

Tier-Nr	Gesundheit	Futter	Standort
32	1.0	1.0	1.5.1.1
33	1.0	1.4	1.5.1.1
34	1.0	1.0	1.5.1.2
35	1.0	1.0	1.5.1.2
36	1.0	1.0	1.5.1.2
37	1.0	3.5	1.5.1.2
38	1.0	1.3	1.5.1.2
39	1.0	1.0	1.5.1.2



7-day feeding overview

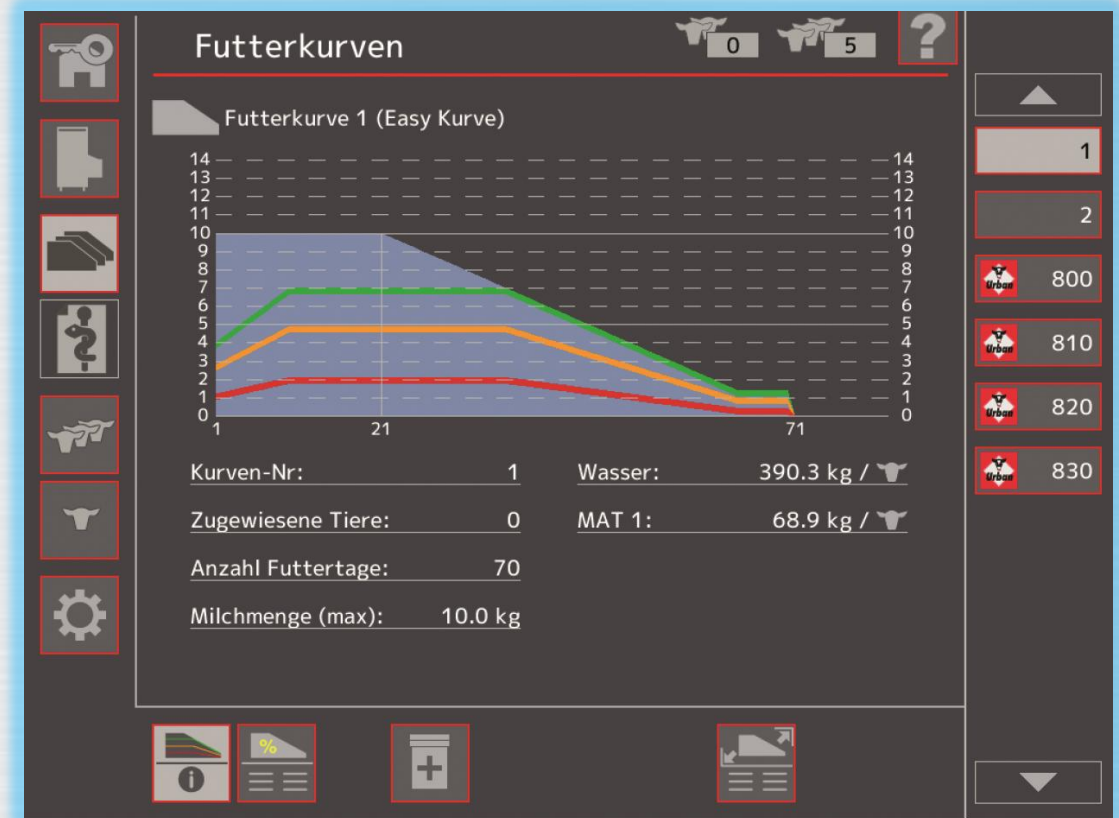
- Simple overview of each animal
- Every visit can be tracked
- Feed entitlement and quantities consumed visible at a glance
- Health details can be accessed specifically



Feedplan



- Simple, individual settings for feeding curves
 - Feeding quantity
 - Duration of feeding start
 - Number of feeding days
 - Variable dry matter content in the curve
 - Mixture of powder and fresh milk
 - Weaning duration and speed
 - Feeding temperature



Summary AlmaPro



- Fully automated feeding
- Accurate, plannable, and comparable monitoring
- Permanently warm milk available for every calf
- User-friendly touch terminal
- Fully automatic cleaning system



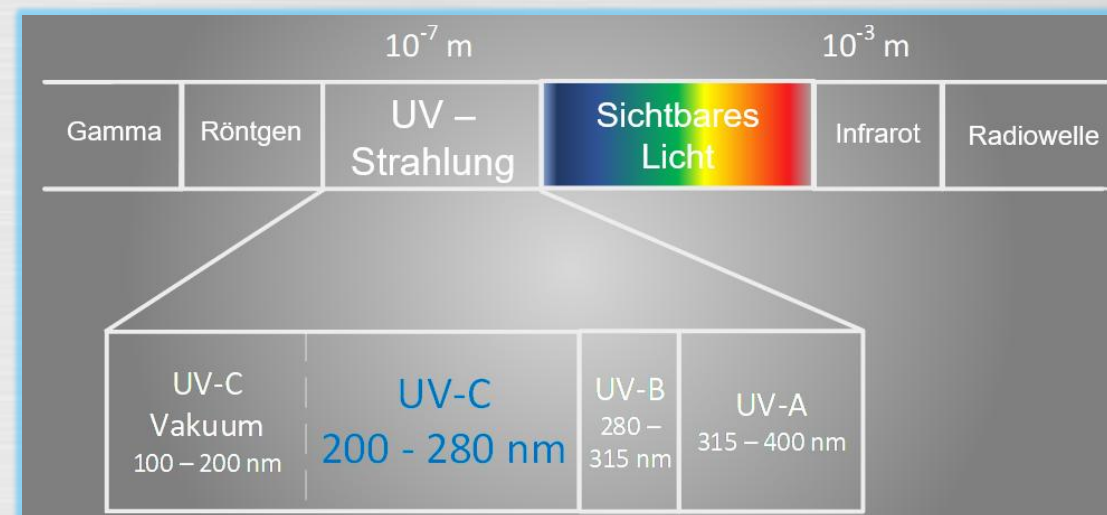
3 UV-C Disinfection





Why using UV-C?

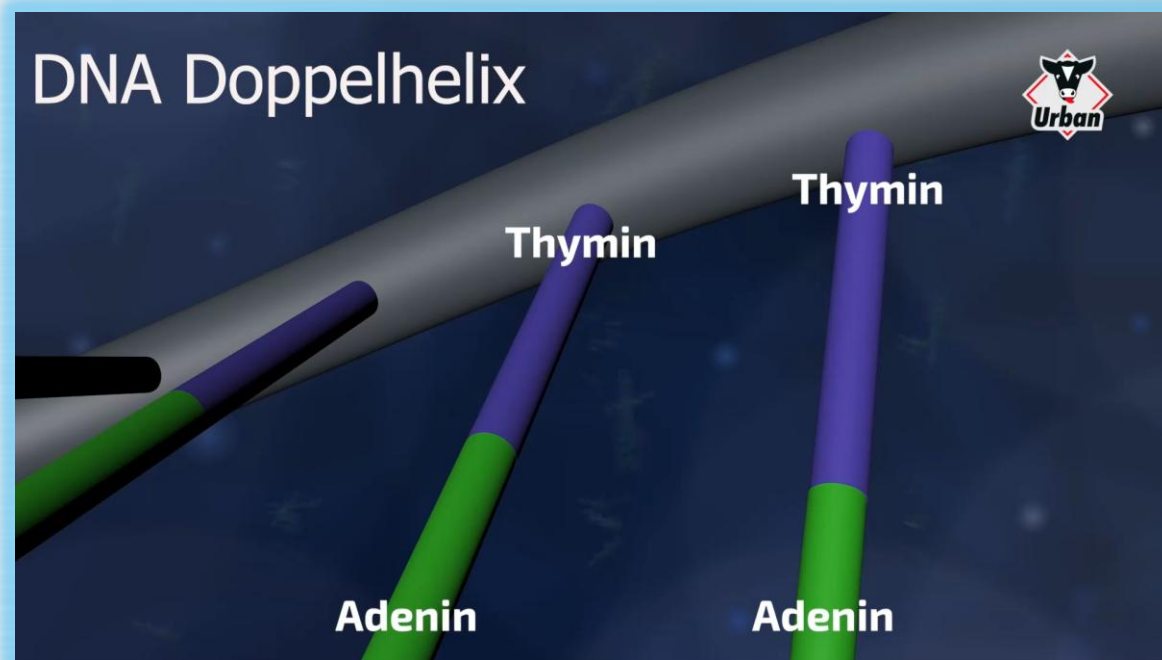
- Effectiveness of conventional disinfectants depends on temperature
(not guaranteed or limited below 10°C)
- Average temperature in Czech Republic in 2024: 10.3°C
 - 109 days below 10°C in Germany in 2022
- UV-C is an optical radiation with a wavelength (λ) between 200 and 280 nanometers (nm)
- UV radiation (100 to 400 nm) is not visible to the human eye





What is special about UV-C?

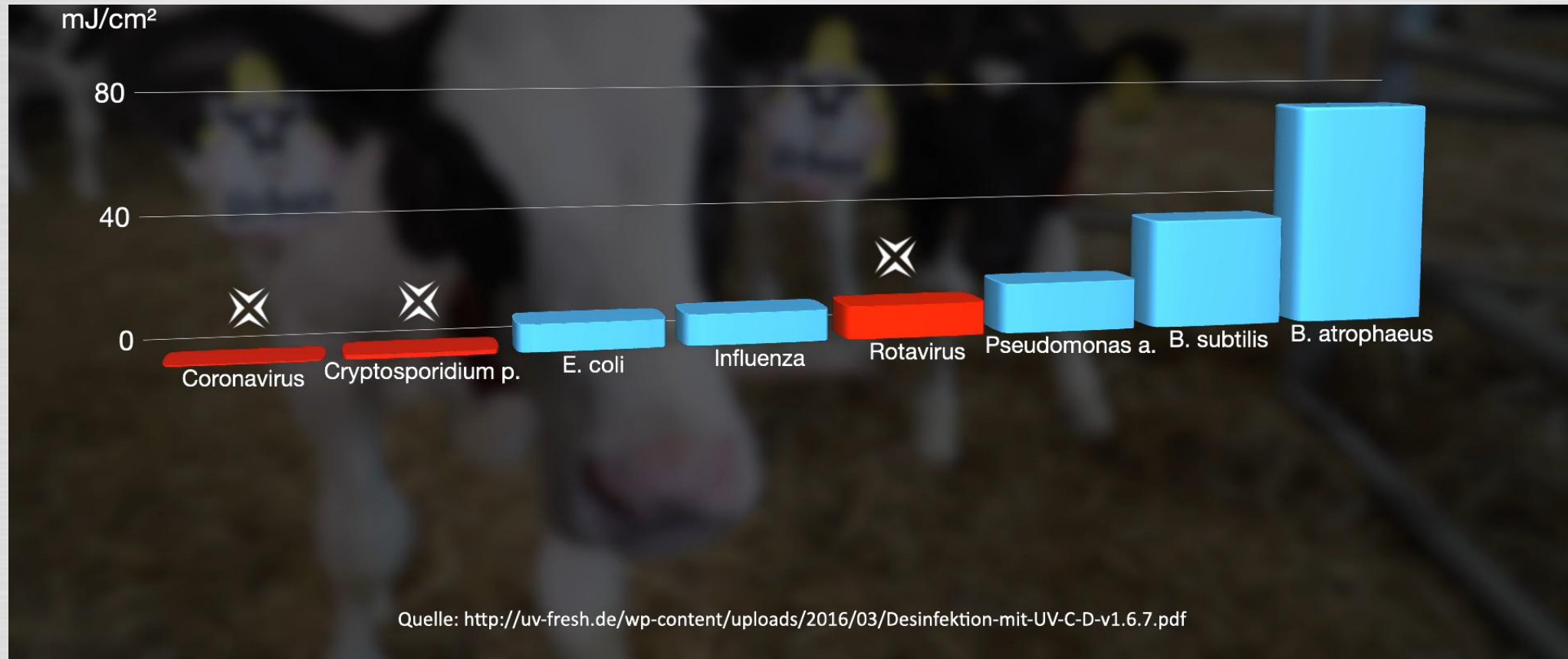
- UV-C is not temperature-dependent
- No development of resistance
- Penetration depth limited to the surface
- Mode of action targets genetic material



UV-C dose required for 99,9% germicidal effect



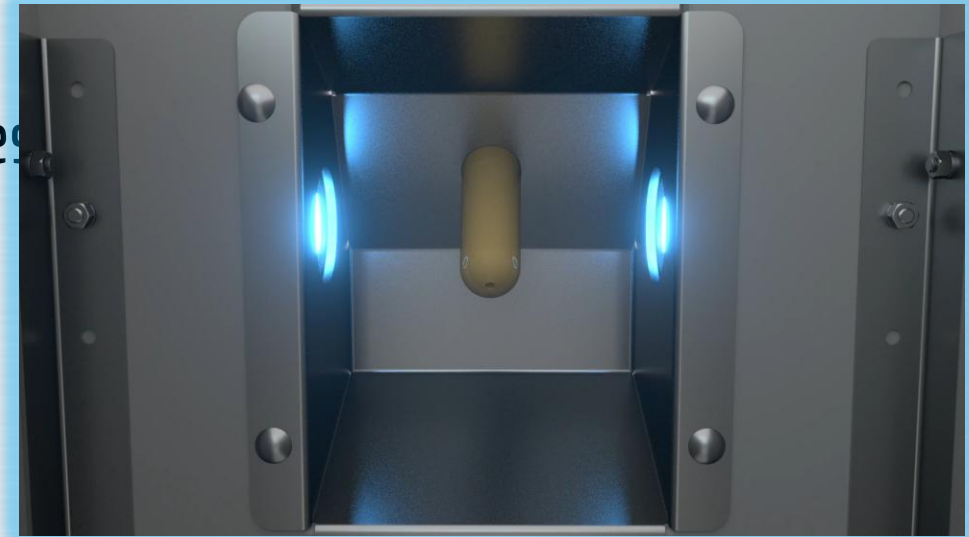
- Germs that are harmful to calves are extremely UV-C sensitive



AlmaPro HygieneSet^{UV-C}



- Simple, automated use of UV-C in calf pens
- Germ-free water and constantly disinfected teats ensure healthier calves
- Fast, chemical-free, temperature-neutral and energy-saving disinfection using UV-C light
- Effectiveness scientifically proven



AlmaPro HygieneSet^{UV-C}



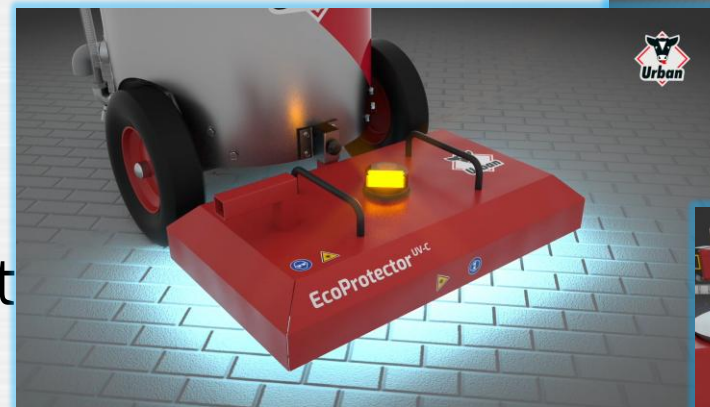
- Irradiation unit in the boiler for destroying germs in the boiler water



Urban EcoProtector^{UV-C}



- Rear attachment for the Urban MilkShuttle
 - Two different mounting positions
- UV-C-based disinfection unit for sanitising the calf rearing environment
 - Fast
 - Chemical-free
 - Energy-saving
 - Temperature-independent



Eco Protector^{UV-C} in use



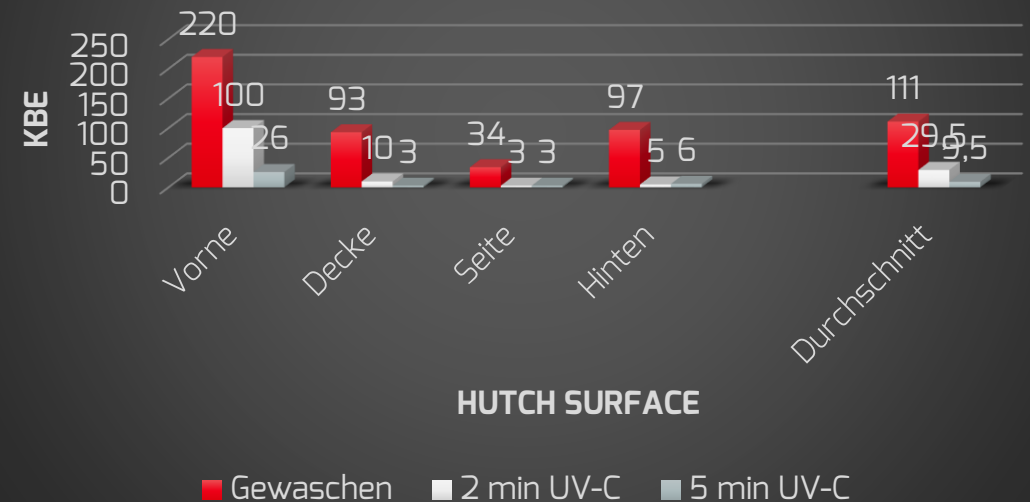
EcoProtector^{UV-C} Effectiveness on hutches



- *Bacteriological examination*
- 2 min: 73% reduction rate
- 5 min: 91% reduction rate



Germ load in the hutch after 2 and 5 minutes of UV-C disinfection





Disinfection of calf teats using UV-CLED

HygieneSet^{UV-C} examination



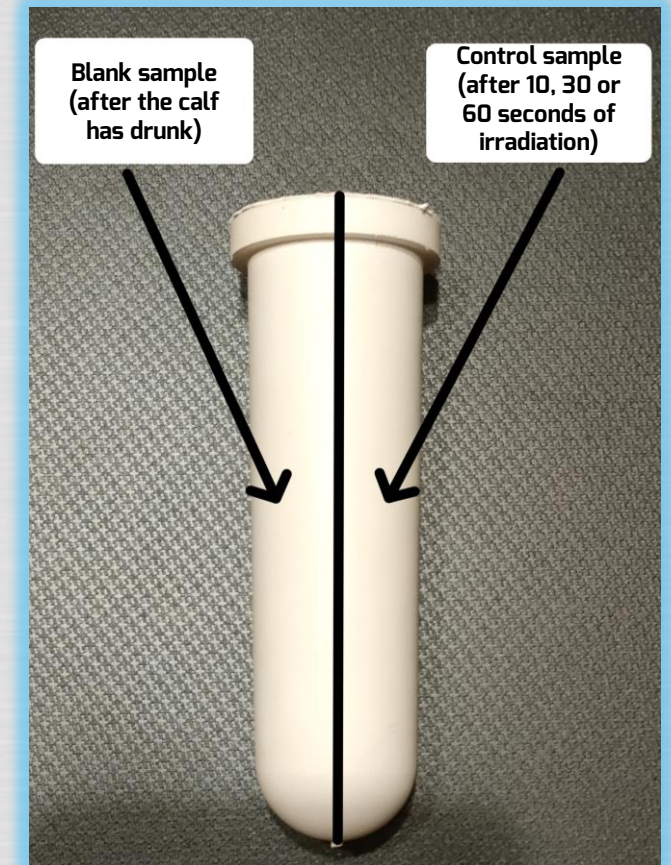
- Independent study by Osnabrück University of Applied Sciences
- Microbial examination of teats before and after irradiation
- Investigation of the effect of teat disinfection on calf health
- Location: A fattening farm in Lower Saxony/Germany (a total of 195 calves in 4 pens) with 3 feeding stations each



HygieneSet^{UV-C} examination



- In addition to health data and barn climate etc., the bacterial load of the teat was analysed:
- Half of each teat was sampled after a calf had drunk (the germs present on the teat were wiped off with a cotton swab) The teat was then irradiated, and the other half of the teat was sampled.
- This was done after 10 OR 30 OR 60 seconds of irradiation.



Bacteriology



- This resulted in a total of 291 samples, of which
- 146 samples of the unirradiated teat
- 48 samples after 10 s of irradiation
- 49 samples after 30 s of irradiation
- 48 samples after 60 s of irradiation



The samples were prepared in the laboratory, diluted and plated on agar plates

This resulted in a total of **1,382** analyzed Petri dishes from the samples



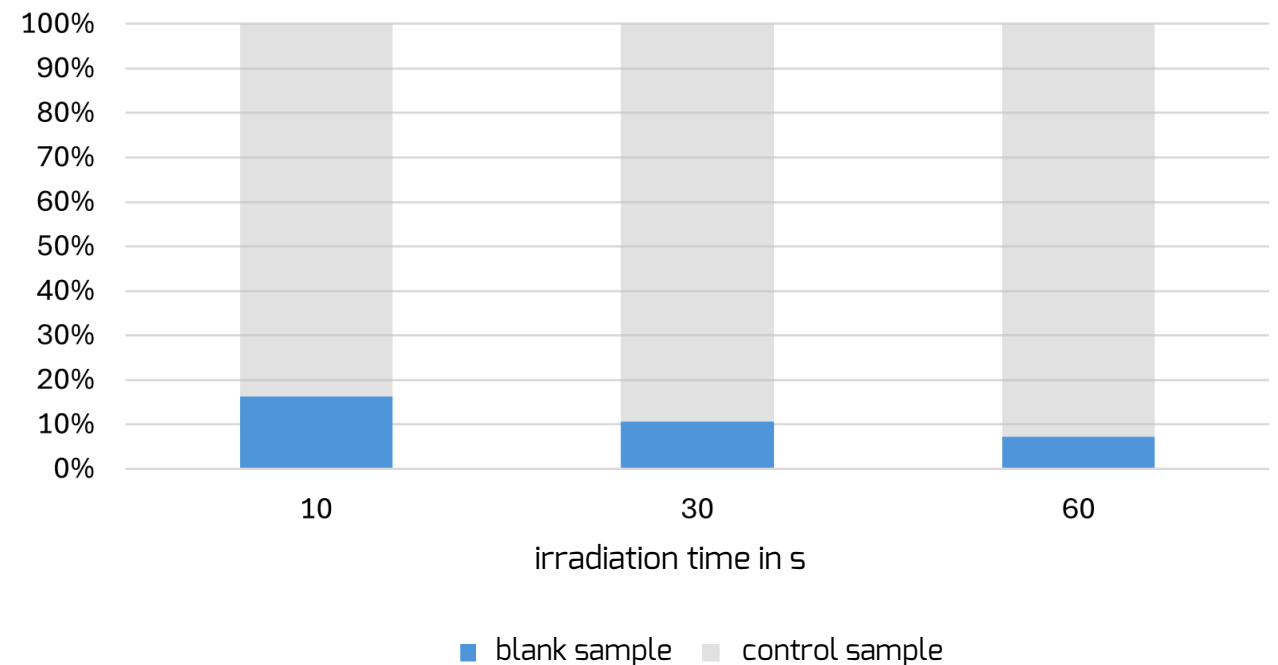
Bacteriology



Percentage reduction of the surface bacterial count by

- 83.28 % after 10 s
- 89.27 % after 30 s
- 92.68 % after 60 s

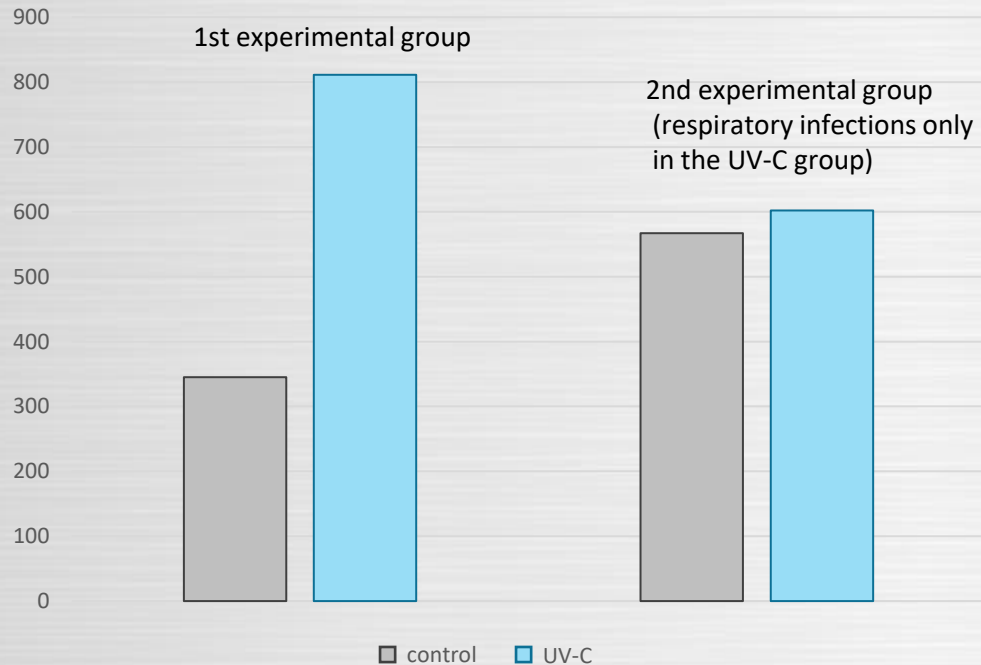
proportion of the surface germ count of the control sample to the blank sample



Weight gain



Average daily weight gain within 3 weeks (g/day)



- The average daily gain in kg was significantly higher in the group with UV-C, especially at the beginning of the rearing phase during the first 3 weeks
- 1st experimental group 0.811kg compared to 0.345 kg (466g/day more)
- 2nd experimental group 0.601kg compared to 0.569 kg (35g/day more)
- On average, the calves with UV-C disinfection showed a 249g/day higher daily weight gain in the first 3 weeks than the groups without UV-C disinfection
- In the 2nd UV-C test group, there were 25 treatment days due to respiratory infections. These infections cannot be prevented by the teat disinfection. Although the respiratory diseases only occurred in the UV-C group, the daily weight gain was still slightly higher than in the group without UV-C, which did not have this infection.

Conclusion



- Significant germ reduction achieved after just 10 s of irradiation
- Increase in disinfection performance with increasing irradiation time
- Animal health data suggest that the influence of negative stressors (other diseases) on animal performance could be reduced by teat disinfection.
- Proof of the effect of UV-C only possible via cell cultures
- Higher weight gain can lead to better cows and earlier first calving.

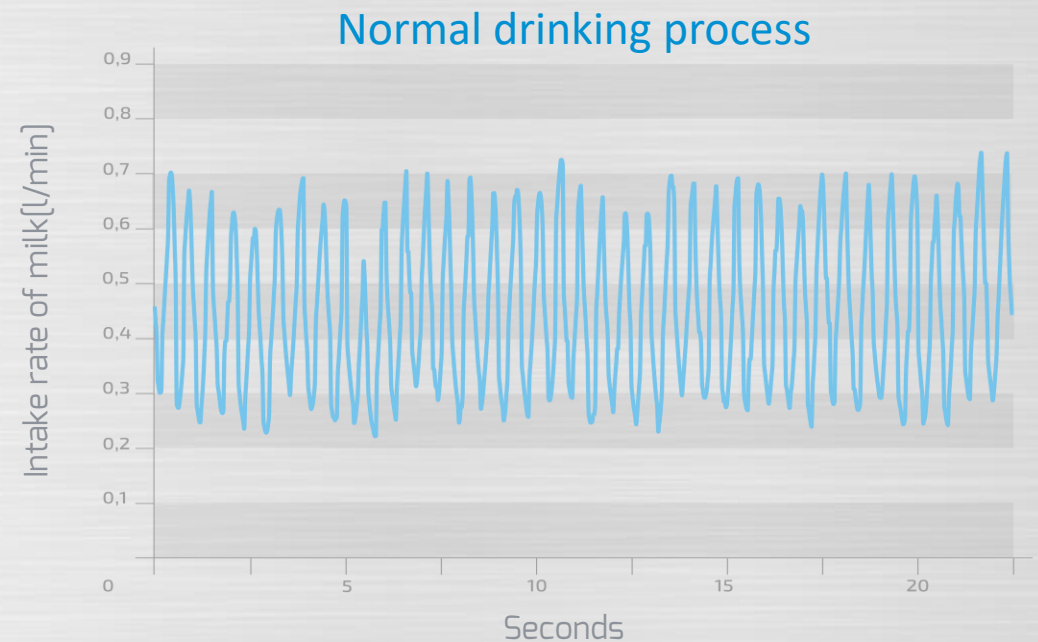
5 NEW Urban SipControl



Urban SipControl



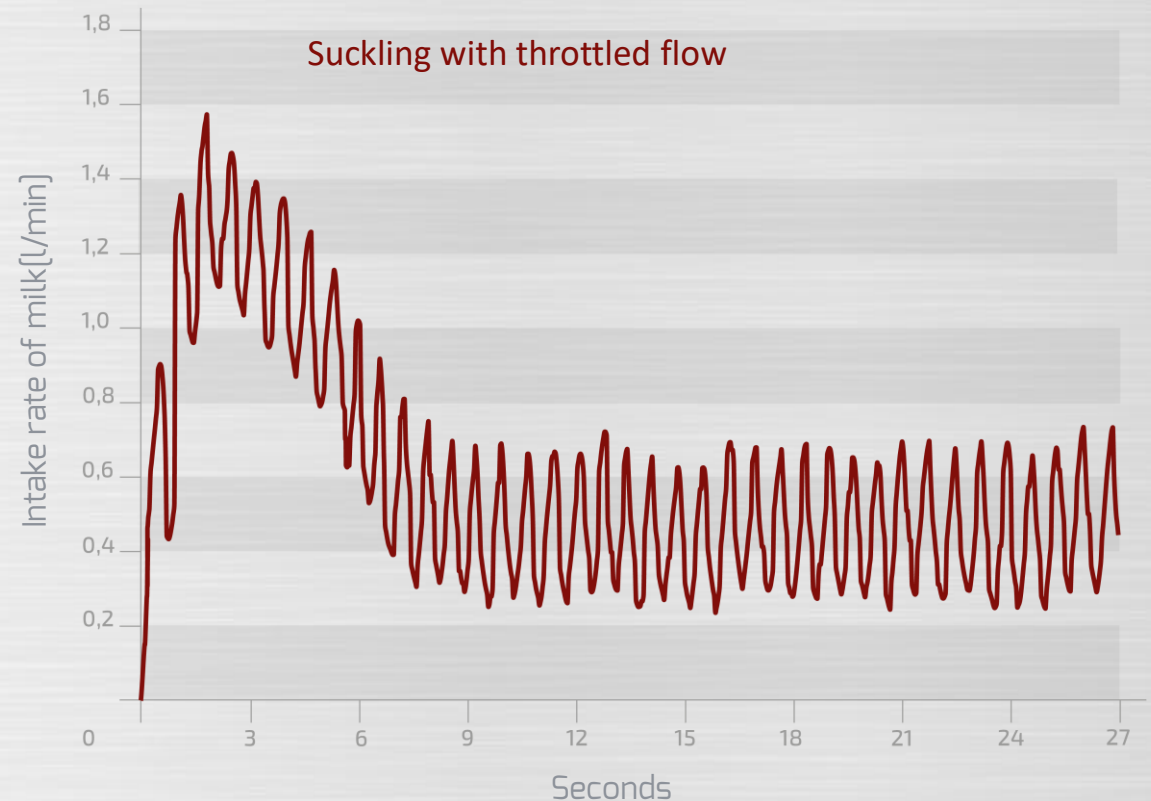
- High-resolution flow sensors are used to record periodic fluctuations in flow velocity.
 - The number of periods recorded corresponds to the number of times the calf swallows.



Urban SipControl



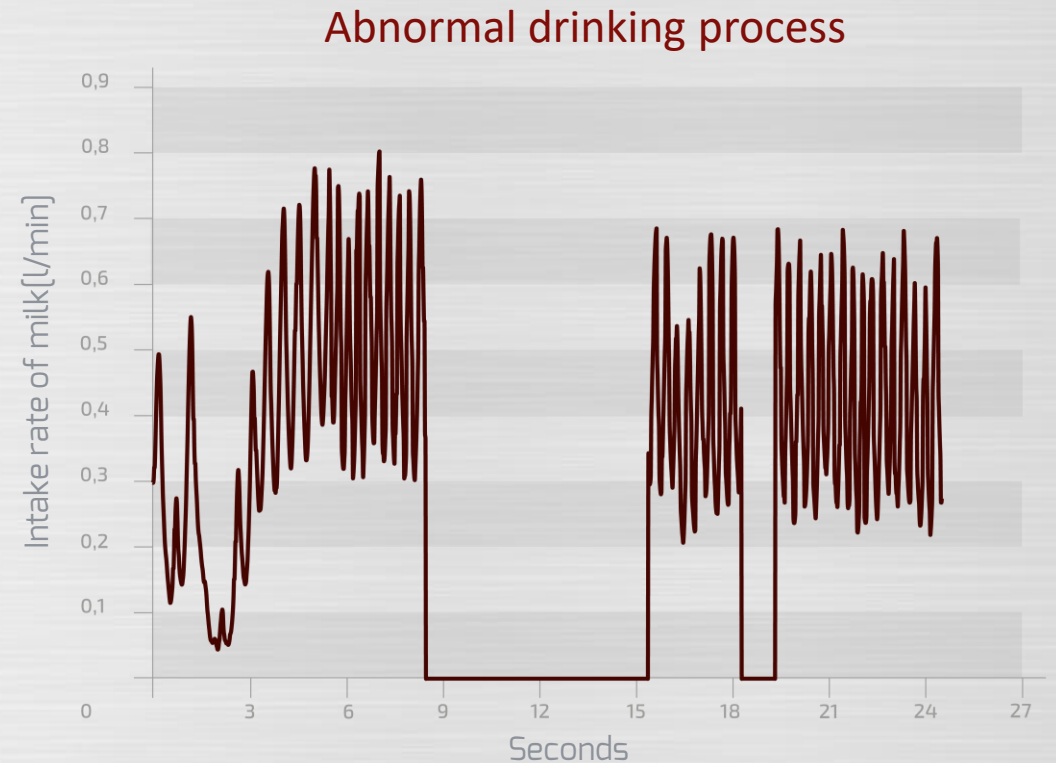
- An automatically and intelligently controlled throttle valve reduces the flow rate.
- For calves that drink quickly, Urban SipControl reduces the flow rate so that they drink slowly.



Urban SipControl



- Health monitoring
 - The Urban Alma Pro automatic feeder monitors the calves' sucking behaviour around the clock. Urban SipControl detects calves with unusual drinking behaviour and low sucking strength and marks them as animals requiring attention.



Urban SipControl



- Slow, physiologically digestible intake of drink
 - Healthier digestion
 - Better digestibility
 - Faster development of calves
- Satisfaction of the suckling instinct
- Prevention of behavioural abnormalities



6 Urban VitalControl



Urban VitalControl: Scanning process



Urban VitalControl





Thank
You!

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