

German THÜNEN INSTITUTE & DLG project: Reduction of food waste
Subproject: Alternative treatment of severe udder health issues to reduce waste milk

KEY FINDINGS

The AHV Udder Health Program has a beneficial effect on:

- Avoiding food waste (**261 kg** less waste milk per cow)
- Reduction of carbon footprint in the dairy industry
- Economy of a dairy farm
- Ease of use, single application

Compared to the use of common veterinarian products.

€1 investment in AHV brought back **€1.54** for the farmer.

INTRODUCTION

Severe udder health issues lead to veterinary costs and use of antibiotics. During and after antibiotic use, milk of the treated cow needs to be dumped.

This has an impact on food production efficiency (milk), CO₂ footprint, environmental footprint and costs for the farm. While the standard costs, like feed and labour remains the same.

BEFORE

Bacterial invasions in the udder in dairy cows are treated with antibiotics. As a result, the milk must be disposed of during the treatment period (approximately three days) and at least seven three to seven days after the treatment as so-called barrier milk. The withdrawal period for meat is much higher, which gives restrictions in removing cows from the herd.

AFTER

Bacterial invasions in the udder in dairy cows are treated with products from AHV, with AHV there is no withdrawal period which means zero waste milk and no waiting period on meat.

RESULTS

Measure	Mass	Nutritional value	CO ₂ footprint	Environmental footprint	Costs
Net use	2,867 kg	1,628,513 kcal	4,749 kg CO ₂	407 mPt PEF	963.89 EUR
ROI	1.68 kg/EUR	957 kcal/EUR	2.79 kg CO ₂ /EUR	0.24	1.54 EUR/EUR
	Effectivity		Ecological		Economic

€1.00 investment in AHV products generates €1.54!

Results of a trial by Thünen Institute in Germany. 11 cows with severe udder health issues were treated with AHV Udder Health Program – 2,867 kg milk could be sold instead of being dumped.

	Mass	Nutritional	CO ₂ footprint	Environmental footprint	Cost
Product-specific savings	2,867 kg	1,628,513 kcal	4,728	386	1,350
Net benefit			4,749 kg CO ₂	407 mPt PEF	358.89 EUR
Cost-benefit ratio (per invested Euro)	1.68 kg/EUR	957 kcal/EUR	2.79 kg CO ₂ /EUR	0.24 mPt PEF/EUR	1.54 EUR/EUR
	Effectivity		Ecological		Economic

Qualitative evaluation - results

The successful alternative treatment of severe udder health issues significantly reduces the need for antibiotics on the farm. This results in various positive effects on the farm, which make long-term implementation of AHV very likely. Operational processes are simplified, as the alternative treatment only has to be carried out once as opposed to two to three treatments on the animal with antibiotic medication. In addition, the latter must always be procured by the vet, while AHV products can be stored in stock on the farm. As the use of antibiotics in animal husbandry is viewed critically by consumers, among others, the farm can score points in terms of consumer communication by not using such treatment. In addition, antibiotic discharges to the field/environment are avoided when bulking milk is disposed of via slurry and fermentation residues. The reduction of bulking milk also reduces the cleaning requirements of the milking robot, which can also have a positive effect on animal welfare if queues at the milking robot and the resulting stress for the animals can be avoided.

TRIAL INFORMATION SHEET

TRIAL FARM INFORMATION

Date: 2022 (February until October 2022; report 2023)	Doc Version: 1.00
Graff Milchwirtschaft GmbH & Co. KG	Location: Eifel region, Germany
Herd size: 170 dairy cows	Type of parlour: Lely milking robot
Pasture: no	Feed: TMR (silages + concentrates)

TRIAL SCOPE (trial protocol/approach)

Animals which had a severe udder health issue were applied with the AHV Udder Health Program (Quick Tablet, Extra Tablet, Aspi Tablet, Booster Tablet).

AHV group:

- AHV Quick Tablet, Extra Tablet, Aspi Tablet, Booster Tablet
- During lactation, immediately after severe udder health issue was detected
- Treatment of these cows within 8 months, from February 2022 until October 2022

Control group: treatment in situation before the trial

- Before, severe udder health issues were treated with veterinary products (antibiotics, painkiller, milk was dumped for several days). Here the vet costs was calculated at €55 per case
- Before the trial (before Feb 2022), during lactation, immediately after case was detected

Calculations refer to all cases within 8 months. A period of 10 days (three days treatment + seven days waiting period) was calculated for each udder health issue case, as in the before situation (antibiotics), the milk had to be disposed of as bulk milk during this period; in the after situation, this milk is available for human consumption. A total of 11 cows were treated.

RETURN ON INVESTMENT (ROI)

Costs: <ul style="list-style-type: none"> - Labour time: €21 per hour (farmer salary) - Treatment costs - AHV vs. vet costs of 55 € / case - Costs of dumped milk (no of days x milk yield kg x milk price) - Withdrawal period: 10 per case - Milk yield: approximately 26 kg per day (2867 kg mass : 11 cows : 10 days) 	Benefits: <ul style="list-style-type: none"> - Reduced labour time - Less withdrawal milk - Less / no antibiotic use for udder health - Milk price during trial was €0.50 / kg milk -
Total ROI: benefits / costs = 1.54 (milk price 0,50 € / kg)	

RECOMMENDATIONS (AHV protocol)

AHV focuses on proactively supporting animals during stress periods and ensuring that bacterial invasions are avoided and removed from the body. AHV recommends using the Udder Health Program, for better udder health, less udder health challenges, improved bulk tank quality and lower culling rate.

7 days after calving: 1x Extra Tablet, 1x Aspi Tablet, 1x Booster Tablet
 4-8 weeks before dry-off: 1x Extra Tablet, 1x Aspi Tablet

LITERATURE

- Sources of Thünen Institute for calculations:**
- Datenbanken: Agribalyse, Ecoinvent, Cical
 - Laurentiis et al. (2020): Umweltauswirkungen Entsorgung
 - LELY (2019): Wasserverbrauch beim Spülen des Melkroboters
 - KTBL (2022), Obstbau: Wasser- und Stromkosten sowie Stundenlohn

HAVE A QUESTION?

Visit www.ahvint.com to schedule an appointment with an AHV Farm Advisor.