

Why

Water is becoming more of a scarce resource that must be used very sparingly. Social pressure to reuse rainwater in poultry farming not only as cleaning water but also as drinking water for livestock is increasing. To use rainwater as drinking water for livestock, efficient treatment of the water is a must.

Clean drinking water is essential for optimal growth and development and provides the guarantee for quality production of meat, eggs and milk. Poor drinking water quality can result in lower water intake and have a direct impact on animal performance such as lower feed intake, growth and production. Degraded drinking water quality can also cause reduced resistance and increased susceptibility to infections.

Chickens and chicks as well as dairy cattle must have quality and microbially pure drinking water to avoid disease problems and further reduce antibiotic use in the industry.

Cost

Using treated rainwater as drinking water has potential but rainwater is not “free. There are costs for rainwater storage and water treatment.

The cost of water treatment depends primarily on the type of treatment and the various treatment steps required to achieve the target quality standards of the treated rainwater (see drinking water standards for poultry).

Plant size is determined by water demand (m^3/day) and peak flow rate (m^3/hr).

What

Often alternative water sources, including rainwater, do not meet standards for all parameters. Different water treatment and purification techniques exist. As a livestock farmer, you must then apply the appropriate water treatment and purification technique.

Depending on the analytical results of the water sample, the most appropriate treatment technique(s) can be chosen.

Benefits

At Hooibeekhoeve, treated rainwater has already been successfully used as drinking water for the animals for 8 months. An **underground rainwater storage tank and a purification train are used for treatment**. Within the treatment train, several steps are successively gone through to purify the water (sand filter – activated carbon filter – stabilized hydrogen peroxide – UV treatment). The **water quality in the cistern** was monitored for one year. The results showed that the **untreated rainwater did not meet** IKM quality standards and DGZ ruminant health standards. After treatment

In addition to the investment cost, operating and maintenance costs of the plant must also be considered.

Indicative guide cost prices range from €0.50 /m³ to €1.5 /m³.(*)

(*) Based on depreciation of the plant over a 10-year period and a water demand of 20 m³/day.

with the treatment train, these were not recovered. **The treated rainwater fully met drinking water standards. No marked differences** are also observed **between tap water or treated rainwater as drinking water** in terms of drinking water intake, **milk production**, milk quality, feed intake and other health parameters. The treated rainwater is clearly liked by the cows.

Due to high drinking water requirements, the annual drinking water requirements on a dairy farm will usually exceed the amount of rainwater that can be collected annually. Available water depends on rainfall and collection and storage capacity. At Hooibeekhoeve, the water needs could not be fully met last year. By using treated rainwater as drinking water, 70% of tap water could be saved as drinking water.

There are costs associated with the use of rainwater such as rainwater storage, the water treatment plant and the use of treatment products. See the section on "Cost. If you use tap water, it is certainly interesting to consider rainwater treatment.

Compared to pumped groundwater, a system with rainwater is not yet financially interesting in certain cases. After all, groundwater is still cheap if the basic quality is good and no extensive water treatment is needed. But the VMM has for a number of years been pursuing a strict permit policy whereby a reduction of the permit for the use of groundwater from vulnerable aquifers is applied. As a result, there is a chance that livestock farmers will have to partially or, in some regions, completely switch to other (sustainable) water sources, such as rainwater, and upgrade this to high-quality drinking water. This will avoid the need to use (expensive) tap water as drinking

Life ACLIMA

Purifying Rainwater for Dairy Cattle Drinking Water

water. Moreover, it will contribute to increasing awareness of the preciousness of water.

Using rainwater sustainably kills several birds with one stone:

- you are more economical with pumped groundwater or precious drinking water
- you save on the water bill
- through the sustainable use of water, you are helping to conserve aquifers.

Supported by



**Medegefinancierd door
de Europese Unie**



DEPARTEMENT
OMGEVING

The ACLIMA-project has received funding from the LIFE Programme of the European Union under contract number LIFE 20 CCA/BE/001720.

Co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.

This document is subject to the terms and conditions. Full terms and conditions can be found at the bottom of the Life ACLIMA website (<https://lifeaclima.eu>)

Want to know more? Discover the detailed explanation of this measure at <https://www.lifeaclima.eu>

This sheet is the version of 18/10/2026