

## Sustainable dairy products



Valio, Finland's largest global dairy cooperative company,

and Royal DSM, a purpose-led, global science-based company active in nutrition, health and sustainable living, have signed a collaboration agreement to significantly reduce the carbon footprint of dairy production in Finland.

Valio, chosen as Finland's most sustainable brand, is determined to improve animal and human welfare, while taking active measures to reduce their environmental and climate impacts. Their milk ranks among the cleanest in the world.

Valio aims to make its dairy value chain carbon-neutral by 2035. This collaboration with DSM is one of the steps to reach this ambition.

Over the past 10 years, DSM has developed a feed additive, named Bovaer, which consistently and effectively reduces enteric methane emissions from cattle by ~30%. DSM is working with partners from the dairy and beef value chain to prepare for market introduction.

The activities include joint trials to confirm effectiveness in local farming systems, co-development of low-carbon dairy products, and establishment of business models.

The collaboration with Valio is a significant step towards market introduction.

Valio and DSM have collaborated in an end-to-end demonstration scenario to develop, build and test Bovaer in the Valio production and marketing systems.

The activities in this trial are amongst others tracking animal and milk performance parameters and calculating the eco footprint reduction. Valio will conduct quality and processability assessments to qualify Bovaer as a feed additive for use on their farms.

Bovaer is a feed additive for cows (and other ruminants, such as sheep, goats, and deer) researched and developed over 10 years by DSM.

Just a quarter teaspoon of Bovaer per cow per day suppresses the enzyme that triggers methane production in a cow's rumen and consistently reduces enteric methane emission by approximately 30%.

It therefore contributes to a significant and immediate reduction of the environmental footprint of meat, milk and dairy products.

Bovaer awaits EU approval and is expected to be available in the Finnish market this year.

[dsm.com](http://dsm.com)

### Natural feed solution for ruminants



Protein is the most expensive part of the diet. Reducing the amount of protein in the ruminant's diet is a major economic issue.

A new trial has confirmed that Rumiviv, a natural feed solution from CCPA group, improves protein utilisation by ruminants and therefore reduces feed cost, the environmental footprint and improves performance.

Rumiviv is a soft natural solution, which does not modify the spatial structure of proteins and thus provides more easily digestible bypass proteins for animals, in the gut.

It is a sustainable, social-friendly nutritional alternative solution to increase easily metabolisable protein in ruminant diets for an acceptable cost. This is a versatile solution adapted to every production context, meeting different needs:

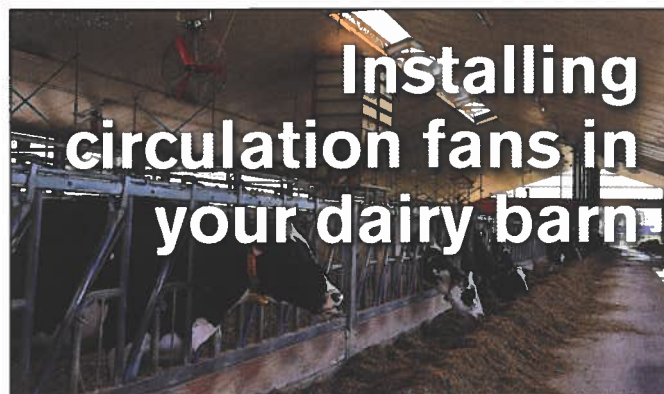
- Farmers can add it daily (25g per day per cow for example) to reduce nitrogen waste (by urea in urine or blood) and metabolic disorders (urea intoxication or inflammation) in the diet rich in degradable protein like pasture or grass silage.

- Farmers can replace totally or partially a treated raw material rich in metabolisable protein by a mix of raw materials they can freely choose and Rumiviv.

- Feed manufacturers can reformulate their feeds at least cost, for a same or higher metabolisable protein concentration.

In addition, storage and use of Rumiviv before and during utilisation can be made with normal safety procedures. In a market more and more receptive to money savings, animal welfare and respect for the environment, CCPA Group's new approach is definitely an interesting way to improve breeding profitability.

[groupe-ccpa.com](http://groupe-ccpa.com)



## Installing circulation fans in your dairy barn

In order to determine the best place to mount a circulation fan in your dairy barn you have to consider several aspects. As every barn is built differently, customisation is the key to reach an optimal result. We have included a few guidelines for you below:

### DO

- Provide a refreshing airflow over the cubicles. This is where the cows spent the largest amount of time. Save at least 1.5m of free space on the suction side of the fan for optimal efficiency.
- Make use of existing trusses to mount 130cm basket fans with a chain or to install smaller basket fans directly.
- Mount a 130cm basket fan between double cubicles. The reach of the fan is wide enough to provide both cubicles with a cooling effect.
- Mount the fans by extension of each other.
- Use spaces that do not need to be ventilated (such as the area for calves) for the suction side of the fan.

### DO NOT

- Don't mount fans in places that the cows can reach. For a fan with a coarse-mesh grill, the minimal required height to mount the fan is 2.7m measuring from the bottom of the fan to the ground.
- Don't hang fans above the feeding racks. In practice, we see that this dries out the food, which can result in cows solely consuming the concentrate feed. This can, in turn, cause ruminal acidification. An additional disadvantage is that the cows are more likely to lay down on the manure grid in the cool air stream, increasing the risk of udder infections.
- Don't forget to make sure there are as few obstacles to the air stream as possible for the most effective and efficient use of fans. Take care of subtle obstacles such as feed robots for example.

### Other locations in the barn

After seeing positive results near the cubicles, dairy farmers often decide to employ fans in the waiting or milking areas of the barn as well. In these areas, there is often less space for a large fan. We recommend using a smaller basket fan or a horizontal circulation fan with a casing here. The advantage of a fan with a casing is the more directional air stream with which the air speed remains high over a longer distance. This can be favourable when deciding on the ideal place of installation.

### How many fans do I need to achieve the desired result?

While this depends heavily on the application, some general assumptions can be made for their use in dairy barns. The ideal number of fans partly depend on a set of installation choices, but there are a few other factors that influence the amount of fans you will need.

### Air speed and air volume

When circulating air, it is important that a specific air speed can be reached and maintained. Cows experience a cooling effect when the air speed is above 2m/s. An additional advantage is that air above that speed also significantly reduces gaffies. Above an air speed of 2.5m/s, other types of flies are also kept away.

### Area of effect and efficiency

When we look beyond all other influences and purely look at the fans themselves, we see that the 130cm basket fan can provide an air speed of 2m/s across a reach of around 15m. By mounting another fan after 15m, the moving air is sucked in again and blown through to another potential fan. This not only improves the area of effect of the fan but also increases its efficiency.



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