

Breeding value **methane saved**

To reduce the amount of methane per kg of milk

Dairy processors are encouraging farmers to reduce greenhouse gas emissions per kilogram of milk. Breeding can make a significant contribution to this. The new Methane Saved breeding value makes it possible to effectively breed for lower methane emissions.

An average Holstein cow produces approximately 435 grams of methane per day. This gas is produced during the digestion of feed and is primarily released through belching. Methane is considered a potent greenhouse gas, and cattle contribute significantly to total methane production. By reducing methane emissions, dairy farming can therefore make a significant contribution to limiting global warming.

The amount of methane a cow produces depends on factors such as the diet and feed intake. Genetics also plays a role. Differences in methane emissions appear to be significantly genetically determined. This means it's possible to reduce methane emissions through selection and breeding.

Breeding for methane reduction

After the August index run, CRV's Holstein bulls received a Methane Saved breeding value for the first time. This can be found in the webshop. The Methane Saved breeding value represents

the amount of methane a cow produces per day, regardless of her milk production. Cows with the same production level can vary in methane emissions per day.

By breeding for methane reduction, milk production remains stable or even increases, while methane emissions per cow per day decrease. This leads to fewer grams of methane per kilogram of milk. After all, greenhouse gas emissions per kilogram of milk are the key indicator that dairy processors use to reward farmers for good practices.

Breeding and selecting based on breeding value

The Methane Saved breeding value is a relative breeding value with an average of 100 and expressed in terms of methane emissions per cow per day. Daughters of bulls with a breeding value higher than 100 emit less methane than average, daughters of bulls with a breeding value lower than 100 emit more.



Breeding value for methane saved – a practical answer to economic sustainability goals in dairy farming

The graph below shows the genetic potential for production (red line) and methane emissions (blue line) of sires by year of birth. The graph displays the increase in percentage relative to the birth year 2015.

What stands out in this graph is that as the genetic potential for production increases, methane emissions also rise. However, from 2019 to 2023, the increase in production potential is greater than the increase in methane emissions, resulting in a significant reduction in methane emissions per kilogram of milk (green bars).

So, what is the added value of breeding for methane saved?

The key benefit is that the trend up to 2022 will be broken. By selecting for methane saved, it is possible to increase production (red dotted line) while methane emissions (blue dotted line) no longer rise, or even decrease.

The outcome is a substantial reduction in methane emissions per kilogram of milk.

Development methane emission and milk production

