First Nordic Methane Index

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In the May evaluation, the first Nordic methane index is released. It gives the Nordic cattle sector the possibility to move to an even more climate-friendly milk production. Earlier investigations have shown that increasing NTM levels will reduce the climate emissions from dairy cattle, and the new methane index provides an extra tool to reduce methane production from dairy cattle.

ONIMIT project has made the base

Data is still the king in breeding, and to make a methane index, it is necessary to collect many methane registrations. In the Danish project ONIMIT, funded by GUPD and the Mælkeafgiftsfonden, some of the goals are to collect methane registrations from a minimum of 10,000 cows and to develop a methane index. In total, across different projects, there are today methane registrations from 16,000 cows, including 8,000 Holstein cows, 5,000 Jersey cows, 2,300 RDC cows, and 700 crossbreeding cows. The data are collected in 40 herds, and at the moment, methane registrations are collected in 15 herds. The machine used to collect methane registrations is called a sniffer, and one sniffer can collect methane registrations from two milking robots if they stand close to each other. Today, registrations are done by 38 sniffers in 69 milking robots.

What are we breeding for?

The overall goal is to breed for lower methane production in the rumen of the cow, thereby reducing methane emissions. The sniffer machines do not measure the methane production of the cow but instead measure the methane and CO_2 concentration from the cow's exhaust air when they are eating in the milking robot. The phenotypic registration used in the methane index is the methane concentration. The idea is that a lower methane concentration from a cow indicates lower methane production. Breeding for lower methane concentration should therefore lead to lower methane production in the rumen of the cow for future generations.

First version with low reliability

Methane is a new trait, and the amount of collected methane data is limited. The low amount of data gives a low reliability for the index. The question is always, "When shall a new index be released?" and it is a balance. On one hand, the wish is to get as high reliability as possible to make a very stable index, but it takes a long time to collect many data. On the other hand, there is a wish to use the new information as fast as possible for breeding.

NAV has now decided that it is time to release the first version of the new methane index. The benefit of the extra information from the methane index is higher than the risk with the low reliability of the index. The low reliability gives a higher risk for reranking of the animals when more methane registrations come.

Further development in the future

We have just started to scratch the tip of the iceberg. The calculation and the phenotype behind the new methane index are currently the best suggestions for calculating the new methane index. The work with the methane index will continue and expand since Sweden currently has several projects underway, focusing on data collection and further development of the Methane index. In the future, when more knowledge about methane becomes available, the model used for calculating the methane index will be further developed to increase reliability. This could also include adding indication traits to provide extra information about the methane production of the cow.

So far only Holstein bulls

The index was first developed for Holstein since they had the biggest amount of data. However, it takes a lot of work to include a new index in the national databases for all animals, so the starting point is methane indexes for the AI bulls. In the May evaluation, the released methane index will therefore only be for Holstein AI bulls.

More animals will soon get methane indexes

Right now, there is a large effort with the methane index, and the plan is to include methane indexes for all Holstein animals in November 2025 in the national databases, and for bulls on the NAV search page. In 2026, there will hopefully be enough data to also release methane indexes for Jersey and RDC animals.

Selected after NTM

The new methane index is not included in NTM, and the economic value of methane reduction is still unknown. You should therefore still select after NTM to get the highest economic profit. If you are interested in breeding for lower methane production, you can look at the methane index as extra information. When you have selected the bulls on NTM, you can, for example, drop a few of the bulls with low methane indexes.

Because of the low reliability of the methane index, you should not put too much focus on the methane index. Do not fall in love with a few bulls with high methane indexes and use them a lot. Spread your use across more bulls, just as you do today.

Where can I find the bull list for methane index?

On the NAV homepage, there is a page about methane production under dairy cattle. At the bottom of the page, you can find the link to the methane index list. On the list, you can find the NTM, methane index, bull ID, and the pedigree of the bull. Since data has mostly been collected in the last five years, it is only bulls born after 2008 that will get a methane index. To get on the list, the bull needs to be genomic tested in the Nordic system and has paid the Nordic fee or has official NTM and minimum of 10 daughters with methane observations.