



Ferme Géréli

Effective expansion

Gérald and Richard Semmelhaack

Fédération
des producteurs
de bovins
du Québec



Effective expansion

It is possible to emit less greenhouse gas with a greater number of animals. You only have to be more effective. This is what Richard Semmelhaack found out by using the electronic calculator developed by the Canadian Cattlemen's Association.

This tool was designed to better understand the emissions of greenhouse gas produced by cattle in Canada.

When he was offered the use of the calculator to estimate his operation's greenhouse gas emissions, Richard accepted immediately. "We are all concerned by the greenhouse effect, so I told myself that I could also do my share".

The operations' data for the 1990 and 2003 production years were entered in the calculation computer program. In 1990, the farm only had the cow-calf component with approximately twenty-five cows. Thirteen years later, the herd is made up of forty cows and thirty steers for finishing.

In 2003, it was established that the operation emitted a lot less greenhouse gas per pound of live weight gain, up to 80 per cent, in comparison with the reference year. In fact, the total emissions of the farm increased slightly, but a good

Owner of the family farm for thirty years, **Gérald Semmelhaack and his son Richard** manage a cow-calf operation and cultivate sixty hectares. They do finishing and semi-finishing with a herd of forty cows, ten replacement heifers and thirty-five calves. They also have a flock of sixty ewes that produce approximately one hundred lambs annually. It was after completing his studies in administration that Richard joined his father to develop the operation located in Stukely-South in the Eastern Townships.



feed conversion rate and quality feed for the animals being finished allowed the farm to emit less gas per pound of meat produced.

The Semmelhaack did not believe they could obtain these results while increasing the herd size, especially since ruminants contribute significantly to the production of methane, a gas with a warming potential twenty-one times higher than carbon dioxide.



In collaboration with Centre de recherche et de développement en agriculture (CRDA)

After completing university studies in administration, Richard went back to work on the farm. “We added the finishing component and expanded to increase the profitability of the operation. At that time, we were not thinking about managing greenhouse gas better. I am glad that the changes we made in the operation led us in the right direction”, he explained.

Pasture management and reduced work

A better management of pasture also helped to reduce greenhouse gas emissions. The improvements made to the pasture increase the quality of forage given to the herd in terms of nutrients and digestibility. Consequently, there has been not only a positive effect on feed efficiency of the pastured animals, but also on the quantity of methane emitted on an individual basis.

The Semmelhaacks cultivate sixty hectares with the majority in hay and pasture. A small part of the land is used for growing small grain. Compared to 1990, a greater percentage of the pasture is renewed as approximately five hectares are reseeded each year and the objective is to reseed the entire pasture in five to seven years.

In addition, these producers are doing more rotation with their pasture. The majority of the herd grazes on plots of approximately two hectares. The pasture time in each plot is adjusted according to the season. For example, in June, the

animals are moved after a week while in August and September, the grazing period is reduced to two days.

The use of a disk harrow and of the “Aerway” as tools to work the soil has been an integral part of the operation’s practices for a few years now. The reduced working of the land burns less fuel and contributes to the reduction of greenhouse gas emissions. In addition, by encouraging the accumulation of organic matter, the Semmelhaacks hope to store CO₂ in the soil, which could improve the greenhouse gas balance.

In summary, the results obtained at the Ferme Géréli by good herd and pasture management prove that it is not too complicated to be more effective regarding greenhouse gas emissions. Often, small gestures bring big results.



Greenhouse gas in agriculture: the facts

It is estimated that agriculture contributes approximately 10 per cent to the Canadian emissions of greenhouse gas. The greenhouse gases from farm origin come mainly from microbial activities: ruminants’ digestion, manure and agricultural soil. Among these gases, there is nitrous oxide (N₂O), methane (CH₄) and carbon dioxide (CO₂).

Gas	Warming potential	Agriculture’s contribution
CO ₂	1	<1%
CH ₄	21	38%
N ₂ O	310	61%



To try the calculator, contact the *Fédération des producteurs de bovins du Québec*
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