

Session 4.2: Climate Change Mitigation Strategies.

S04.O-12

IS THE DIGITAL TRANSITION OF FARM A KEY FOR SUSTAINABILITY? THE PARMALAT LACTALIS ITALIA SCENARIO

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In 2021, Lactalis started the assessment of carbon footprint of dairy farms as part of Corporate Social Responsibility (CSR) objectives.

In Italy, almost 200 farms have been assessed during these first two years using Life Cycle Assessment Method on Cool Farm Tool Website. Farm sampling has been made using a representative model suggested by University of Wageningen.

The assessments have been made taking into account the main aspects of dairy production inside farm gate: crops, feed, herd and manure management but also, energy and transport.

After data analysis, it was possible to define that the most of greenhouse gasses (GHG) released during milk production at farm level were attributable to feed production (43%), enteric fermentation (36%) and manure management (16%). Lastly energy and transport in a low percentage (5%).

Precision Livestock Farming (PLF) can play an important role as mitigation strategy, considering that more than 70% of GHG emission of dairy farm is related to feeds (self-produced and purchased) and how they are digested by cows.

According to Lactalis Italia approach, in Parmalat we have investigated the correlation between carbon footprint value, animal welfare assessment (classyfarm), milk quality parameters, herd consistency parameters (Breeders association software) and efficiency parameters that come from different silos of data and we have identified key sustainability indexes (KSI) that farmers can easily understand to manage their environmental impact: Dairy efficiency, Average lactation yield, % of unproductive animals.

Dairy efficiency is the ability of animal to convert feed in milk; it is expressed as the ratio between the amount of fat and protein corrected milk (FPCM) per feed dry matter ingested, the 10% with the lowest carbon value had in average 1,44 while the 10% with the highest impact had 0,98.

Average lactation of the 10% with the lowest carbon value had in average 10.068 Kg FPCM while the 10% with the highest impact had 7.222 Kg FPCM. Unproductive animals can increase the % of enteric emission impact, the correct forecast and evaluation is as well needed to keep the farm also economically sustainable.

Digital platform is therefore needed to collect primary data for carbon footprint and to constantly manage previous indicators, supported also by an integrated DSS (decision support system).

This is where the role of milk processor gets importance providing to our supply chain a digital "live" platform: data of each farm, once interconnected, can gain value. Real value is obtained if data are analyzed, compared and then validated and subsequently sent back to farmers as a benchmark index (or benchmark for continuous improvement).

Thus a virtuous cycle to reach sustainability goals is created, giving a true identity to the concept of supply chain (Filiere).