Fat and Protein Corrected Milk (FPCM)

Learn more about why and how the Co-op reports emissions per tonne of FPCM.

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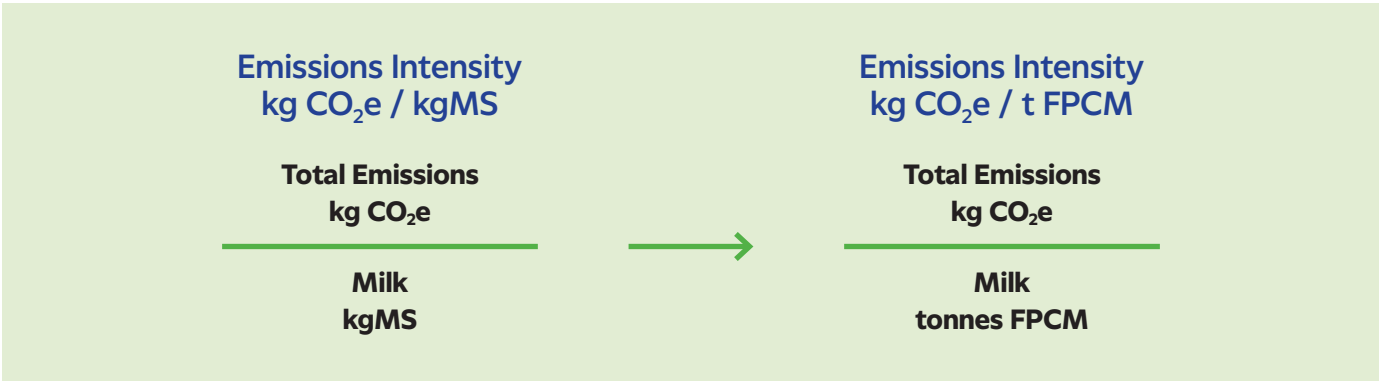
Dairy for life

The greenhouse gas (GHG) footprint and emissions reduction target for our Co-op is reported in Fat and Protein Corrected Milk (FPCM) and we are changing to these units when we talk about an individual farm's emission number too.

Emissions are still calculated in the same way – just divided across tonnes of FPCM instead of kgMS.

Rest assured that this change will not affect the milk payment methods under the Fonterra Farmers' Terms of Supply, which remain tied to kgMS.



What is Fat and Protein Corrected Milk (FPCM)?

FPCM adjusts milk volume to an international standard ratio of 4% fat and 3.3% protein, capturing all solid components such as fat, protein, lactose and minerals.

Why are we changing to FPCM?

FPCM is the global standard for milk measurement. This means our customers compare the on-farm footprint between ingredients suppliers using FPCM.

By aligning our GHG measurement and communication, we make sure there is consistency in reporting to both our farmers and our customers.

Why make this change now?

Switching to FCPM now helps align customer purchases of virtual low-carbon milk pools with farm-level recognition and incentives. It also ensures the emission numbers we share with farmers reflects our Co-op's collective progress.

How is FPCM calculated?

FPCM adjusts the total amount of milk to 4% fat and 3.3% protein by using this equation[1]:

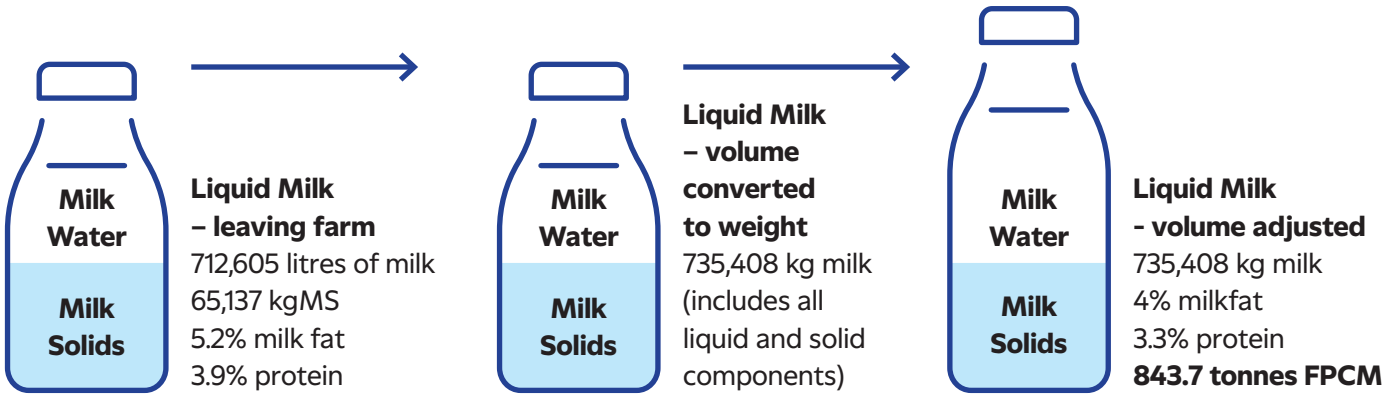
FPCM (kg) = Milk production (kg) x [0.1226 x Fat% + 0.0722 x Crude Protein% + 0.2534]

The calculation multiplies the amount of milk produced by the ratio of the energy content for the farm to the energy content of standard milk with 4% fat and 3.3% protein (assuming lactose content remains constant at 4.85% of milk volume). This assures an objective comparison between farms with different breeds or feed systems.

Just be aware that the milk volume, fat and protein % need to be in 'weights', before they can be used in the calculation. To convert them to kg, multiply milk volume in litres by 1.03 and divide fat and protein percentage by the same conversion factor.

FPCM Conversion un-packed:

- NZ milk is generally more concentrated than international milk.
- A farm's milk solids and total volume is converted to a milk 'weight' (1.03kg per litre of milk)
- Adjust volume (add water weight) until the concentration is diluted to the standardised ratio: 4% fat and 3.3% protein.
- This is now the 'FPCM' for a farm:



Is there a breed or feed impact on FPCM?

Breed and diet (feed type) both influence milk composition and volume however, the variations between farms aren't significant enough to consistently favour any breed or system type in FPCM conversion.

GHG emissions accounting methodologies, assumptions and scenarios to calculate emissions are continuously evolving. Fonterra retains full discretion over which methodologies it chooses to adopt in its business at any given time, and no correspondence will be entered into around methodology selection. The methodologies outlined in this document reflect current practice (as at April 2025), but may evolve in the future depending on industry and/or international norms.

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[1] *IDF. 2022. The IDF global Carbon Footprint standard for the dairy sector. In: Bulletin of the IDF No 520/2022. International Dairy Federation (ed.), Brussels.*