



Lifecycle assessment of fluid milk production in the Republic of Ireland

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Association for Food Development Awareness



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Presentation contents

- Background
- Materials and methods
- Results
- Discussion points

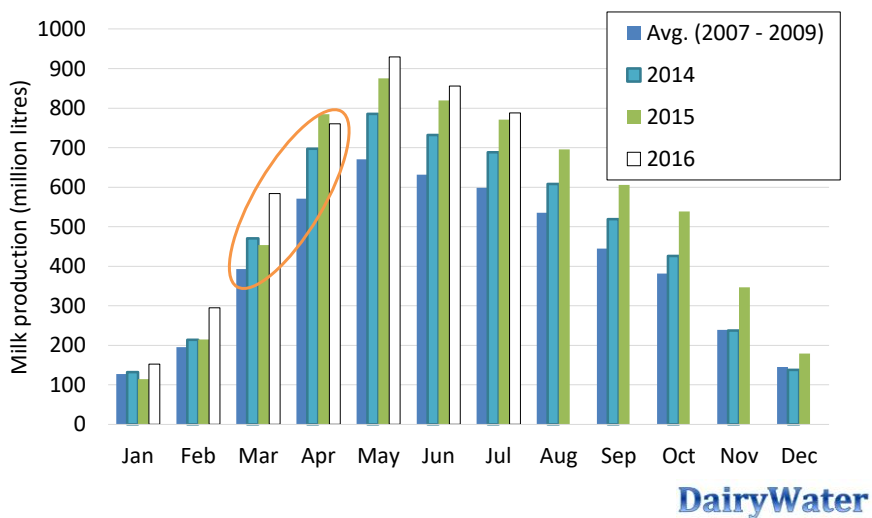
DairyWater

Presentation contents

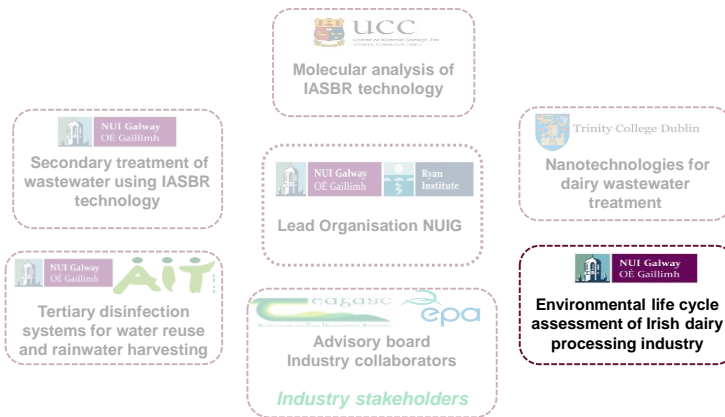
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Irish milk production



DairyWater Project overview



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Industry stakeholders

Liaison objectives:

- Details of the current wastewater treatment systems (samples)
- Information on water treatment facilities
- Data on energy/resource consumption
- Information on water usage and re-use strategies in-place/considered



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Aim & objectives of the Task

Aim: *Develop strategies to reduce the environmental impact of the Irish dairy processing industry*

Objectives:

- Perform an initial assessment of the global warming potential of the Irish dairy sector
- Assess the environmental impact of the manufacture of Irish dairy products (using a detailed survey of factories)
- Return individual analysis results to participating plants
- Calculate potential mitigating effects of DairyWater technologies
- Develop a framework, including a software tool, for environmental life cycle assessment of dairy processing facilities.

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Presentation aim

Aim: *To estimate the global warming potential associated with the production of fluid milk in Republic of Ireland*

- Full fat, low fat, skimmed milk etc.
- Cradle-to-factory gate analysis



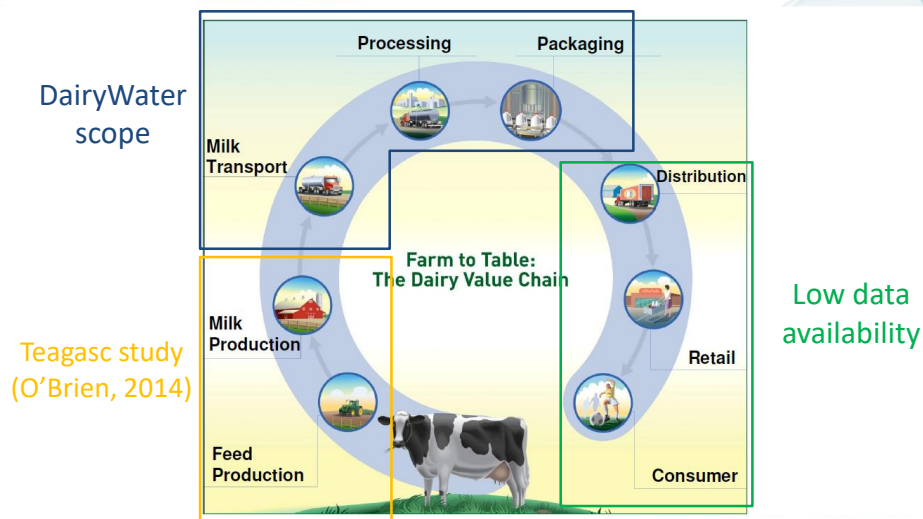
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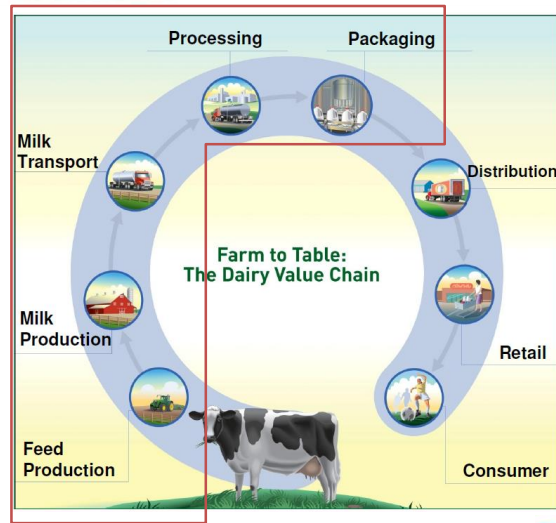
System boundaries



Wang, Y. (2011) *U.S. Dairy Life Cycle Assessment: From Grass to Glass*

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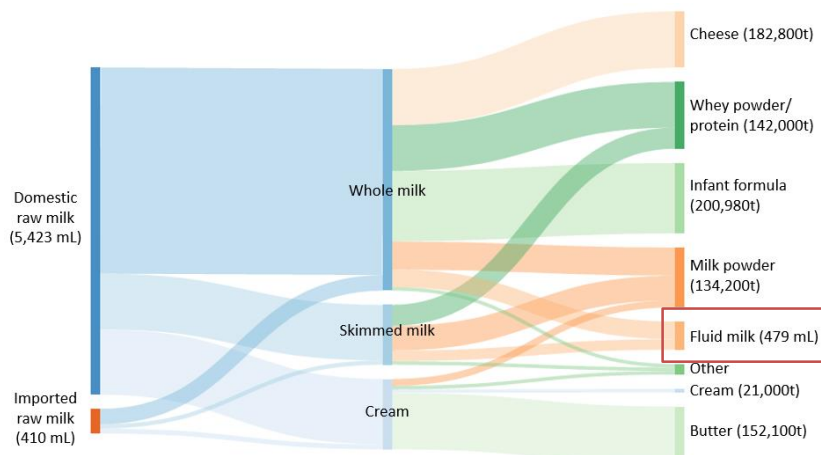
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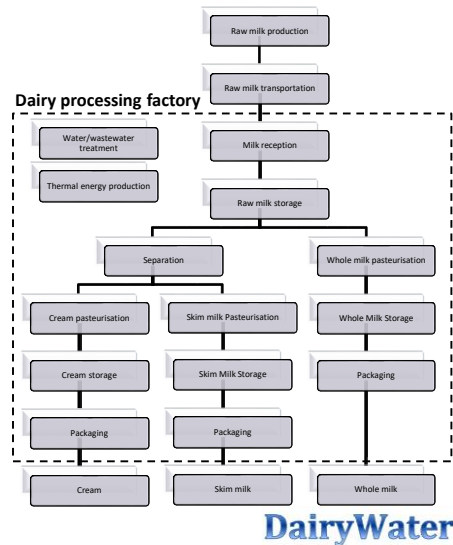
Irish raw milk usage



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LCA of fluid milk production

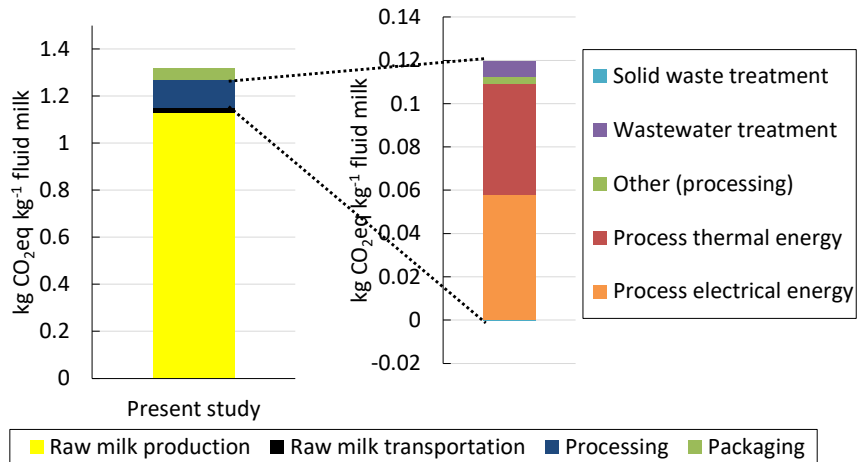
- Data was collected from 3 dairy processing plants
 - 22 % of Irish fluid milk
- Climate change assessed
 - IPPC 2013 GWP
 - kg CO₂eq
- Results normalised
 - Per kg fluid milk



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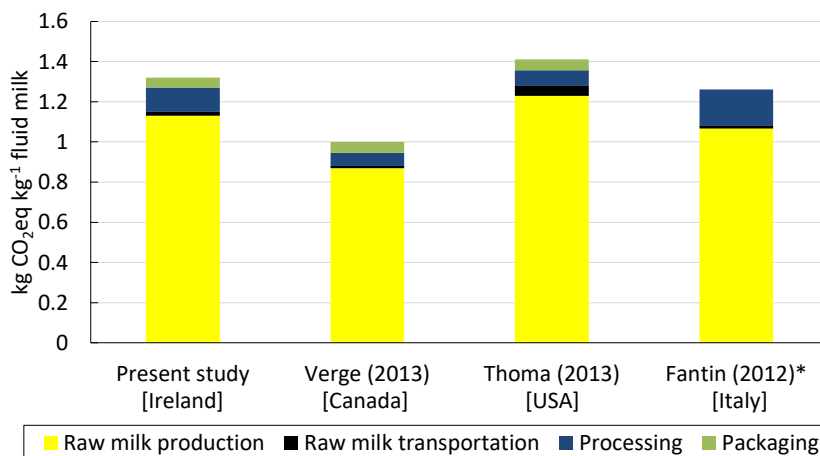
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Results from the analysis



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Benchmarking against international studies



*Value for processing also includes packaging

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Discussion points

- This study will serve as an independent benchmark for producers & processors
 - Identify opportunities to reduce impacts
- Inform policy makers of the significant contributors to environmental impacts
 - Evidence for the inclusion of indirect impacts
 - Stricter regulations on emissions to air required
- Next stages are to:
 - Perform LCA on DairyWater technologies
 - Compile a concise report for industry stakeholders

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Questions???

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"Achieving sustainability for the Irish dairy processing industry"



DairyWater research team attendees at the DairyWater workshop 2016

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