

# Feed-omics



**A revolutionary approach to uncovering the biological basis for feed efficiency in cattle through a global-omics systems biology analysis**

Escalating feed costs and increasing environmental legislation challenge the economic and environmental sustainability of the Irish beef sector. Thus reducing feed costs is crucially important to not only the sustainability of beef production but also the economic viability of this sector. Feed efficient animals are more cost effective at utilising dietary nutrients for subsequent muscle growth and production of saleable meat. Furthermore, feed efficiency as a trait is a prime target for genomic selection breeding programs in cattle. However the underlying biology controlling feed efficiency in cattle is yet to be elucidated fully. This project aims to integrate various levels of biological information from feed efficient cattle, leading to an improved understanding of the molecular control of this trait. Additionally, this project will identify genetic markers for improved feed efficiency potential in beef cattle, which will be robust across differing dietary regimens and breed types typically employed within the sector. Results from this project will be incorporated into genomic selection breeding programmes leading to a cattle population that is more feed efficient and consequently more economically and environmentally sustainable to produce.

**Project Duration:** 36 months (18M CSIRO + 18M Teagasc)

**Collaborating Institutions:** Teagasc, Ireland  
 CSIRO, Australia  
 University College Dublin, Ireland

**Project Team:**

<u>RL2025 Fellow</u>	<u>Teagasc Supervisor</u>	<u>Outgoing Phase Supervisor</u>	<u>Third Supervisor</u>
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