



Stress and its effects on cattle efficiency



Can reducing cattle stress improve feed efficiency and methane emissions?

The Challenge

Cattle of the same breed vary in their feed efficiency and methane emissions. It has been suspected for some time that part of this variation could be explained by their behaviour and responsiveness to routine stressors. This project examined the role that these factors play in cattle efficiency.

The Research

Eighty-four steers (crossbred Charolais or purebred Luining) were assessed for temperament, dry matter intake and weekly bodyweight over a 56-day period at SRUC Beef Research Centre in 2014.

They were then transported for 30 minutes at a slow speed and assessed for physiological indicators of stress.

Subsequently, methane emissions were measured over a 3-day period in individual respiration chambers.

The Results

Cattle with very excitable temperaments when in the cattle handling crush were the same animals that showed a larger stress response to transport. These steers grew around 7% more slowly than the calmest cattle.



While these steers grew more slowly, they tended to eat slightly less per day, which was enough to suggest temperament did not affect their feed efficiency or methane emissions directly (efficiency or emissions per day).

The steers, however, that showed a strong stress hormone response to transport were those that also produced the most methane per total kilos of feed consumed. This difference amounted to around 17% more methane from the most compared to the least stress responsive animals.

Temperament is a good, but not perfect, predictor of their growth rate. The physiological response to stress is, however, a better predictor of methane emissions.

The Impact

This study builds on previous SRUC research, and that from other groups, demonstrating that temperamental cattle grow more slowly.

These animals appear to eat slightly less feed per day, so the effect on daily efficiency is not marked. Nonetheless, they probably reduce enterprise gross margins as the inference of this study is that it takes them slightly longer to get to target market weight, eating more feed in total.

Animals often show a stress response to routine husbandry procedures and those that are more sensitive to this emit considerably more methane. Calm cattle that cope well with routine handling and farm procedures should be favoured both on economic and environmental grounds.

Project Detail

Project start date: [04/2013], **finish date:** [04/2015].

Email: simon.turner@sruc.ac.uk; **SRUC Bush Estate.**

Project funded by EU Marie Curie Intra-European Fellowship

Further information:

<http://www.healthcompetence.eu/converis/publicweb/project/6028;jsessionid=82c9595fe182f41f4e5fdb12103d?show=Person>

Summary printed 09/2016.

Further Information

For more information on cattle handling, husbandry and business management contact your local consultant or SAC Consulting beef and sheep specialist at beefandsheep@sac.co.uk