

The Beef Feed Efficiency Programme → Breeding more efficient beef cattle



Update January 2017

With nearly 600 cattle already recorded through the Beef Feed Efficiency Programme, this major industry project is progressing well.

The four-year Defra and AHDB-funded Beef Feed Efficiency Programme will demonstrate how feed efficiency traits can be measured and selected for in beef cattle, illustrating how the most efficient cattle will eat less than others but grow at the same rate. This will provide significant opportunities for beef producers to cut the cost of production.

The inclusion of feed efficiency in beef cattle genetic selection indices has the potential to increase farm level profit by 39% and reduce greenhouse gas emissions by around 22%.

The main elements of the programme are to:

- Agree industry-wide protocols for recording feed efficiency on commercial farms
- Install facilities for measuring feed intake on commercial finishing units
- Collect feed intake and performance data from approximately 1800 cattle
- Determine genetic parameters for feed efficiency traits in one breed. The first breed to be measured will be Limousin.
- Establish a network of facilities on commercial farms for national feed intake recording
- Develop a set of potential business models for the continued recording of feed efficiency after project completion



Business planning & knowledge exchange

As part of the project, a group of beef supply chain stakeholders has been convened to explore and report on potential business models to deliver a self-sustaining national programme of breeding for feed efficiency in beef cattle following the completion of the Defra & AHDB funded project.

The group is investigating the possibility of working with existing supply chains to supply suitable cattle for collection of feed efficiency data. Further work involves advising on the development of national standards for feed intake recording in beef cattle and overseeing knowledge exchange activity.

Recording at SRUC

Collection of 500 cattle records at Scotland's Rural College (SRUC) beef unit, near Edinburgh is nearing completion. Pure and crossbred cattle from the suckler and dairy herds have been sourced, representing a wide range of genetic merit within the Limousin breed. Cattle are aged between 7-9 months at the start of the measurement period and, have individual feed intake and performance recorded for 63 days.



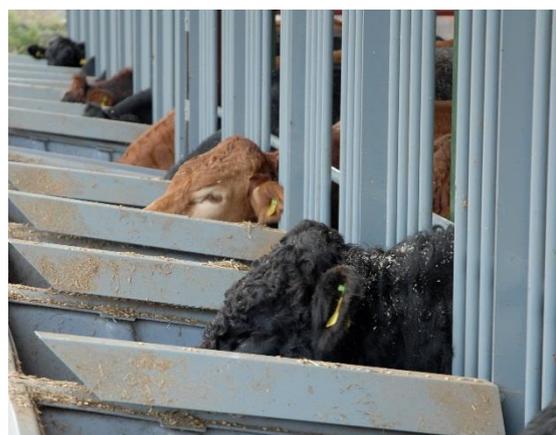
Commercial feed recording units

Two commercial data recording units have been established and are located in Dorset and North Yorkshire. Both farms have capacity for batches of 120 cattle and can finish the cattle after the recording period, allowing valuable carcass data to be fed into the genetic evaluation.

GrowSafe feed intake recording troughs and associated software have been installed on both farms, allowing data recording to begin in September 2016. This equipment continuously records the weight of feed in the trough and individual cattle identification as feeding takes place.

Interim results

Results to date have shown a range of feed efficiency between different sire groups. Summary results for a batch of cattle are shown below. To date actual feed intake of the more feed efficient cattle (low RFI) has tended to be around 12% lower than the less efficient cattle (high RFI), yet growth rates are similar. Across 100 growing cattle gaining 200kg of liveweight, the resultant feed cost savings would amount to over £2200.



Residual feed intake (RFI), or net feed efficiency (NFE) as it is also known, is a measure of the level of the animal's dry matter intake in relation to its predicted intake taking account of its live weight, growth rate and carcass composition. It is independent of mature weight and growth rate, and identifies cattle that eat less than predicted without any effect on rate of liveweight gain.

The ability to select more feed efficient cattle has important implications for reducing feed costs for suckler cows, as well as growing and finishing cattle.

Summary

The data gathered during this project will help generate knowledge and tools to drive forward the genetic selection of beef cattle for feed use efficiency.

While the initial focus will be on recording Limousin-sired cattle, the aim is to develop a system for recording feed efficiency that can be extended to other beef breeds in the future.

Cattle required

Limousin sired calves are still required for the programme and can be purchased, or loaned via a retained ownership arrangement, from dairy or beef herds.

Please contact Natalie Cormack on 07866 934563 / 01890 781006 or email natalie.cormack@ahdb.org.uk if you have suitable cattle up to 8 months of age.

	Residual feed intake		
	Low	Med	High
Average liveweight kg	327	356	342
Average growth rate kg/day	1.57	1.63	1.61
Residual feed intake kg DM/day	-0.67	-0.03	0.57
Actual feed intake kg DM/day	7.53	8.65	9.08

