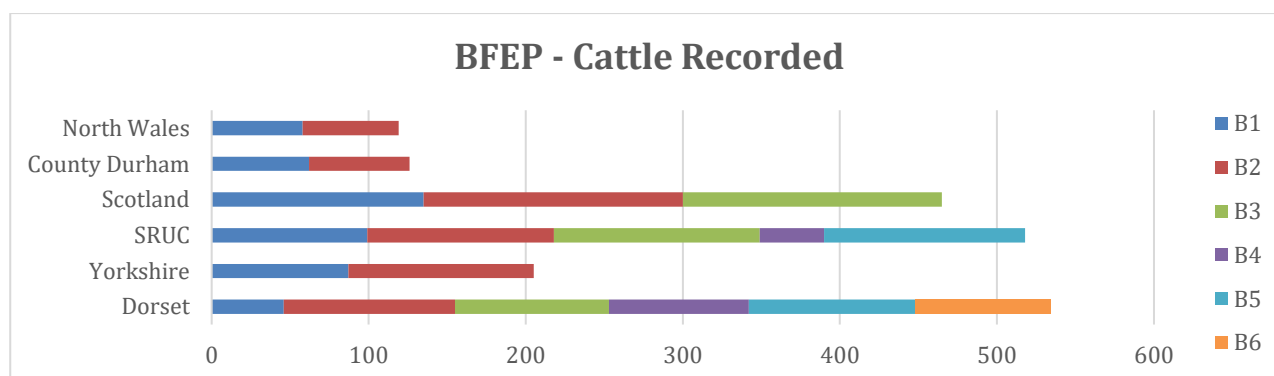


Beef Feed Efficiency Programme

Update April 2018

By the end of the current batches being measured nearly 2000 animals will have been recorded through the Beef Feed Efficiency Programme, and the project will be nearly 1/3 through its last year of the recording phase. Two new host units have replaced the unit in Yorkshire and came on stream in December 2017. The commercial units in England have been joined by a unit in Scotland through an additional funding partnership, and this will complete its third batch of animals on 4th May, where 465 animals have already been recorded. A detailed breakdown of batches and numbers recorded are displayed in the two tables following:



	B1	B2	B3	B4	B5	B6	Totals
Dorset	46	109	98	89	106	86	534
Yorkshire	87	118					205
SRUC	99	119	131	41	128		518
Scotland	135	165	165				465
County Durham	62	64					126
North Wales	58	61					119
Total							1967

The final batches recorded during the funded phase of the programme are being planned for all units, which will end at the end of December 2018. The predicted numbers, broken down by unit are as follows:

	Actual							Projected (to end Dec 2018)					Target (Max)
	B1	B2	B3	B4	B5	B6	Totals	B3	B4	B5	B7	Totals	
Dorset	46	109	98	89	106	86	534				120	654	720
Yorkshire	87	118					205					205	205

SRUC	99	119	131	41	128		518					518	500
Scotland	135	165	165				465		115	140		720	720
County Durham	62	64					126	60	60			246	240
North Wales	58	61					119	60	60			239	240
							1967					2582	2625

The increase in capacity afforded by Scottish measurement unit has allowed introduction of a second breed, which has been chosen to be Aberdeen Angus. The Aberdeen Angus breed was chosen because it is the largest of the Native breeds (numerically) and will afford a comparison between a continental breed and a native breed in relation to the parameters, with the aim of informing future analysis. This has been minimised to Dorset and Scotland, and of the total recorded to the end of the current batches are 307 Angus and 1660 Limousin sired as can be seen in the table below. We predict that by the end of December 2018 there will have been recorded 617 Angus and 1965 Limousin sired animals. The project has calves measured to date from 340 different sires thus far; 72 Angus and 268 Limousin.

Business Planning Group

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 submit suitable cattle to the units 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 the knowledge exchange activity. This group is also actively exploring the potential for uptake of recording places from other beef breeds, facilitating two Open Days at Forfar and Dorset specifically aimed at breed societies on 4th and 6th December 2018. The group has created a summary document for the aid of breed societies and other supply chain groups which outlines the options available and costs associated with each option. Discussions with individual breed groups are ongoing in order to specifically clarify options and parameters.

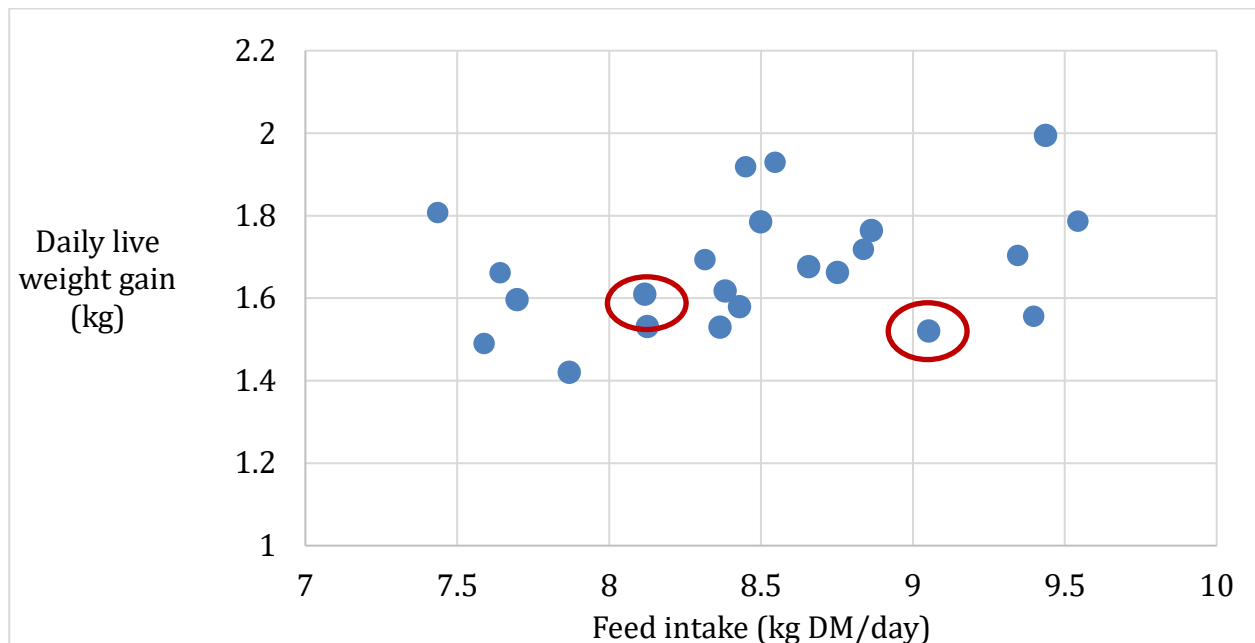
Genetic Parameter and Breeding Value Estimation

The scientific Advisory Group met in January 2018 to continue the discussion on trait definition and development of new breeding indices to include feed intake. This guidance will allow analysis to proceed with confidence on final genetic parameter estimation. Abacus Bio, in conjunction with SRUC are gathering relevant information to inform the development of the indices and hope to be able to report by end May 2018.

Interim results

Recently updated results continue to show a range of feed efficiency between different sire groups, and an increased variation with the introduction of data from the commercial units, as expected. The graph below demonstrates the comparison between DLWG and Feed Intake for two sires groups contributed by one farm into the Dorset unit. The two red-circled animals exhibit very similar DLWG, but very different dry matter

intake. The animal circled on the left is a much more efficient animal because it has gained the same amount of weight having taken in much less feed to do so.



Feed intake and performance of cattle sired by two bulls from the same herd

Residual Feed Intake (RFI) is calculated as the difference between the expected intake and actual intake of an animal and is therefore expressed as a negative value for those animals who ate less than expected but grew at the same level. The graph below shows the average RFI for the 17 sire groups in one batch and it is interesting to note the range of values across the sire groups in the batch. The most feed efficient sire group ate on average 0.7 kg DM per day less than expected (green bars), and 1.4 kg DM per day less than the least efficient sire group who ate approximately 0.7 kg DM more than expected (red bars). The differences expressed by the sire groups in our commercial units are similar to those reported by studies from Alberta and Australia.

Residual feed intake by sire – B1&2

