New trial net feed intake EBVs (NFI)

Collaboration between NSW Agriculture’s Trangie Research Station, the Beef CRC and AGBU over the last year has culminated in the publication of new trial BREEDPLAN EBVs for the economically important trait Net Feed Intake (NFI). The research used data from Trangie, Beef CRC and industry based accredited testing facilities. NFI EBVs now give producers the ability to select for improved feed efficiency without compromising weight and growth performance. The information available has already revealed quite large differences between some widely used industry sires. The trial NFI EBVs and further information can be viewed on the Angus and Hereford Society web sites. Although still in a trial phase, the trait is targeted for inclusion in GROUP BREEDPLAN analyses with the acquisition of more data. People interested in testing their cattle should contact their relevant breed society.

In 2001, revision of the method for calculating mature cow weight EBVs was prompted by increased numbers of cow weight records on the NBRS database and industry feedback that mature cow EBVs of some sires did not seem to reflect the mature weight differences observed in their daughters. The extra information allowed a more intense scrutiny of factors affecting mature size, which in turn led to changes to the analysis yielding more precise EBV calculation. The new method was derived using Angus and Hereford data and primarily redefines the way cow weight records are grouped for analysis. Calf weaning weight information is now utilised making it crucial that breeders weigh their cows at the same time as their calves are weaned and weighed. The new method was implemented in the December GROUP BREEDPLAN analysis for all temperate breeds. Some changes in EBVs have been observed as a result of the revision, however the new EBVs should reflect more accurately the true genetic differences between sires for the mature weight of their daughters. A review of the method of analysis for tropical breeds is planned for early 2002.

IGF blood test

As the cost of feed intake measuring for NFI EBVs is quite high, the CRC and AGBU research teams are seeking methods to simplify and/or add accuracy to the testing. The most promising lead at present is the blood hormone IGF-1 (Insulin Like Growth Factor). IGF-1 is correlated to feed efficiency in pigs, and has been used for several years in our PIGBLUP genetic evaluation program. The blood test is conducted by Primegrow Pty Ltd, which has the exclusive right to commercialise this Australian owned IP.

AGBU scientists have recently analysed Feed Efficiency data from NSW Agricultural Research Station Trangie and the Beef CRC Tullimba feedlot. We have been very encouraged to find a favourable correlation between IGF-1 and Net Feed Intake. There are also genetic correlations with the fatness measures of around 0.5, genetically fatter animals have higher IGF-1 concentrations. We are therefore starting a major trial to hopefully confirm this, and fine tune methods for recording IGF-1 in seedstock herds.

With funding support from MLA, AGBU will lead a project this year to collect blood samples (on simple paper cards) from 8,000 weaner bulls and heifers in BREEDPLAN herds. To minimise costs, this work will be concentrated on the East Coast and to herds that scan. We will conduct more detailed tests on some research herds such as “Trangie” and the Durham Shorthorn research herd at Orange, which has just sent its first weaners to “Tullimba”. All animals in the CRC-2 Northern breeding project will also be recorded repeatedly for IGF-1. This will provide answers such as best age to measure.

Our current feeling is this IGF-1 test will not totally replace actual feed intake measurements. It has the potential to allow a better selection of the bulls to enter the feed intake test and to significantly add accuracy to EBVs at a young age.