

Net Feed intake Feed Efficiency EBVs



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Since its inception, BREEDPLAN has gradually been increasing the range of traits breeders can choose to record. The initial growth and milk traits, have been added calving ease, fertility and carcass traits, and now Net Feed Intake – a measure of feed efficiency.

Feed efficiency is recognised as one of the economically most important production traits. It particularly affects profitability of feedlots of course and also grazing enterprises. Its incorporation into BREEDPLAN, has however had to wait for detailed research on how to measure and interpret the trait. The NSW Agriculture research station at Trangie, with MLA funding, has been conducting a major experiment since 1990 to gather the required information. More recently they have been assisted by the Co-operative Research Centre (Beef CRC) at Armidale.

NET FEED INTAKE

The research teams have recommended that BREEDPLAN uses the measure NET FEED INTAKE (NFI). This is calculated from the amount of feed an animal eats, under or over, that expected for its weight and gain. This gives the important benefit for being independent of weight and gain. The common measure of gross feed efficiency (feed intake / weight gain), was rejected because of its close link with gain and mature size. Selection on gross efficiency would rapidly increase mature weight for example. With NFI however, more efficient cattle can be selected within any desired cattle size range.

HOW IS NFI MEASURED?

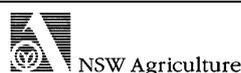
Individual feed intakes are measured on cattle over a set test period of 50 to 70 days. A standard, medium energy ration (10 MJ) is used. The tests can be done at test stations or on farm with self-feeders and electronic I/D. Yearling bulls are most commonly tested, though some steer and heifer data has been used. Test cattle are weighed regularly and compared to their intakes to determine if they have eaten more (+) or less (-) than expected.

REPORTING AND INTERPRETING THE RESULTING EBVs

NFI EBVs are reported as Kg of feed per day + or -. For example: -

Bull A + 1Kg

Bull B – 1Kg



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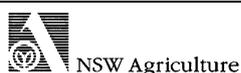
Bull B has eaten less than average for his weight and gain. If the two bulls were joined to average cows, progeny of B would eat 1kg less per day than the progeny of A (half the difference between the Sire EBV, as the cows contribute half the genes).

CORRELATIONS WITH OTHER TRAITS?

The research outlined above is continuing, to among other things, determine if there are any other traits affected by selecting for NFI. To date the only significant finding is a small link with leanness (more efficient, -ie EBVs, being slightly leaner). While this needs to be watched, the correlation is quite low eg. less than the birth to final weight link, and can therefore be managed.

Several experimental lines of steers have proven the trait is of similar heritability to weight gain. Heifers retained for breeding have to date shown no effect on fertility or other production traits, and the cows appear to be more efficient under grazing.

Further information: This BREEDNOTE is only an introduction to this complex topic. Further detail can be obtained from the Author or Steve Exton, Trangie Research Station 02 68



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