Recent estimates of genetic trends in the $Indexes published through BREEDPLAN show increasing rates of genetic gain and potential profitability in most of the performance-recorded breeds. These gains are worth millions of dollars to industry, as confirmed by a recent MLA-commissioned review. One graph from this review, for Angus for the long-fed Japanese market is shown below. [Note it differs a little from a graph in this year's Angus Sire Summary. This one has points in BREEDPLAN's history noted eg: introduction of carcase EBVs.] As with all $Indexes the units are $per cow joined in a self-replacing herd.

The gains are a tribute to the efforts of seed-stock breeders, both to give greater attention to selection and to improve the level of performance recording contributing to BREEDPLAN records.

The more recent gains are thought to reflect increasing attention being given to EBVs that address carcase and cow herd performance in addition to growth (see also page 19). As expected, the rates of gain are higher in breeds and herds with superior levels of performance recording. Differences in rate of gain between breeds can be as much as 3-4 times and between herds, considerably more.

$Index developments
Another factor contributing to these gains is increasing use of the $Indexes. These Indexes, developed with BreedObject, are now widely available for most animals of the Angus, Hereford, Limousin, Murray Grey, Poll Hereford, Shorthorn and Simmental breeds. They are being trialled in Brahman and Charolais, and in a number of large Composite programs that use BREEDPLAN.

In response to demand, an enhanced capacity has also been developed for breeders to develop their own customised $Indexes. This capability is contained in the BreedObject website http://www.breedobject.com and will be available in coming months. Another new feature will be the ability to search Breed Society sites for sale listings, then run customised $Indexes for these.

A pleasing development has been the recent adoption, by $Index user groups, of protocols on minimum amounts of performance records for publication of Indexes.

Steve Barwick
AGBU Ph: 02 6773 3481

$Index monitoring industry gains

Handling large AI programs

Early this year I spoke at a field day at "Lawsons Angus" at Yea (100km NE of Melbourne). They currently record on BREEDPLAN 1,500 AI and 500 ET calves. With such a big AB program spread over several properties, quality mobile facilities are essential. The AI barn pictured, is helping them achieve very good pregnancy rates. Ultrasound is also a key technology in the program. As well as the 'normal' uses such as pregnancy testing, Tom Lawson also sexes foetuses - only in high value sale females, as the technique is very slow.

Another implication of large AB programs is deciding all the matings. The Lawson's use TGRM (Total Genetic Resource Management). This computer program allocates matings to optimise $Indexes without too much inbreeding and within specified EBV ranges. TGRM is now being delivered under licence by some semen providers as part of their overall breeding package eg: Elders Breeding Services' Breedexact®, ABRI (Brad Crook) and AGBU (Wayne Upton) also offer TGRM consulting and analysis services.

Mobile AI barn left and interior above.
In brief

New scrotal tape

Carel Teseling recently showed me an interesting 'scrotal measuring gadget he brought from South Africa. It is about a metre long, with telescoping handle, the inner part is attached to a loop which is placed around the scrotum. As the inner handle is pulled out to firm up the loop, measurements are read from a tape on this handle. According to Carel (Phone: 02 6773 4602) it is accurate, but requires practice with the technique.

The unit retails for $40. It may not suit some crushes/Breeds/weather conditions, but seems well worth investigating if you are not happy with your current system.

Remember: scrotal measurements for BREEDPLAN can be up to 700 days, but are generally preferred on yearlings to obtain the best prediction of the fertility of female relatives.

Separating milk and growth

Last August I helped run, and spoke at, a CRC weaner production workshop at Busselton in the South West of Western Australia. I was pleased to share the platform with a local BREEDPLAN member - Ken Macleay, “Blackrock” Angus. His presentation included an interesting demonstration on how BREEDPLAN describes and differentiates between the milk and growth effects on weaning weight (200 day).

Two cows, with very different milk and growth EBVs (see right), were joined to the same sire. They both had bull calves, born within two days. "They weaned at similar weights" according to Ken - "and looked very much the same". At 18 months however, when their 600 day weight and the photo were taken, they looked and weighed very differently. The growth EBVs had really expressed themselves (see Table 1 with raw weights in Kg of the two bulls).

Bull A was then 170kg heavier. Up to weaning, the high Milk of cow B had boosted her calf’s weight and ‘visually hidden’ his lower growth EBVs.

Not all examples are as clear as this of course, but as Ken concluded, “It demonstrates the BREEDPLAN system for separating milk and growth does work, and the differences were predicted pre-birth. Milk is hard to assess visually as it is influenced by so many environmental effects. Actual weaning weights can also be influenced by calves having high or low growth genetics. Therefore you need BREEDPLAN to make any genetic progress (up or down) - in some situations of course, too much milk can be a disadvantage.”

<table>
<thead>
<tr>
<th>Bull</th>
<th>Birth Wt</th>
<th>200d Wt</th>
<th>600d Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>34kg</td>
<td>265kg</td>
<td>738kg</td>
</tr>
<tr>
<td>B</td>
<td>28</td>
<td>258</td>
<td>570</td>
</tr>
</tbody>
</table>

Bull progeny at 18 months, A on right. (Same sire, same age and same weaning weight).
**BREEDPLAN in semi-arid areas**

Sometimes I come across the misconception that BREEDPLAN use by commercial breeders (in their bull buying), is only applicable in more intensive areas. I recently heard a talk by Mat Smith “New Crown” Station, Alice Springs, firmly dispelling this myth.

Mat Smith and his wife Vanessa run a 3500 cow herd on a 7600sq Km station, 480 Km South East of Alice Springs. Average rainfall is 175mm, while this would certainly be regarded as semi-arid, the country is relatively ‘soft’, allowing British breeds to be run, predominantly Angus. Turn off is very seasonal, but generally steers are grown out, and then sent south for finishing. Several years ago, they decided to send their steers through the Certified Aust Angus Beef (CAAB) program at the Cargill feedlot and abattoir near Wagga. Milk tooth steers averaging 465 kg, take 7 days for the approx. 1700 km trip to Wagga Wagga including a spell at Steele Angel feedlot, in South Australia, en route.

While the first lines of steers did quite well, Matt decided to further improve compliance by increasing marbling. They introduced a draft of high marbling EBV bulls, via their bull breeding Stud `Gunnadoo’ in South Australia. (30 yearling bulls from this unit are sent up to the station annually). Feedback from Cargills has been very encouraging. The second line of 59 steers by the new high marbling bulls achieved marbling scores of 0 - 1%, 1 - 42%, 2 - 50%, 3 - 5% and 4 - 1% compared to marbling scores of 0 - 51% to 1 - 49% the year before. Seasonal conditions had been very similar as shown by the steers being the same weight although at a younger age on leaving “New Crown”. The average daily weight gain and kill weights of 580kg and 584kg respectively also remained similar.

“We think it was mainly the new genetics” said Mat. "As well as improving marbling, we use BREEDPLAN to ensure replacement females will be suited to our challenging environment. We select for moderate milk (under 10kg) and mature size EBVs and positive fat and scrotal size. Very big, lean and high milking strains will not rebreed here, but by using the right EBV profile we can dodge these", he concluded.

The moral: Whatever the environment and market, BREEDPLAN can assist selection of the right bulls and of course, higher EBVs are not always better!

Livestock advisers working with BREEDPLAN have always recommended using EBVs in conjunction with visual assessment of soundness and structure. While visual skills will always be required, new developments may lead to some structural EBVs to assist. An MLA PIRD project to develop a structural soundness scoring system was conducted by the Beef Improvement Association (BIA) and the Victorian Angus Technical Committee (Robert Campbell heavily involved). Two follow up workshops were attended by 17 people who agreed on the economically important traits. Analysis of repeat scores showed that skilled assessors can consistently score a range of structural traits. Ten people have since become accredited BeefClass Structure scorers (See BREEDPLAN website). This system is for describing an animal’s physical appearance e.g. for sale catalogues and to provide data for genetic analysis allowing prediction of the structure of progeny.

Fifteen BeefClass Structural Assessment Scores are available for use:
- Several feet leg and udder traits are scored on a 1 to 9 linear scale.
- Muscling: Scored from A+ (very heavy muscled) to E- (lightly muscled) as used by the National Livestock Reporting Service. (NLRS)
- Fat: Score from 1 to 6 as used by NLRS.
- Capacity(1 to 5): Higher capacity (volume), higher score.
- Sheath(1 to 5): Closer to the body, the higher the score.
- Temperament(1 to 5): Quieter animals have lower scores.

Future EBVs for Structural Traits?
Structural traits assessed in the PIRD project, were analysed by AGBU and exhibited moderate to high levels of heritability (0.17 to 0.39). These estimates are in line with dairy results, suggesting that selection can be effective.

Structural Assessment data from accredited scorers can now be submitted to BREEDPLAN. When enough data is held, scores will be analysed for possible EBV development. It is well recognised that the environment influences structure, just as it does the production traits. Hopefully, in the future, structure EBVs will assist semen and bull buyers by removing environmental effects.

**BeefClass structural assessment**

http://breedplan.une.edu.au