The Canadian Angus Association (CAA) has renewed its contract with the ABRI following a dream run in the first five years.

Chief Executive Officer of CAA, Doug Fee, visited Australia in February for an update on ABRI's latest technology and to sign off the new agreement. "Up to the mid 1990s our business opportunities were being stilted by the limitations of the system offered to us by our previous service provider. The diverse functionality and high capacity of ABRI's software, first installed in 1996, has allowed us to exploit fully the popularity of the Angus breed. Our registrations have more than doubled from around 20,000 in 1995 to over 45,000 in the year just passed - and with this we have moved from 4th spot in the Canadian industry to the industry-leading position."

"We are now being approached by other breed associations to handle their pedigree and performance recording. Both the American and Canadian Murray Grey Associations now use our facilities. This ensures that their data is in the correct format for BREEDPLAN's international genetic evaluations for the Murray Grey breed."

Canadian Angus has been delighted with its recent introduction of ABRI's internet services. A copy of its database has now been put on ABRI's WEB server where 30,000 data enquiries were recorded in the first month. Internet-based registrations have also been introduced.

Doug made time to visit the White family's "Bald Blair" Angus stud (below) and was impressed by the way scanning, gene markers, Herd Magic, feed efficiency measures and internet-based sale catalogues are being integrated to accelerate genetic improvement and to market the resultant product to a wide audience of buyers.

The last six months has also seen ABRI implement a comprehensive breed register for a group of progressive Angus breeders in Argentina led by the Bustingorri family. The database lives at ABRI's computer centre in Armidale. All data is transmitted from Argentina over the internet. Registration certificates and BREEDPLAN reports are returned to Argentina by Internet. This example demonstrates that we are now living in a virtual information age. Essentially, ABRI can now provide fast turnaround BREEDPLAN services to any country in the world.
In my editorial this time last year I reported the rumour that a gene marker for marbling was about to be commercialised in Australia. This has come to pass, as GeneStar®. Now we are told of another meat quality marker to be commercialised shortly - this time for tenderness. We should note that these markers do not account for all the variation in these carcass traits - there are other genes involved - more markers will follow. Articles in this issue discuss possible uses of these markers and options to include them in BREEDPLAN. All geneticists I have heard speak on the topic, agree that markers will be best used in conjunction with conventional performance recording, such as BREEDPLAN.

Another way of improving tenderness is to improve temperament. Some discussion on this option is presented, including the measurement of Flight Speed, and its genetic link to tenderness.

When improving the carcase traits, we must ensure functional cow herds are maintained. Articles on feed efficiency, mature cow weight and condition score and on new CRC trials in Northern Aust report on initiatives in these areas.

Perhaps the biggest innovation this year has been the rapid expansion of internet use to catalogue sale stock and search Breed Society databases. In several breeds now you can obtain lists of bulls to suit various markets/production systems - ranked in order of their Breed Object $ index.

With all these improvements, it is not surprising to see BREEDPLAN enrolments continuing to rise, particularly in Qld and many of our overseas clients. Welcome to all new readers - your feedback is always welcome.

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**BREEDPLAN Databases - On the Web**

**Do you wish to:**
- Check the latest EBV’s of your favourite AI sire.
- Find phone/fax details for other BREEDPLAN herds in your district.
- Research the pedigree of any registered animal.
- Screen the latest Sire Summary for an AI sire suitable for use in your herd.
- Rank your current drop of bull calves by various BreedObject $ indexes or EBV’s.
- Search up-coming Auction Sales for a suitable new bull purchase.
- Use a ‘Mating Predictor’ program to investigate possible progeny EBV’s for various combinations of sire and dam.

Well there’s no need to phone your Breed Association or your BREEDPLAN processor....The answers to these questions (and many more) are only a few mouse-clicks away... via the Internet.

As a part of its BREEDPLAN service, ABRI has made available to Breed Associations, an extensive range of web-based services, easily accessible to anyone world-wide who has access to the internet. These systems have access to the Association’s pedigree and performance database, which has been built up over many years of performance recording and accurate record-keeping. This is an invaluable tool to the serious cattle producer.

Check out the services available from the following web sites. You’ll be surprised how easy it is to use.

- Lowline: http://lowline.une.edu.au/

(Rows, some breeds may not offer all available services)

**Rapid Adoption**

Breed Associations and their membership have embraced the new technology whole-heartedly. Overall transaction statistics have risen from about 10,000 per month in July 2000 (one breed using the system) to over 115,000 in February 2001 (12 breeds). As the range of services on offer is expanded, and more users are exposed to the system and appreciate its usefulness, these figures will continue to rise. The sale-cataloguing component of the system can boast some impressive statistics.

For example:
- Brahman Week Sale Rockhampton 4,5,6 October 2000 (885 lots) received 5,481 hits from 200+ different users in the weeks leading up to the sale.
- Hereford and Poll Hereford breeders listed 1,277 lots from 14 sales during Spring 2000 selling season:
- Tartrus-Lancefield Annual Bull Sale, October 2000 (196 lots) received 1,715 hits from 118 different users during September and October
- Hazeldane Angus Spring Bull Sale (42 lots) received 933 hits from 167 different users
- Angus breeders listed 1,729 lots from 28 different sales during Spring 2000.

Turn to Page 15 for more details on using the system, and how to take full advantage of the features now available.

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**Editor centre, showing his skills in the meat area as well as cattle. (Assisting a group in Gladstone, prepare 1,000 kebabs from 100kg of rump).**

**Brian Sundstrom** is Cattle Breeding Co-ordinator with NSW Agriculture. Part of this role involves Technical Specialist and Advisory work with BREEDPLAN from an office at ABRI. His other major extension responsibility is with the Beef CRC Group.

**Murray Scholz**
Thai national breeding program

**BREEDPLAN** in Thailand continues to be utilised by the Thai national breeding programs for cattle and buffalo with funding support from the Australian Centre for International Agricultural Research (ACIAR). The cattle evaluations are being extended to include private farms - both at the small village level as well as to the larger farms.

There are now more than 20,000 Brahman and Brahman cross animals with performance records on the database. The Animal Genetics and Breeding Unit (AGBU), under ACIAR funding, is testing the Thai data from a female fertility perspective - extremely important under Asian agricultural conditions.

An ambitious but attainable breeding program has been established by the Thai Department of Livestock Development (DLD) for the genetic improvement of the Thai native cattle. This native animal is highly adapted to the Thai environment, having good fertility and disease resistance and moderate growth utilising Thailand’s native grasses. These animals are well suited to animal production in small villages but have, until now, been excluded from national breeding programs. Under the supervision of Dr Sawat Thummabood, the DLD has established a 1,000 cow nucleus herd for breed improvement. The progeny will be used in co-ordinated breeding programs in the village herds where the performance of their progeny will be monitored under actual village management. The breeding scheme was developed by the DLD in consultation with Dr Hans Graser at AGBU.

The buffalo database has more than 8,000 performance recorded animals and is assuming increasing importance as buffalo numbers decline at an alarming rate in Thailand. Numbers have decreased from 4.8M in 1993 to 1.8M in 1999, despite buffaloes having advantages over cattle in some production environments. Farm mechanisation (using two wheel tractors rather than buffalo for rice paddy work) and changing social attitudes (most children sent to school rather than tending animals in the field) seem to be the main cause of the decline. The remaining estimated 800,000 female buffaloes will need to become more productive if the Thai buffalo population is to at least stabilise, let alone increase.

The technology and information made available to Thailand under the ACIAR funded project will be showcased at a regional workshop to be held in Thailand in July. As well as outlining the breeding technology available, the workshop will aim to establish an inter-country working group on animal breeding in the region. The aim of the working group will be to foster information and technology exchange on animal breeding in a cooperative regional environment. With a regional focus on breeding, the working group will be able to coordinate R&D resources while applying the information and technology to their unique environments and production systems.

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Jack Allen

Buffalo judging, Chon Buri, Thailand.

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**features...**

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Producers using EBVs for weaner sales

In last year’s Newsletter, I outlined initiatives to provide Sire EBVs on weaner cattle at some store sales last Autumn. This was a joint Meat New Zealand/Beef Council activity. Cards with the EBV information were placed on sale pens. (see below).

There were four sales in the trial and about 35% of the 6,000 cattle were involved. The results were quite encouraging. Comments included “it’s a damn good idea”, “it’s the best thing that’s happened at the Feilding saleyards for a very long time”, “I won’t be buying bulls without EBVs in the future” and “do you think weaners without EBVs will be discounted?”. We are trying two more regions this year.

I thought you may like to read about two herds supporting these sales.

“Tunnel Hill”

“Tunnel Hill” is a magnificent pen of whitehead calves, account Richard and Suze Redmayne of “Tunnel Hill”, Turakina, were sired by Hereford bulls in the top 6% for 400 and 600 day growth in Australasia”.

This was the auctioneer’s opening patter, at the first of Feilding’s EBV weaner calf fairs for the year 2000. The heifer calves on the day were indeed magnificent, weighing 290 kg and selling for $490. The Redmaynes have been selling calves like these at Feilding for many years, however this sale was a bit different, with the Sire EBVs on display. This is fully in keeping with their policy of ‘completing the information loop’ from conception to slaughter. Individual details are recorded on the cows and their progeny, as part of Tunnel Hill’s policy of satisfying the customer.

One of their breeding objectives is for male calves to have the potential to reach carcase weights over 320kg at 15 - 18 months of age, while grading P1 or P2.

Collection of objective data starts each year with the purchase of selected (some heifers are rejected because of poor milk and growth EBVs) 18-month-old replace-

ment heifers from various Angus studs. The heifers are identified with a brass and a plastic eartag. As they progress through their productive lives, all relevant information is recorded on the farm database.

At calving, male and female calves are tagged with different colour tags, and the cows are drafted into calf sex groups. This makes the differential treatment of calves much easier and saves a week’s drafting prior to sale. Bull calves are left entire as long as possible.

Following the sale of the calves, the purchaser is supplied with a sheet containing historical data on each calf purchased - TB tag number, date of birth, weaning weight, age at weaning and weight-gain from birth to weaning. This enables weight gains to be further followed through the animal’s life and matched with slaughter data. At slaughter, if the owner of the cattle is agreeable, this data is then fed back to the Redmaynes and any problems or benefits can be traced back to a cow or group of cows. This then completes the maternal information loop.

Sires are chosen on strict criteria based upon their EBVs (they must rank within the top 10% of sires, in the Hereford Trans-Tasman Genetic Evaluation, for 400 and 600 day weight) conformation, length, muscling and temperament. The Redmaynes have developed such an impressive database of information that they know the performance characteristics of each of their paddocks. This enables them to utilise particular paddocks to achieve defined production targets. An ongoing development programme involving fencing off areas of dry sand for pine planting and creating paddocks of similar soil-type, will further enhance their ability to supply niche markets.

Russell Priest

New Zealand focus

Producers using EBVs for weaner sales

LOCATION: Turakina, midway between Bulls and Wanganui, in the North Island of N.Z.

COUNTRY: 950 ha of a mix of river silt, clay terrace (81 hectares of each) and the rest wet/medium-dry sand.

SOILS: Olsen phosphate levels on the sands are 20-25 and on the river silt 30+.

CAPACITY: The property carries: 355 cows (97% calving) plus replacements purchased in May. 3800 Romney ewes (lambing percentage 135-140).

100 hectares of pine trees ages 0-27 years (this area will be extended to 325 hectares with a 30 year rotation, harvesting 10 hectares/year).

346 weaner calves sold last year averaged $565.
Argentina
As mentioned on P1 there is now a growing numbers of Argentine herds using BREEDPLAN. Nine of these now do a GROUP analysis (see http://angusargentinano.une.edu.au). I was pleased to hear from Beno Bustingorri recently that their sales are among the top in Argentina. With another stud, they recently sold 270 bulls for an average of around $3300. “Our priority is moderate birth, high growth, fast finishing with rusticity and good foraging ability. We have been scanning for three years now, with visiting Australian scanners, and look forward to another round shortly.” Beno said.

Devon
A recent development in the Devon breed has been the US Assoc.(57 herds) joining the Aust Soc and planning to use BREEDPLAN. There are also discussions about Brazil (320,000 pure females), NZ and the UK joining the analysis in time. Genetic links are currently being reinforced.

Calf weighing
Last issue I reported on the new calf weighing scales marketed in Aust early in 2000. (see http://breedplan.une.edu.au/What's new). I was pleased and surprised to hear that some units of the Hartmann model with load cell scales, are being used in Nth Aust. by NAPCO. This is in the bull breeding herds for their Composite program. I believe they are working really well - though a little extra welding needed initially.

Composites and BREEDPLAN
I’ve been pleased to see some sound moves of late, to get Composite and Xbred data into BREEDPLAN. Several Societies will now take this on appendix registers. If links are good, EBVs will, in time, be able to be computed against that breed’s base. Some of the Northern pastoral Co's are submitting Composite data for within-herd analyses. The MLA-funded Multibreed database is also due for completion at ABRI this year. This will, amongst other things, assist AGBU research the best way to handle this complex data. A paper on Composite recording is available (http://www.compositebeef.com.au

Scrotal measuring
Scrotal measurements are now accepted into BREEDPLAN on bulls up to 700days (previously 600). This will allow some 2 yr old bull presale records to be used. Breeders are advised however, that the best time is from 15 to 18 months, in many production systems. ie: as we are trying to predict the fertility of heifer relatives - often joined as yearlings.

Cloning - When?
Sandy McClintock at a recent seminar: “If you’d asked me 10 years ago when wide spread commercial cloning would be available, I’d have said a 50% chance in 2001. Now I would still say a 50% chance in 10 years”.

Russell Priest

in brief...

Argentina
As mentioned on P1 there is now a growing numbers of Argentine herds using BREEDPLAN. Nine of these now do a GROUP analysis (see http://angusargentinano.une.edu.au). I was pleased to hear from Beno Bustingorri recently that their sales are among the top in Argentina. With another stud, they recently sold 270 bulls for an average of around $3300. “Our priority is moderate birth, high growth, fast finishing with rusticity and good foraging ability. We have been scanning for three years now, with visiting Australian scanners, and look forward to another round shortly.” Beno said.

Charolais sired weaners on those great first cross Freisian cross Hereford cows of the Meads.
I recently arranged a visit to “Ebony Hills” for a CRC short course group. Everyone came away stimulated by what they had seen, so I thought a summary would be of interest to readers. The “Ebony Hills” enterprise, just north of Armidale, incorporates Angus stud and commercial herds, with links to an alliance with commercial breeders and a branded meat marketing initiative.

Phil and Michelle Wooster have been building up the Ebony Hills stud for 14 years. This was initially fast tracked through the purchase of some cows with very good BREEDPLAN figures, then multiplying these with ET. Astute knowledge of Australian and US figures, before they were so widely understood, gave them a good ‘jump start’. “Now that we have the stud component of our herd built up to 115 females, we mainly rely on AI” Phil explained. “Our genetic return on investment is now generally best from buying top semen for every cow, rather than ET on a few cows”. Commercial females are also AI’ed to build up our BREEDPLAN information.

The Ebony Hills Quality Beef alliance incorporates;
- MSA and CattleCare accreditation,
- The stud which breeds bulls specifically for the alliance’s market,
- The commercial producers who pro duce the cattle,
- Tullimba feedlot, which finishes all the cattle to a similar specification,
- The Northern Co-operative Meat Company which produces the alliance’s carton product and some body beef,
- Don Allen & Co abattoir which processes body beef for Brisbane and inland butchers,
- Butcher shops that require a QA and branded product and
- A carton wholesaler to provide branded individual Primals to the butcher shops.

Steers from the alliance, for the domestic market, are managed for heavy weaning weights, the closer to 300kg the better, then go straight to “Tullimba” feedlot. They are custom fed for 55 days, to an average carcase spec of 200kg and 10 mm P8 fat.

“Bulls with high EMA and Yield% EBVs are used. For the Domestic market, marbling is not critical, though we stay on the positive side.” explained Phil. “We initially felt that neutral fat depth EBVs were best, to keep a balance between yield% and cows which carry enough condition for rebreeding. Feedback from our butchers keeps pressuring us to go a little leaner however, so we are now cautiously moving this way. We try to ensure cow fertility by grazing management and strong selection on fertility EBVs. This concentration on fertility traits at the same time as selecting for higher yielding cattle has meant that so far we have not had too many cows dropping out empty”.

Other points include:
- Growthy, high yielding steers with positive marbling are also demanded by feedlots feeding for the Japanese long fed market so this preserves diversification.
- ‘Cell’ grazing is used on “Ebony Hills”, with some very positive effects on pasture composition. Stocking rates around 90 dse are used.
- The stud aims at the following ‘EBV profile’: 400d wt, top 10%; B wt, breed av; with moderate cow size and pressure on the carcase and fertility EBVs as described above. Use of BreedObject selection indices is assisting this.
- Bulls for sale as yearlings are feed efficiency tested at “Tullimba”. “In time, we hope that EBVs will be possible for this most important trait - when paying custom feeding bills, we are acutely aware of this” concludes Phil.
Clonlara Droughtmaster Stud is based at "Dilga", a 7500ha property at Glenmorgan, in Southern Queensland, midway between Goondiwindi and Roma.

This is a family operation run by Ed and Carol McCormack together with son and daughter-in-law Gus and Jen. They run 800 cows and 800 followers on a mixture of Bauhinia, Belah, Brigalow and Poplar box country. This is interspersed with ironstone ridges and creeks which can make calving data difficult to collect in a wet summer.

An on-property bull sale is conducted each spring in conjunction with Glen Fosslyn Stud (another BREEDPLAN herd) offering 80 -100 2 y.o. bulls.

All cows on Dilga are recorded on Herd Magic with cow calf ID, birth data, weaning and yearling weights, mature cow weight, scrotal and carcase scan data in bulls. However, only the four single sire Droughtmaster herds are recorded on BREEDPLAN. A further 150 Droughtmaster cows are joined to Droughtmaster sires for bull breeding in two multiple sire groups. The balance of the herd is crossbred and composite with full data collection and selection done in conjunction with Herd Magic data. These cattle are all multiple sire joined. The fast building Composite bull-breeding herd comprising Droughtmaster, South Devon and Tuli genetics (third generation composite in utero) will this year be recorded on BREEDPLAN in spite of the multiple joinings.

The pedigree Droughtmaster herd was first recorded on BREEDPLAN in 1988. "This programme suffered some setbacks in the early 90s with cattle on the road in the Northern Riverina and on agistment in South-Western NSW due to prolonged drought" says Carol. "The slow acceptance of BREEDPLAN by our buyers, meant that recording was not a priority, but in retrospect this was probably not a good management decision. Data collected is primarily growth, scrotal, muscle and fat scans. Birth weight is not practical to collect under our conditions but the environment can cause problems in a big spring, so we are very conscious of structure, particularly in relation to shoulders".

"There is a perception out there that BREEDPLAN or ‘figures’ cattle are not practical and have poor structure. We put plenty of pressure on our cows and cull on structure irrespective of figures. High growth lean cattle are suspect as our environment can be both kind and very harsh so the cows require do-ability as a priority" observes Ed. The high mature weight cows in general have dropped out over the years on fertility criteria. Selection for growth can be controlled by the big cows falling out of the system, but I believe that hands-on experience with cows and figures should allow astute breeders to get the majority of their cows to a good level of production without too many hitting the wall when things get tough. These judgments should be made in environments which can give a run of good seasons capable of supporting extreme cows, followed by several poor seasons which can cause the calf factory to burn down".

"BREEDPLAN is a very useful tool to us in our selection. For example it easily allows the bottom % to be dropped from the cow herd each year on performance over a number of calvings. Remembering these cows have already fulfilled our structure criteria" says Carol. "In young cattle we are not too selective on individual growth figures, providing they fit into a window. Things like sickness (eg 3-day) or short-term lameness due to physical interaction particularly in groups of young bulls, can cause aberrations in growth rates which are not genetic but very hard to document. BREEDPLAN is particularly useful for gauging the performance of sires over numbers of cows, which takes out the static".

"Commercial bull buyers are increasingly aware of BREEDPLAN, but often see high EBVs as necessarily best, rather than looking for a balance.

Our major regret is that as yet few Droughtmaster studs have this data available, so we must sometimes select sires by eye, and cross our fingers! We have been burnt on occasions, and wasted good cows for a year in the process” concluded Ed.

Richard Apps
See also http://www.compositebeef.com.au
“Caiwarra” bull selection field day

Noel & Dallas Daley, ‘Caiwarra’ Julia Creek, hosted a well attended Bull Selection field day organised by the NWQ BIA in early September. The keynote speaker was John Bertram, QDPI, who was nationally recognised this year by the Australian Veterinary Association for his research and extension work on bull selection and management.

Although the NWQ BIA has organised many bull selection days, the day presented new and challenging information to generate discussion and to keep NWQ producers abreast of industry developments.

Good attendance and enthusiastic participation in the practical evaluation of the bulls ensured the day was a success. The need for bull buyers to request objective information on bulls prior to purchase remains as an extremely important and ‘take-home’ message.

In addition to the value of using Brahman GROUP BREEDPLAN EBVs in bull selection, the day identified the necessity for bull buyers to expect to see a ‘Bull Examination Certificate’ completed by a veterinarian for each bull purchased demonstrating the bull’s immediate reproductive potential. That is, ‘Producers can’t afford to buy a new pair of jeans if the bull can’t transfer his genes to progeny’.

The Daley family were able to provide Estimated Breeding Values on most of the bulls that were in the yards on the day. It was an interesting exercise as many were young bulls. One in particular was younger than the others (14 months) and a bit lighter in weight, but his EBVs for 400 day weight were well above the other bulls.

The Caiwarra, Elrose & Tartrus studs will offer over 200 Brahman GROUP BREEDPLAN rated bulls at their annual sale held in Cloncurry on 23 April.

Cloncurry BREEDPLAN Workshop
A one day BREEDPLAN workshop was held in Cloncurry in late July 2000. The workshop was designed for stud users and those who wanted to know more about BREEDPLAN for Bull Selection. The instructors were Richard Apps from Tropical Beef Breeding Services, Rockhampton and John Bertram, QDPI, Goondiwindi.

Over 20 people attended the workshop from as far away as Katherine Rural College and the Barkly Tableland. Most of the participants were from studs and the larger pastoral companies, although there were some commercial cattlemen in attendance. Everyone who attended the workshop said that they had learnt much about BREEDPLAN from the course that they hadn’t known beforehand. It is recommended that anyone who has stud cattle or uses BREEDPLAN as one of their tools for bull selection tool should attend such a course.

Felicity Hill and John Bertram

Vietnam

A recent ACIAR project in Vietnam, is showcasing bulls from several Australian BREEDPLAN herds.

Brian Burns, QDPI Rockhampton, is OIC of the genetics, animal breeding and reproduction section of the project, which started with an initial industry survey and situation statement. As a second priority, Brian arranged training workshops on genetics, animal breeding and AI. These were held North of Hanoi and in the Central Highlands of Vietnam and also involved Rockhampton QDPI Artificial Breeding Specialist, Greg Fawcett.

The third initiative has been an experimental crossbreeding program, benchmarked against the local Laisind breed (Yellow cattle x Red Sindhi). Some 450 Laisind cows have been AI’d to the following Australian breeds:

- Red Brahman (below); Red Brangus; Droughtmaster and Belmont Red. “Our first calves are on the ground now and are looking good. We will evaluate them with simple performance records. We selected bulls with EBVs indicating moderate size and tropical adaption”, Brian told me. “Previous imports of large temperate breeds had not been successful.”

- Project organisers would like to thank “Lancefield”, “Tartrus”, “BimbadeenQ”, “Woodbine”, “Mt Eugene” and “Vet Farm Uni Qld” for assisting with semen. Jack Allen and Michael Rush, from ABRI, are also involved, with other aspects of the program.

Felicity Hill

Project organiser

Brian Sundstrom

ABRI, Rockhampton

Red Brahman (below); Red Brangus; Droughtmaster and Belmont Red. “Our first calves are on the ground now and are looking good. We will evaluate them with simple performance records. We selected bulls with EBVs indicating moderate size and tropical adaption”, Brian told me. “Previous imports of large temperate breeds had not been successful.”

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Bull fertility research continues

The Bull Power I research project, (1992 to 1997), investigated a range of physical, seminal and behavioural traits and their influence on calf getting ability. This project initially screened some 1000 bulls and progressed to collect calf output data from 212 bulls over four joinings in multiple sire mobs.

Unfortunately, but not unexpectedly, researchers concluded that there is no individual test, or tests, that explained all the variation in calf getting ability. To minimise the risk of bull failure due to infertility, each bull should be screened for a range of physical, seminal and behavioural traits.

The traits being measured or scored are age, weight, body condition score, scrotal circumference, testicular tone, sheath depth and navel width, navel thickness, sheath score, sheath retractor muscle, semen traits - gross motility, percent progressive motility & percent normal, and serving capacity - interest, mounts and serves.

The data collected will provide a picture of how much and when the expression of these characteristics change as bulls mature. This will assist breeders to better time selection decisions, and particularly at younger ages as more northern bull breeders and buyers move to use younger bulls.

Serving capacity testing

Bonsmara, Belmont Red developments

Previous issues of BREDPLAN News have outlined the initiative between the Australian Belmont Red Assoc. and the South African Bonsmara Soc. to compare these very similar breeds, lays the foundation for a possible joint genetic evaluation.

Following the initial importation of Bonsmara embryos in 1997/98, the number of purebred calves in Australia is steadily growing, with further embryos arriving for implantation this year. Bulls from the first ET programs are now being used (naturally & by AI) over Bonsmara and Belmont Red females, in both countries.

Several hundred Bonsmara x Belmont Red F1 calves are expected this year in Australia, with breeders making concerted efforts to run them alongside pure Bonsmara and Belmont Red calves to enable direct comparisons to be made through Belmont Red BREDPLAN.

A number of breeders report they are pleased with their calves’ conformation and muscling to date, and are looking forward to the ‘EBV evaluation’ with Belmont Red cattle. Recent work in South Africa has compared Belmont and Bonsmara steers under grain finishing. This has shown very little average differences for growth, feed conversion or carcase measures. Given the very similar development of Bonsmara and Belmont Reds, a goal from this work is to increase the gene pool size from which selection can be made.

Among breeders’ goals is polling (virtually non existent in Bonsmara in South Africa) and Mort Hudson, Tremere, reports some early success in capturing the pool gene in his F1 calves.

Semen exports

Geoff Maynard, “Mt Eugene”, is also heavily involved with Bonsmara and Belmont Red. I was pleased to hear from him recently that he had exported some 20,000 straws of semen (16,000 B Red, 4,000 Bonsmara) to Brazil late last year. A large proportion went to the Vestey Leachman composite programs. They have been buying for 6 years now for a total of around 60,000 straws. The Brazilians are specially happy with the sire MTE950207. “80+% of his daughters conceived in a difficult Tropical environment. They are below av. birth weight, trait leaders for growth, and 50% of male calves have been retained as bulls” Geoff told me. Some of the Bonsmara semen is also being used on Nellore cows.

Richard Apps

Tropical Cattle Technology Services.
A joint initiative between eight tropical beef cattle societies, Meat and Livestock Australia’s North Australia Program and ABRI.

Herds involved in this research are all BREEDPLAN recorded and represent a number of key northern breeds. They are Gyranda (Santa Gertrudis), Clonlara (Droughtmaster - see story page 7) Narayen Research Station (Belmont Red) and Belmont Research Station (Brahman & Belmont Red).
In recent months David Johnston, Meridy Cadel and Toni Reverter at AGBU, have completed many genetic analyses from the CRC 1 database. This included all CRC1 progeny test results from the straightbreeding and cross-breeding experiments 1993-2000. Over 8,000 progeny by BREEDPLAN sires had production and carcase information recorded.

All results are interesting but for the moment there are 4 aspects of beef tenderness that deserve comment:

**EBVs for tenderness:** In December 2000, EBVs were released for tenderness in the tropically adapted breeds Brahman, Santa Gertrudis and Belmont Reds. There is encouraging genetic variation for the tenderness trait and the large between-sire differences in the Brahman breed provides scope for serious genetic improvement of this complex meat quality trait. In CRC I the extremes of tender and tough Brahman sires have been used to breed divergent progeny lines for evaluation in large northern herds involved in CRC I (see detail top of page 11).

**Tenderness and Meat colour:** Results from the progeny test show a low to medium heritability for meat colour. This contrasts with post slaughter pH for which the heritability is close to zero. A more fascinating result is that there is a significant negative genetic correlation (-0.45) between meat colour and tenderness (shear force). This means that the progeny of sires with lighter colour meat (ie as measured colourimetrically) will be more tender (lower shear force). Is this a simpler way to select for tenderness?

**Tenderness & Temperament:** Another interesting result is a genetic relationship between temperament (as measured by Flight speed) and tenderness in tropically adapted cattle. Here the genetic correlation is again negative (-0.43) which says that sires with faster flight speeds will produce progeny with less tender beef. Is this another valuable lead in understanding the genetics of tenderness in tropically adapted cattle? (Visual flight speed and crush temperament was also recorded. Further analysis of the usefulness of these scores is needed).

**Gene Marker for tenderness:** CSIRO's Bill Barendse has analysed data from the CRC database looking for associations between candidate genes and extremes of beef tenderness. To do this he has chosen animals from all 7 breeds in the CRC's progeny test and based on many sires. At this point the work has led to a provisional patent on a direct gene marker for tenderness in which the favourable gene shows a different frequency in some breeds involved in the CRC progeny test.

Bernie Bindon

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**Figure 1:** Flight speed being measured as the beast leaves the crush. The time taken between breaking two light beams, a set distance apart. This may in future be able to be recorded on data capture devices linked to scales.

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**Feeder steer schools**

The 6th Annual Armidale school was again booked out and very successful. BREEDPLAN was closely involved, with 4 breeds of bulls yarded for exercises. Proceedings are available from: Peter Dundon email:- pdundon@metz.une.edu.au, or on the CRC Website - http://beef.cfc.org.au

Locally adapted versions of the school will be run in Qld (Emerald), 18 - 20th September and in Victoria 3 - 5th July.

**Marbling Seminar**

All you need to know about marbling: 3/4 October - a major CRC seminar - Northern NSW venue to be decided.
The ambitious Northern Breeding Program of CRC II is now well underway and looking good. A major aim is to evaluate the effect of selection for carcass traits on fertility and other “adaptation traits”. The large group of genetically known cattle being generated for this, will also provide a base for many other studies.

A total of 6,000 Brahman and Tropical Composite cows are involved for two joinings. They will provide approx 2,400 progeny for the CRC.

Heifers will stay in Qld on CSIRO and QDPI research stations (Toorak, Belmont, Swans Lagoon and Brians Pastures). These will provide the base breeders for the ‘fertility/carcass study’ outlined above.

Steers will be divided, half staying in Qld and half sent south to NSW for finishing. An extra aim here is to try to understand a fat deposition difference which came to light in CRC I. [Northern cattle sent south at weaning, grown out quickly, then feedlot finished had higher marbling and yield than the same cattle staying North for a slow backgrounding, then grain finish in a Northern feedlot. This study will test if the difference was in the Northern backgrounding or finishing.]

Major industry herds are closely involved in the project, providing their cows for two joinings: Brahmans - Stanbroke; Consolidated; Tartrus; Cona Creek and Belmont. Composites - NAPCO; AA Co; Mt Eugene and Belmont. Note: while the composites vary a little in breed content, they have common breed groupings of 20-30% Brahman, 20-30% Sanga and the remainder British breed.

Sires being used are from CRC1 and the industry herds. They were selected on divergent carcass EBVs, DNA marker work and fertility EBVs where available. Two joinings have been completed. The first weaning is now underway, and some weaners will come south this June for backgrounding then finish in “Tullimba” feedlot.

Brian Sundstrom

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### Feed efficiency - mobile test unit

Studies on the genetics of feed efficiency continue to be a major part of CRC II. They include the selection line herd at Trangie Research Centre, steer lines tested at Tullimba feedlot and also gene marker work. The results continue to be encouraging, but also challenging.

- Net Feed Intake (NFI - the trait used) is of similar heritability to growth.
- While there appear to be no major genetic antagonisms, a couple need watching in some production systems eg. Efficiency is associated with slightly leaner cattle. This could have longer term implications for female fertility. Similarly, the slightly negative association with marbling (see p12) could be of concern for some breeders.
- These antagonisms fortunately seem to be only ‘moderate’, so they can be ‘bent’ with careful selection (eg. weaker genetic correlations than Birth Wt to Final Weight). To do so however, we need good EBVs on NFI, and - to obtain these we need lots of data - which is costly to the stud breeders! Although some pioneering studs have started, a lot more is needed, and I'm worried the innovators may give up unless across herd EBVs come soon.

**New Mobile Feed Intake Recording Service.**

To test ways of assisting the stud industry collect NFI data, NSW Agriculture with MLA support, has set up a new mobile unit. This has two Rudd self feeder/intake recorders - which can be transported to participating studs. Participating studs have to provide feed, install the units on a sound pad and collect the data. The project will initially cover other costs, in an endeavour to ‘kick start’ this important initiative. Priority will be given to herds well linked to other testers ie. to assist across herd EBVs. Interested people should contact Steve Exton at Trangie - (02) 68887404 or their Breed Society.

Brian Sundstrom

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A Rudd intake recorder installed at “Bald Blair” Angus stud
The genetics of marbling

The genetics of marbling continues to be unravelled. Recent work has shown the heritability of intramuscular fat percent (IMF%), a chemical measure of marbling, is 0.38 in both temperate and tropically adapted breeds used in the Beef CRC straightbreeding project. IMF% is positively correlated with other measures of fatness and conversely, negatively related to retail beef yield%. The genetic expression of the trait is enhanced by grain feeding and to heavier weights but the genetic correlations between the different treatments were very close to one. This means that little re-ranking of sires is expected when their progeny are finished to different market weights, from pasture or grain, or in a temperate or sub-tropical region (on grain). The bull who produces superior marbling progeny in the feedlot will also be the best bull if his steers are finished on pasture.

Key CRC Results:
- IMF% is about 35 - 40% heritable. The genetic variance of IMF% in temperate breeds is twice as much as tropically adapted breeds.
- IMF% is negatively genetically correlated (-0.40) with retail beef yield%.
- IMF% is positively genetically correlated (0.2-0.3) with carcass fat depth.

Effect of Market on genetic expression:
- Greater genetic expression of IMF% at export weight carcases compared to Domestic weight but very high genetic correlation for IMF% between markets (0.92-1.0).
- IMF% is very high genetic correlation for IMF% between grain and pasture finishing (0.96-1.0).
- IMF% is very high genetic correlation for IMF% between regions (0.94), (Tropically adapted breeds only).

Gene markers to BREEDPLAN

Research is underway to incorporate genotypic information into BREEDPLAN. The GeneSTAR marbling test has provided AGBU scientists with the first direct gene test from which to develop models. It is expected that several other genes will be identified over the coming year. Several methods of utilising the information are being examined. The final model will depend on the size of the effect of the gene on currently recorded BREEDPLAN traits and the number of animals in a breed that are genotyped.

David Johnston

BreedObject on the Web

The BreedObject web site (http://www.breedobject.com) has now been active for almost 12 months. The site encompasses a listing facility for sale bulls and semen, and use of BreedObject technology to rank bulls for profitability for different commercial production purposes. Facilities are available, and under development, to customise rankings to the needs of individual users.

The functionality of the site was extended in 2000 with the aid of funding from the Information Technology On-Line (ITOL) program of the Commonwealth Department of Communications, Technology and the Arts. NSW Agriculture, the Agricultural Business Research Institute, MLA and the Performance Beef Breeders' Association provided further in-kind support.

The site is active in eight breeds. Thirty-seven sale or semen catalogues were listed in 2000. Over much of Spring 2000 the site attracted visits at a rate of 600 per month (20 per day), representing about 8000 hits per month. The 600 visits are from an average of 460 different users. Users are mostly Australian, but with strong interest as well from the USA, Canada, Europe and South America.

David Johnston

AGBU and ABRI

On the occasion of AGBU’s 25th Anniversary, Hans Graser paid tribute to the Unit's special relationship with ABRI. ABRI is the main source of beef data that we utilise in our research. Some of our projects, eg. validation project, have generated considerable data and additional demand on the development of the NBRS database. ABRI has successfully commercialised BREEDPLAN on an international market. This has generated additional R&D opportunities for AGBU. ABRI has also been able to service new clients (breed societies) and implement BREEDPLAN in a whole country (ACIAR projects in Thailand and Philippines) with our assistance. AGBU gets new challenges in R&D when assisting ABRI in servicing these clients. Much of this client-oriented R&D will in the future benefit the operations of BREEDPLAN in Australia and either improve its accuracy or make it more affordable.

The close interaction between ABRI and AGBU has allowed a speedy transfer of R&D results from the researcher to the industry. The use of Beef CRC data in the genetic evaluation of beef cattle and the subsequent early implementation of improved models for carcass traits is but one example. AGBU’s interests are in research to create new knowledge and new software that benefits Australia’s livestock industries. ABRI’s interest is in putting this knowledge and software into a commercial world with a break even of cost and income. By combining these interests we are able to provide a powerful team approach.”

Hans Graser

Staff news

Meridy Kadel joined the beef research team in December last year. Meridy hails from a farming and grazing property near Roma, where her interest in beef cattle production was founded. After completion of year 12 she joined the workforce for two years working as a Jilamaroo, Stud groom and as an Advertising Representative (Bull sales specialist) for the Western Star Newspaper. In 1999 she graduated from the University of Sydney with a Bachelor of Science (Molecular Biology and Genetics). This was followed by a year of study at the University of New England, from which she graduated with first class Honours. Meridy joins the beef group at AGBU as a Research Assistant and looks forward to furthering her career in beef cattle genetics.
TGRM the next genetic tool

BREEDPLAN significantly increases the opportunity for genetic improvement by supplying information on most of the economically more important traits. Weight, carcase and fertility traits are all addressed by BREEDPLAN EBVs. The challenge is to make best use of this information - which EBVs are most important to profit and what mating plans will maximise progress without greatly increasing inbreeding.

Two tools developed for use with BREEDPLAN can assist. - BreedObject and the newer one, TGRM (Total Genetic Resource Management). TGRM has been developed by the Department of Animal Science at UNE with financial support from MLA.

BreedObject uses EBVs, market specifications and production details from a commercial beef herd to rank, in $index terms, animals most suitable for that scenario (see also p12, 15 and p17).

TGRM is a mating program ‘designer’ to maximise genetic gain while controlling inbreeding. The breeder tells the TGRM operator which animals, males and females, are available for mating, including semen, or if ET will be used, and selects the market-production scenario (which index). TGRM then maximises the index value of the progeny within given constraints such as: only three mating paddocks or imposing a maximum birthweight. (note: If control over EBVs is exerted at the sire level eg. ignore sires below or above accepted ranges, some improvement could be foregone. Such sires, used over the right cows - remember half the genes come from the cows - may produce acceptable progeny.)

A strength of TGRM is that it operates at the progeny level predicting their EBVs from the parent’s EBVs. TGRM juggles the available sires and dams within the given rules, to optimise the mating program.

TGRM was recently used in three Angus herds to allocate matings. They all use the standard Angus longfed index as their primary selection criteria. The increase in index value of $3.00 per year for these herds, showed their excellent progress since starting to use BREEDPLAN in the late 80’s. If TGRM selected the sires and organised the matings, the average index for the 2001 progeny could theoretically increase by more than $10. In reality this is only achievable if there are no constraints on sires used (ie. plenty of semen available and it is affordable) and if AI has 100% success. The true outcome will be somewhere in between, but the potential benefits from such smart tools is impressive.

For herd 2 TGRM matings were compared with the actual matings after the managers had considered all factors such as semen price and availability. The prediction was a jump for 2001 born calves of at least $6.

To date 10 herds from four breeds have investigated the value of TGRM. MLA is developing a marketing plan and looking for service providers over the next few months. In the meantime interested people should contact me.

Wayne Upton
Ph: 02 6773 3141
wupton@metz.une.edu.au

AGBU 25th Anniversary celebration

AGBU was established in 1976 by the New South Wales State Department of Agriculture and the University of New England to carry out research, development and training in the genetic improvement of livestock for the benefit of Australian agriculture. From a small beginning of two scientists, one extension specialist and one secretary, it has grown to a team of 20 scientists, postgraduate students and support staff. It has an excellent international reputation and as a consequence, an active program of visiting scientists.

AGBU’s achievements include:
- BREEDPLAN, PIGBLUP and OVIS genetic evaluation systems which have been widely adopted by the beef, pig & sheep industries, respectively;
- BreedObject Software to calculate economic weights and selection indices tailored to individual requirements;
- Recognition as a leader in methods for the prediction of breeding values through these genetic evaluation systems;
- Leadership of the Beef CRC’s genetics program;
- New knowledge of the genetics of growth, carcase and fertility traits in beef cattle and pigs;
- New methods for the estimation of genetic parameters;
- New methods for segregation analysis with and without genetic markers;
- Regular short courses for student and scientists in work related areas;
- These achievements have been made possible by grants from all major livestock R&D funding bodies in particular the MLA & PRDC and the ongoing support of UNE and NSW Agriculture.

AGBU’s work has greatly assisted the improvement of livestock through breeding in Australia and overseas. A vibrant scientific program continues with regular publication of research results in Scientific Journals. However, its main purpose is to meet ongoing demands from Australia’s livestock industries for research, development and training in genetics.

AGBU has had three directors. Pictured (from left) Keith Hammond (founding), Hans Graser (current) and Mike Goddard, at the 25th Anniversary celebrations.
MLA’s planned investment in genetics

MLA plans to invest in continuing genetic improvement in the Australian beef industry.

There is significant national investment into beef cattle genetics R&D. MLA provides support for the Animal Genetics and Breeding Unit (AGBU), projects with the Beef Quality CRC, and a range of projects across the southern and northern Australian beef industries.

In addition, many other organisations make substantial R & D investment in genetic improvement of beef cattle notably the Commonwealth government through the Beef CRC and State Departments of Agriculture. Delivery of R & D outcomes is further supported by substantial commercial investment. This includes investment through breed societies, genetics companies and service companies such as ABRI that underpins the national herd improvement effort.

MLA has reviewed its past investment into beef genetics R, D & E as part of a comprehensive rebuilding of the on-farm R&D portfolio. The Genetics Review highlighted the critical role that genetic evaluation and improvement can play in continuously improving industry productivity, and suggested ways that greater gains could be made from genetic improvement. The review process included considerable consultation with all sectors of industry and with the full range of organisations who are actively involved in our national beef cattle genetic improvement effort.

The revised MLA Beef Genetics R&D plan is now nearing completion. It focuses on 5 key areas:

1. Improved use of existing technology to deliver higher rates of genetic improvement in profit traits in the seedstock sector.
2. Improved understanding of the profit impact of genetics in all commercial enterprises leading to increased demand for bulls with BREEDPLAN EBVs and $Index.
3. Further development of our core technologies (BREEDPLAN, BreedObject and TGRM) particularly to allow optimal use of new information sources such as gene markers.
4. Strategic R&D concentrating on further development of markers for traits such as marbling, NFE, disease resistance, further improvement of advanced reproductive technologies, and investment into functional genomics for cattle.
5. Industry-wide monitoring and benchmarking of genetic improvement so that industry (breeders, breed societies, R&D organisations and investors) has clear, practical information on how we are performing.

The plan sets high targets for achievement over the next 5 years. Recognising the breadth and depth of experience, technical expertise and focus clearly apparent across the beef genetics industry, we are confident that great results will be achieved.

MLA looks forward to working with the beef cattle genetics community to further strengthen the competitiveness of your beef industry.

Limousin release EBVs for docility

The Limousin breed has now published EBVs for docility for about 120 of their most widely used sires. These EBVs were calculated from some 12000 scores on individual animals provided by breeders over the last five years.

The animals are scored on a simple five point scale: 1 (docile) 2 (restless) 3 (nervous) 4 (flighty) and 5 (aggressive). The score is normally based on the behaviour while being handled through a crush.

It is important that animals are scored at a young age (6-10 months) before too much handling by humans. Variation between scorers is taken out by the analysis, as animals are only compared within a contemporary group. (same previous handling and same scorer).

Staff at AGBU recently calculated the heritability of docility scored by Limousin breeders at 0.31 which compares favourably with other estimates of temperament heritability, such as the objectively scored flight speed.(see p10 Ed)

EBVs range from about +30 to -30 and reflect the difference in the proportion of progeny that will be scored as 1 or 2.

Example:

Sire A has a docility EBV of +20 compared to Sire B with a docility EBV of -10. As the sire contributes half of the genetics to it’s progeny, these EBVs indicate that compared to Sire B, 15 per cent more of the progeny of Sire A will be scored as docile or restless.

There is considerable genetic variation in temperament for all breeds, so this scoring system could be used by any Taurus breed to identify “bad” sires and improve overall docility.

Alex McDonald
CEO Limousin Society
Animal search and mating predictor

Murray Scholz has outlined (page 2) the rapidly expanding range of options to search Society databases. Searching for animals with particular characteristics is one of the most used features. I thought an example, with a few tips, may be of interest.

**Animal search - getting started:** A list of the web addresses of participating societies is given on page 2. Alternatively go in via the BREEPLAN site [http://breedplan.une.edu.au](http://breedplan.une.edu.au), then links will take you to most Societies using BREEPLAN. Participating Societies will have something like: EBV search, Animal search and Online sales catalogues. Taking a Hereford example, if you selected EBV search and then specified: Published Sire; BWT<4.5; 600d WT>70; Milk>10; EMA>2.3, you would be listed:

Note the four right hand columns give the $ indices for various markets calculated by BreedObject for scenarios specified by Bob Freer for the white faced breeds.

Another popular feature of the system is the ability to search for animals across all currently listed sale catalogues. This enables potential bull buyers to analyse sale animals currently available in their state or region. Simply choose the ‘Animal is for sale’ criteria, together with any other criteria, to see this in action.

**Tips:**  
- When searching for an individual animal, you only need to specify sufficient criteria for the animal to be located in the database. If you know the animal identity, then just specify this, otherwise just specify all or part of its Name. By specifying too many items eg: Identity, Sex, Calving-Year etc, you may have a slight error in one of your criteria, resulting in not selecting anything.

- Don’t put in too many criteria initially, you may not find any animals that fit. Start with a few key EBVs or criteria, if you find too many animals, go back and fine-tune your selection by adding other criteria.

Brian Sundstrom

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**Mating predictor - a new option**

Australian Angus has pioneered a new service to save some of the pencil work in deciding which cows to mate to which bull. Through MATING PREDICTOR you can nominate a group of cows, and test mate them to various sires. Predicted EBVs for the progeny are listed (see above). This is just the Sire and Dam averaged, but can save a lot of time.

Note this example has only one Sire - Trangie 126, joined to three cows, but groups up to 100 cows can be selected.

Heather Frazier has just joined the ABRI team as our Graphic Design Consultant. She completed a degree in Graphic Design at the University of Newcastle in 1999, and has worked in a Sydney studio as a Designer and Production Manager for a rural newspaper.

Layout and design of this year’s BREEPLAN News is only one of many print media works that she is working on. They can range from corporate identity to brochures, posters and booklets. Multimedia design work is also part of her portfolio, with the maintenance of existing web pages, and the creation of new web pages.

You can contact Heather about any design job that you require on 02 6773 3555 or email her at heather.frazier@abri.une.edu.au
I am often asked about the breed composition of the Australian beef herd, the contribution that the registered sector makes to beef improvement and the market penetration of BREEDPLAN. Let me try to fill in the landscape a little.

In the commercial beef industry most mating continues to be by natural service. This also means that the strongest contribution to genetic improvement comes from the bulls used. Around 100,000 new bulls are introduced into the national bull battery each year. Of these, our surveys show that around 80,000 come from herds run by registered breeders. The registered sector therefore has a very strong influence on the genetic progress of the commercial herd. In many breeds, artificial breeding is widely used in the registered sector and breeders are able to select sires on performance from an international catalogue of semen. For example, 34.3% of registered Angus calves are by AI, 27% of Limousin calves and 11% of Brahman calves.

British breeds hold numerical dominance of the registered sector with 62.5% of total registrations in year 2000, followed by Tropical breeds with 24.8%, European breeds 11.7% and 1% in other breeds (eg. Wagyu).

Over the last five years British and Tropical breeds have marginally increased their market share at the expense of European breeds as shown below.

<table>
<thead>
<tr>
<th>Breed Category</th>
<th>% of national registrations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1995</td>
</tr>
<tr>
<td>British breeds</td>
<td>60.1</td>
</tr>
<tr>
<td>Tropical breeds</td>
<td>21.4</td>
</tr>
<tr>
<td>European breeds</td>
<td>18.1</td>
</tr>
<tr>
<td>Other</td>
<td>0.4</td>
</tr>
</tbody>
</table>

It is important to note that the percentage composition of the registered sector is quite different to the breed composition of the whole of the beef industry (Figure 1).

British breeds account for 41.1% of the national beef herd and so with 62.5% of the registered sector as British breeds, the commercial herds are very well serviced with pedigreed seedstock. Of course, it is logistically simpler to run a pedigree herd in the more intensive Southern areas which are well populated by British breeds than in the extensive Northern and pastoral areas.

Tropical breeds account for 24.8% of registration numbers but 31.9% of total cattle. There are some large bull breeding operations in the North which do not register their calves or register only a portion of them. The population of high blood percentage registered herds, are recorded on BREEDPLAN per year. This leads to around 45,000 bull calves receiving EBVs ie. about 45% of bulls entering the national bull battery each year. This impact is magnified by some of the larger bull breeders which supply BREEDPLAN bulls from their elite herds to multiplier bull-breeding units.

The participation in BREEDPLAN recording in registered British breed herds is

<table>
<thead>
<tr>
<th>Herd Size</th>
<th>No. of registered cows</th>
<th>% cows in BREEDPLAN</th>
<th>Cumulative%</th>
</tr>
</thead>
<tbody>
<tr>
<td>250+</td>
<td>47342</td>
<td>95.0</td>
<td>95.0</td>
</tr>
<tr>
<td>150-250</td>
<td>28549</td>
<td>85.4</td>
<td>91.4</td>
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<tr>
<td>100-150</td>
<td>20987</td>
<td>69.8</td>
<td>86.7</td>
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<td>28870</td>
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<td>25-50</td>
<td>18426</td>
<td>46.1</td>
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<td>&lt;25</td>
<td>17309</td>
<td>27.8</td>
<td>71.4</td>
</tr>
<tr>
<td>Total</td>
<td>161483</td>
<td>71.4</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Participation of five main British breeds in BREEDPLAN

European breed cattle in the Australian beef industry is low - about 2.4%, but European breeds make up 11.7% of registered cattle. European breed bulls tend to be targeted at crossbreeding and make a significant contribution to the 24.8% of crossbred cattle in the national herd.

Around 120,000 calves, mainly from British breeds, are enrolled in BREEDPLAN. The herds of 250+ cows have the highest participation rate of 95%. Around 60% of the inventory of registered cows in British breeds are run in herds of 100+ cows. It is these larger herds that tend to set the pace with genetic improvement, while smaller stud herds play an important role in multiplying genetics for use in the commercial sector.
Gene flow in Australia

ABRI celebrates its 30th Anniversary

On June 30, 2000 the ABRI celebrated its 30th anniversary. To mark the occasion, ABRI's Chairman, Edward Wright AM, hosted a function in Armidale which was attended by representatives of the beef industry from many parts of Australia.

ABRI's Foundation Director, Mr Arthur Rickards, traced the development of the Institute from a three-person team in 1970 to today's 180-person team which provides technology services into 20 countries. BREEDPLAN continues to be a flagship product for ABRI with data now being combined across many countries for some key breeds.

Arthur Rickards welcomed recent advances in quantitative and molecular genetics, the establishment of across-country databases of beef cattle performance and enhancement of international communication capabilities through the world wide web. By integrating these technical advances, ABRI will soon be able to provide its clients in extensive livestock industries with opportunities for genetic improvement that were previously the exclusive province of the intensive livestock industries.

This bottleneck is expected to be overcome as the new technology for crossbred EBVs gains wider adoption. The level of BREEDPLAN recording in Tropical breeds has doubled in the past five years assisted significantly by the activities of Richard Apps in the Tropical Cattle Technology Services project. The new target is to increase this level of BREEDPLAN recording in Tropical breeds from 38% to 70% over the next five years.

In summary, the registered sector and the BREEDPLAN service are both playing key roles in genetic improvement and profitability of our beef herd. Closer integration of the registered and commercial sector is required to optimise the national beef industry benefit for genetic improvement - particularly if the MLA's goal of doubling the rate of genetic improvement in five years is to be achieved.

Arthur Rickards

Figure 2 shows the genetic progress in profitability of Angus cattle for high quality export markets. This has been calculated by applying BreedObject to the genetic trends of Angus for growth, fertility and carcase. Profit has increased by $36 per cow over the base for the Angus population.

With both the European and Tropical breeds the percentages of registered cows enrolled in BREEDPLAN lie at around 38%. Because European breed bulls tend to be used in crossbreeding, their EBVs do not meet the same high demand as with British breeds which are used more in straight breeding.

This is expected to be overcome as the new technology for crossbred EBVs gains wider adoption. The level of BREEDPLAN recording in Tropical breeds has doubled in the past five years assisted significantly by the activities of Richard Apps in the Tropical Cattle Technology Services project. The new target is to increase this level of BREEDPLAN recording in Tropical breeds from 38% to 70% over the next five years.

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Arthur Rickards

Figure 2: Genetic Progress in Profitability in Angus - for high quality export markets. Source: AGBU

Arthur Rickards

Ed Wright, Arthur Rickards and Ian Sinclair at ABRI's 30th Anniversary celebration.
Saltbush has been looking after agricultural producers' software needs, in Australia and several other countries for over 20 years now. Effective record keeping continues to be an extremely important tool in improving the genetic and commercial aspects of farming operations. More and more people are jumping on board ship so they won't be left behind.

At some recent major ‘expos’ such as the Meat Profit Day in Adelaide and the Feeder Steer School in Armidale, the messages have been: “be prepared for change, grasp it with both hands, be prepared for some hard lessons but it’s time we had sustainable profit on farm, meeting the demands of our consumers.” And yes, we are changing and yes, we are achieving those goals.

It is difficult to determine what direction to shift your herd, to achieve your future targets unless you have a good understanding of the base from where you are starting. So I encourage you to start collecting the relevant production data and market feedback information. Record it in a software package, where it is in an organised and logical format. Use the information at your fingertips to make the informed production decisions that are going to put your operation financially and genetically where you want it to be.

Herd Magic -
Recording package for seedstock breeders and intensive commercial operations. Herd Magic continues to be a popular and sought after program. It is extremely powerful, with 30 standard reports to help analyse herd performance.

The two big questions on everyone’s lips at the moment seem to be,
- Is Herd Magic compatible with electronic scales?
- And can you cater for the National Livestock Identification Scheme (NLIS)?

The answer to both is YES. Currently Herd Magic is compatible with the electronic data collectors for scales, so rather than inputting the data, upload the information directly into Herd Magic. Herd Magic is compatible with the data collectors of Ruddweigh Scales, Alflex/Iconix, Anilogue and Sunbeam/Tru Test scales. Saltbush is committed to this technology and will make changes to accommodate any electronic recording device. Please contact us if your system is not included.

NLIS, a voluntary National system, requires each animal to be permanently identified with a machine-readable NLIS-endorsed device. This may be an ear tag or a rumen bolus/ear tag combination. It provides the framework for a paddock to plate producer trace back system, to help improve on farm management practices. If you are looking to supply the EU market, the utilisation of the NLIS with our fully compatible Herd Magic, will assist you to meet the special protocols stipulated.

Stock Recorder -
Recording Commercial Herds

Stock Recorder is indeed hitting the market place now. As with Herd Magic, Stock Recorder is compatible with electronic data collectors for scales and it also has an area for NLIS recording.

Stock Recorder is a computerised record keeping system for commercial producers. It is a reasonably priced, straight forward livestock program that
records the day to day management aspects on-farm. Stock Recorder allows you to record weights, carcase feedback, health treatments, sales and purchases, stock movements and progeny. Stock Recorder is a tool to keep your records organised and easy to access. These programs are designed to make your life easier - take advantage of it.

If you haven’t been collecting production data and market feedback information then now is a good time to start. Significant opportunities exist for those who are willing to take the time to record management information. Your own understanding of your own herd becomes so much more clear, future goals and objectives expose themselves and you can make the climb of meeting your targets.

For example most commercial producers consider their breeders as the thermometer of their herd. Fertility is paramount, every female needs a calf on the ground each year - that's profit and efficiency. Calves need enough milk to give them a decent start to their lives. If they grow quickly they can be weaned quickly allowing the female to recover and be ready for her next calving and subsequent joining. If the heifers mature quickly it may mean they can be joined at an earlier age giving you perhaps another years productive worth in her lifetime.

Weights are also important. For example, Allan Every a backgrounder from “Woodlands” at Ben Lomond NSW aims at a growth rate of 0.5-0.6kg/day. These moderate growth rates produce the most desirable feeder steer in terms of performance in a feedlot. Do you know what your cattle are achieving?

If you know where your weaknesses lie, in terms of meeting your markets you are able to determine which genetics you need to change and improve your situation. You may find that taking the time to record this vital information may well place you in a much more positive position than if you didn’t. The choice is yours.

**New Saltbush Web Page**

If you would like more information regarding our software packages please take a moment to browse through our web page. It has been re designed and updated in January of this year. You are able to check dates of training sessions, what this month's special might be and also e-mail a message through to the office for a trial program request. The address is http://saltbush.une.edu.au

Otherwise contact our Saltbush office via phone, fax or e-mail.
Ph:  02 6773 3310  
Fax:  02 67739950  
E-mail:  Support@saltbush.une.edu.au

**Training and FarmBi$**

This year we have a vigorous training program being conducted nationwide. The government is encouraging producers to attend training by helping training providers and farmers financially. In most cases you can attend a training course for approximately 25% of the total cost. Please take advantage of it while you can. Saltbush will be applying for FarmBi$ funding on your behalf in all states for all training sessions conducted.

As you can see our training schedule is quite hectic. We have already conducted training in Launceston, Adelaide, Wagga and New Zealand this year and have received a very clear message that clients have found the day extremely useful. We are here to help you, so please call to check actual dates and make sure you receive an invitation to a training session in your area.


**Month** | **Locations of training** | **Programs**
---|---|---
March | Goodwind/Tully | HM/SR
April | Sydney/Geelong | HM/SR/CM
May | Rockhampton / Longreach/ Charleville/Townsville | HM
June | Dubbo/Casino/Mt Isa/ Score | HM/SR
July | Roma / Mt Gambier | HM/SR
Aug | WA | HM
Sept | Toowoomba/Orange | HM/CM
Oct | Gippland | HM
Nov | Armidale/Albury | HM/CM/SR

We will also be visiting Australian Field days, Meat Profit Days and rural shows, throughout the year with Internet in the Bush. Please do not hesitate to come and see the programs in action for yourself. Make a change, you might be pleasantly surprised with the results.

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Tina Wright

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**breedplan contact list...**

<table>
<thead>
<tr>
<th>State</th>
<th>Name (Town)</th>
<th>Phone</th>
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<tbody>
<tr>
<td><strong>Queensland</strong></td>
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<td>Richard Apps (Rockhampton)</td>
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<tr>
<td><strong>New South Wales</strong></td>
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<tr>
<td></td>
<td>Brian Cumming (Albury)</td>
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</tr>
<tr>
<td><strong>South Australia</strong></td>
<td>Michael Milne (Naracoorte)</td>
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<td>John Lucey (Manjimup)</td>
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<tr>
<td><strong>Northern Territory</strong></td>
<td>Andrew Phillips (Alice Springs)</td>
<td>08 8951 8140</td>
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Enquires of a general nature should, if possible, be handled by your nearest beef cattle officer. For more detailed information, each Australian State has a coordinator listed above.
Braford BREEDPLAN - “Chadwick Downs”

Last year, the Braford Society conducted its first trial GROUP BREEDPLAN run. One of the main herds involved, was "Chadwick Downs", near Coonabarabran in central NSW. The Lill family run 400 registered Brafords, together with a commercial herd. As well as their long standing support of BREEDPLAN, the operation is of interest due to their AI collection and export business. Stephen, Elaine and son Martin are all actively involved. The stud herd produces some 100 bulls a year for sale in NSW and QLD. AI and ET are used extensively in the stud. A fully equipped and licensed AI centre, has allowed the Lills to do their own work and also develop an export business.

This mainly concentrates on "Chadwick Downs" stock, with Martin doing the collection and processing. Stephen handles much of the export sales. Recent successful selling trips, have included Paraguay and Argentina. "As long as we keep costs down, there is great potential", Stephen told me. “Most of our Sth American clients are city-based owners or their veterinarian managers, and they place a lot of importance on figures. Having our within herd BREEDPLAN EBVs was a help, but a good GROUP BREEDPLAN for our Breed is going to be a much bigger benefit.”

Braford BREEDPLAN - “Chadwick Downs”

Welcome Christian Duff

Christian Duff has recently joined the BREEDPLAN team at ABRI. He hails from Inverell, where his family run a mixed cattle and cropping property.

Christian is a graduate of the University of Queensland - Gatton, majoring in Animal Production. During this time, he continued an interest in steer showing and also worked for six months with a South Queensland meatworks.

His BREEDPLAN responsibilities are the Limousin, Gelbvieh, Droughtmaster, Wagyu and Blonde D’Aquitaine.

Shorthorn demonstration herd

The breeding program at the ‘Shorthorn Society Demonstration’ farm near Orange, is progressing well. The 400 cow herd is being used to, among other things, progeny test 11 sires per year.

First calving is this Autumn. Current plans are to grow the steers to around 400-450kg, then slaughter half for the grass finished domestic market. The other half would go to a feedlot for the heavy Japanese trade.

They will be scanned pre-sale, and then have full carcass evaluation, including MSA grading. Females will be retained and monitored for calving, reproduction and maternal performance. A decision will be made shortly on the next round of sires to evaluate. A recent in house seminar on the property discussed this and aspects of BREEDPLAN and the project.

From left, Bob Gahan, Neilson Job, David Johnston, Nicholas Job and Brad Crook discussing the role of BREEDPLAN in this research program.