

On farm

# Implementation National Beef Genetics Extension Plan

**Project number BFGEN.107**  
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## **EXECUTIVE SUMMARY**

In an industry scenario of declining extension resources in beef breeding and genetics, the MLA funded BFGEN017 project was a key initiative in 2004 to technically update industry members & stakeholders. Messages were shared with industry in a practical and profitability context to maximize the uptake by producers and to create an environment for future follow-up activities.

The BFGEN017 project was the initiation of extension activities in response to the National Beef Genetics Extension Foresight Plan (the Foresight Plan) presented to MLA in March 2003. This project partially funded the proposed three-year plan.

After carefully reviewing the progress of BFGEN017 in 2004, the feedback and lessons learned, the management committee of the National Beef Genetics Extension Team (NBGET) concluded that technology transfer strategies suggested in the Foresight Plan are still relevant and further investment in this area is warranted.

Further, extension officers who attended the extension liaison meetings (associated with the Genetics Horizons Workshops) confirmed that resources are declining at a time when requirements are increasing and that the opportunity for one-to-one extension is almost extinct.


Following the successful 'Proof of Profit' workshop in September 2003, the concept has now been clearly defined and introduced to the vocabulary of the beef industry. The concept has been addressed in presentations at the Beef Genetics Horizons Workshops, in MLA publications and in the CD-Rom entitled "MLA Beef Genetics Toolkit".

The CD Rom embraces the technology areas of BREEDPLAN, BreedObject, \$Indexes and GeneSTAR and features the views and experiences of leading producers, advisers and scientists via video and written media in a format readily usable by anyone with access to a PC. It has immediate and widespread applications including follow-up to workshops such as the Beef Genetics Horizons or Edge, Effective Breeding Workshops or can be used in part, as presentation material in Focus group meetings proposed in the subsequent extension project. It may also be the entry point to new genetic improvement strategies for some producers.

Evaluation of the Beef Genetic Horizons Workshops by attendees, rated the information presented as, of interest and value to their enterprises (all three events scoring approximately 8, on a 10 point scale). A significant majority wants to attend another workshop and the preferred timing for such meetings is bi-annually.

Edge, Effective Breeding – Beef, has been reviewed and recommendations for revision of this important initiative for commercial producers' understanding and potential adoption of advanced tools have been delivered to MLA.

National coordination of beef genetics & breeding extension has been successfully demonstrated and initiated at an important point in the evolution of this technology area.



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## **1. Introduction**

The BFGEN017 project has been an important first step in ramping up extension on Beef Genetics nationally under the mantle of MLA's goals 'from discovery to adoption'. This project addressed the output of the National Beef Genetics Foresight Plan, the report resulting from the review of beef genetics extension conducted in 2002, by the National Beef Genetics Extension Team (NBGET).

In developing the plan, NBGET considered that there was a cultural change happening within the beef industry at a time when the genetics message was becoming more complex. The cultural change is being brought about by the decline in government extension agencies and some private agencies such as breed society technical services. To overcome this change NBGET considered information about producers' preferred sources of information, from reports including those commissioned by MLA (AMRC) in the early 90s (Wilson and ABT) and other published reports from Australia and overseas. It was recommended that a diffusion model using opinion leaders within influencer groups was appropriate for the genetics message in the beef industry. NBGET also suggested that there was a network of people within the industry that would be suitable to seed this diffusion process. However Farquharson in 2001 reported to MLA that investment in genetics had been very successful and it was implied that the extension that accompanied the investment had been effective in promoting the use of the genetic technologies. These considerations led to conclusions that it was necessary and timely to modify the model used to extend genetics to the beef industry. A complete change in the extension model was not recommended.

The extension model, new to the beef industry, described in the Foresight Plan, is designed to accelerate diffusion of advanced breeding technologies across opinion leader groups not formerly included in the genetics extension process. It uses a network of influencer groups to provide technical support on genetic improvement to the beef supply chain and includes an element of 'pull-through' from sectors later in the beef supply chain who have been convinced of the value of improved genetics.

It should be noted that the Action Plan submitted to MLA in March 2003 along with the Foresight Plan, described a series of coordinated activities as a direct result of the Foresight Plan but the current BFGEN017 project did not include all proposed elements.

Some of the components that were not funded, especially the focus group meetings for different target audiences, has to some extent, disrupted the overall effectiveness of the planned output from the Foresight plan. However the successes of the current BFGEN017 project have established a platform for the essential components of the Action Plan, when funded, to still have a substantial effect on the future extension of genetics in the beef industry.

This progress report will highlight the successes of the project to date, relate progress to the overall Foresight Plan and make suggestions for future investment.

## **2. Summary of Achievements against Objectives**

The objectives for this project as described in the contract schedule are listed below.

### **Objectives**

*The Research Organisation will achieve the following objective(s) to MLA's reasonable satisfaction:*

By 31 January 2005:

#### 1. Coordination activities:

- a) Develop and maintain a register of key genetic contacts and R, D & E programs nationally.
- b) Participate in key budgeted extension activities, monitor media output, evaluate extension activities related to the Project and record related industry trends.
- c) Obtain and critically assess feedback on key activities.
- d) Coordinate media brokering stories and prepare general media supply strategies.
- e) Respond to industry enquiries regarding the action plan.
- f) Organise bi-monthly project management meetings.

#### 2. National industry liaison

- a) Organise the first annual national beef genetics extension liaison and review meetings in conjunction with MLA.
- b) Review action plan aims, activities and trends and stimulate new and novel extension strategies.
- c) Prepare and deliver presentations MLA genetics advisory committee as required by MLA.

3. Prepare key extension resources and media releases for use in workshops and follow-up activities with key organisations and influence groups. The material must demonstrate conclusively that genetics can be used to increase profit for all sectors of the beef supply chain.

4. Coordinate the first beef genetics expo's that will provide a regional forum for all sectors of the beef supply chain and service providers to be updated on the national beef genetics plan and to receive technical and product updates on relevant developments and to interact with other sectors.

5. Review and revise the EDGENetwork® breeding programs workshop.

### **Achievements**

#### **Coordination activities**

Key genetic contacts have been added to a moderated email list on an Internet facility that is hosted by the Animal Genetics and Breeding Unit (AGBU). People on this list also have access to a password protected download site, hosted by the Agricultural Business Research Institute (ABRI) that contains reports and extension material including PowerPoint presentations etc., for use in preparing extension material. This list includes members of the National Beef Genetics Extension Team convened on behalf of MLA in 2001, Extension Officers from State Departments, Private Industry Consultants, Breed Society Officers and representatives of other industry bodies interested in extension of beef genetics information such as Livestock agencies and semen sellers.

No further action on the key contacts register can occur until funding for continued coordination is guaranteed.

Other components of the first objective were achieved in conjunction with the major programmed activities. A sample of media stories that have resulted from the Expos is included as an appendix.

Bi-monthly meetings were held between the management committee of the project and a system of 'Actions in Progress' recording was implemented to monitor progress of different projects. A copy of some of the Actions-in-progress reports are included as appendices.

### **National Industry Liaison**

Two meetings for extension personnel were held in Armidale and Rockhampton. The planned Hamilton meeting did not occur due to unforeseen circumstances however a list of southern extension personnel has been added to the email contacts.

A summary of outcomes from the two extension officer meetings is:

Confirmation that the extension resource is declining

Agreement that a 'succession plan' for genetics extension is necessary

General agreement that a contact list for genetics extension personnel is a good idea but reservations about the success of such an activity unless it is coordinated

Support for the use of 'industry champions' to promote improved use of genetic technologies appears to be general

### **Prepare key extension resources and media releases for use in workshops and follow-up activities**

Three major initiatives addressed this objective.

A CD Rom entitled 'Beef Genetics Toolkit' was produced in conjunction with Range Media Pty. Ltd. of Toowoomba. This CD is being modified to meet the new corporate style requirements of MLA. Cooperation with the Beef CRC also produced a CD Rom on the messages from the CRC to date. This second CD is designed to provide extension agents with the resources to develop stories on genetics. The messages from both CDs are complementary and will work well to improve the resources available on genetics.

Three fact sheets were produced and released in the MLA 'On-Farm' series; these were used as handouts at the Beef Genetic Horizons Workshops and are available for follow up activities.

Three 'Feedback' articles have been written. The first by Don Nicol, 'Buying a Bull' was published in the August 2004 edition. A further two articles by Wayne Upton will appear in March. They are entitled 'Selection of beef cattle on EBVs produce better progeny – proof in the field' and 'Leading Beef Producers hear the good news about genetics'.

All these initiatives heavily feature the Proof of Profit from genetics story and how to use genetics. Industry champions are used to reinforce the story in the CD Rom.

### **Coordinate the first beef genetics expo's**

Three expos were successfully conducted at Armidale, NSW., Hamilton, Vic., and Rockhampton, Qld. Feedback from attendees was positive, and comments about the relevance of the content confirm that it delivered the right material. Attendees were largely seedstock or commercial producers but there was a significant group of industry service personnel such as livestock agents and breed society representatives.

### **Review and revise the EDGENetwork® breeding programs workshop**

'Effective Breeding Programs' was reviewed by a team of experienced adult educators and technology transfer specialists. Many of the team were consultants who had delivered the course. Recommendations have been forwarded to MLA.

## **3. Proof of Profit Workshop**

The inaugural 'Proof of Profit' Workshop was held at Ebor in September 2003. This workshop was funded under project BFGEN 017A prior to the full funding being received for BFGEN 017. A full report of this workshop was delivered to MLA in November 2003. While not part of the BFGEN017 project this brief summary of the workshop is presented here to provide background for some of the other activities discussed.

This workshop brought together geneticists, extension professionals, consultants and producers to discuss one of the major findings of the NBGET review that led to development of the Foresight Plan, i.e. the 'Lack of Proof of Profit' evident in extension messages and materials related to beef genetics. Importantly this workshop involved personnel from meat lamb and pig industries. As a result of this workshop and as part of BFGEN 017 there have been a number of significant outputs and outcomes.

'Proof of Profit' is now clearly established as part of the genetics extension vocabulary and as a base for future genetics extension messages.

#### **Outputs:**

- "Proof of Profit" Keynote talks at 3 Beef Genetics Expos
  - 'Beating the cost price squeeze. Do EBVs help the bottom line? Here's the proof.' – presented by David Johnston.
  - 'Crossbreeding. The theory, the practice, the problems and the bottom line. A warts and all approach.' – presented by Bill Hoffman, Armidale and Hamilton and John Bertram, Rockhampton.
- "Proof of Profit" feature in MLA Beef Genetics Toolkit CD-Rom
- MLA 'On Farm' brochures produced

#### **Outcomes:**

"Proof of Profit" now clearly part of the Beef Genetics extension vocabulary and all future beef genetics R & D projects will be asked to give or be reviewed for possible "Proof of Profit" messages. This is a pivotal outcome.

"Proof of Profit" to be a key message rolled out via Focus group meetings in future.

### **4. Beef Genetics Extension Coordination**

Operating as the Management Committee for the national Beef Genetics Extension Team, Freer, Nicol and Upton have coordinated the activities of the BFGEN 017 project. Bi-monthly meetings have been held either face-to-face or phone hook-up. Informal meetings and phone hook-ups have been more common.

The main activities concentrated on organizing and participating in the key budgeted activities that included Beef Genetic Horizons Workshops in Armidale, Hamilton and Rockhampton, production of the Genetics Tool Kit, CD Rom and a review of the Edge, 'Effective Breeding Programs'.

Developing the register of key genetic contacts and R, D and E programs plus assessing the feedback from key activities has been initiated.

A number of media stories have been initiated, especially those centred on events such as the Beef Genetics Horizons Workshops. A sample of these is included as an appendix. Other printed information has been developed specifically for MLA Feedback magazine and breed society publications.

A formal media strategy has not been progressed as the brief 12-month term of the contract (given that the original project proposal was written for a 3 year contract) made it difficult to implement a long term strategy. However the following principles are suggested as the basis for a strategy should further project funding eventuate.

1. Stories need to be relevant in time and place, eg. stories about purchasing bulls are appropriate at the time when most bull sales occur in a region.
2. Events such as the Beef Genetics Horizons have media spin off with direct stories to the media but also as an introduction for the speakers as 'experts' in the genetics field. Journalists will often seek comment from speakers of major events, some time after the event (see the sample of articles attached as appendix).
3. Closer contact needs to be maintained with the major rural newspapers and contact needs to be initiated with radio and TV.
4. Focus group activity should be used to determine appropriate points of contact for media outlets. This focus group would be weighted heavily towards feedback from the participants as to appropriate forms of contact. This activity is considered essential before a formal plan is constructed.
5. Media requires specialist and consistent professional contact. MLA needs to contract a professional media coordinator to ensure that all information on beef genetics is given as wide an exposure as possible. It is obvious that 'beef genetics' would not be a full time position.



## **5. National industry liaison**

Three meetings of people involved in the extension of genetics were planned in conjunction with the Beef Genetics Horizons meetings at Armidale, Hamilton and Rockhampton. Only two of the meetings were actually held. The Hamilton meeting was abandoned due to lack of numbers attending, resulting from unforeseen circumstances. Attempts are under way to include interested extension personnel from Victoria in the email contact list.

The objectives of coordinating beef genetics extension are:

Develop and maintain a register of key genetic contacts and R, D & E programs nationally.

Monitor media output, evaluate extension activities and record related industry trends.

Obtain and critically assess feedback on key activities.

Compile a list of 'technology champions' at the seedstock & commercial level

### **Armidale**

The Armidale Beef Genetics Extension Coordination meeting was held on the evening of Tuesday 15<sup>th</sup> June 2004, before the Armidale Beef Genetics Horizons Expo at the AGBU board room.

Present: Peter Parnell, Bob Gaden, Brian Sundstrom, Bill Hoffman (NSWDPI); John Bertram, Rebecca Farrell (QDPI); Peter Dundon, Sharron Pettiford (Beef CRC); Ian Watson (MLA Board member); Jack Allen, Michael Connors, Michael Beattie (ABRI); Greg Popplewell, Paul Tudor (Elders Breeding Services); Bill Cornell (ABS Global); Alex McDonald (Limousin Society); Don Nicol, Wayne Upton (NBGET Management Committee).

Don Nicol opened the meeting describing the need for coordination across Australia highlighting the increasing complexity of the message at a time of declining extension resources with specialist knowledge. There was general agreement that there was a need for coordination to make the extension more effective.

Brian Sundstrom then demonstrated a CD Rom highlighting CRC 1 results. This CD is very specifically targeted at extension personnel, designed to allow them to develop their own presentations. Most expressed interest in receiving a copy when available.

Extended discussions were then held regarding the need for a register of key contacts and the best method for doing such a process. An email group was the only suggested method of keeping relevant people informed and in contact with events and resources, however there was some reservations about the value of such a group based on past experience. It was resolved that it is worthwhile to attempt such a contact group but it will only work if someone takes on the role of coordinating (the example was used of Rod Thompson – Aussie-Beef-Net) and this person should also seed the email list with relevant material on a regular basis.

Questions were asked as to whether anyone in MLA monitored media activity for a range of subjects. There was no knowledge of any other body attempting to do such a job. While most considered it of interest there was not strong agreement as to the value of monitoring media stories and activities.

There was little discussion about evaluating extension activities other than informing the group that Bob Freer is organising a review of Edge – Effective Breeding Workshops for Beef in the second half of 2004.

The subject of industry champions was raised and there was agreement that the use of such is a good extension technique for genetics extension. Don Nicol then outlined the development of the Beef Genetics Tool Kit CD Rom that features a number of industry champions promoting the use of genetic tools. This was considered to be a valuable activity and interest in receiving a copy was general.

### **Rockhampton**

The meeting in Rockhampton associated with the Beef Genetics Horizons Expo was held as a breakfast meeting at 7.00am on Friday 27<sup>th</sup> August 2004.

Present: John Bertram, Rebecca Farrell, Vince Edmonson, Roger Sneath, Bernie English, Desiree Jackson, Kay Taylor, Alistair Brown, Alan Laing (QDPI); Mick Tierney, Maurie Josey (Private Consultants); Bob Dent, Ben Hill ( Aust. Angus Soc.); Christian Duff (TBTS); Jack Allen (ABRI); Bob Freer, Don Nicol, Wayne Upton (NBGET Management Committee).

This meeting followed a different format to the Armidale meeting but discussed similar issues. There was a large representation from QDPI and some discussions centred on their changing role and specifically their inability to give one-to-one advice and therefore affect follow-up of the initial genetics awareness activities. Questions were asked and suggestions made that the one-to-one and follow-up roles need to be performed by the breed societies and dedicated field officers such as Christian Duff in his role as Tropical Beef Technology Services that is partly MLA funded with contributions from Tropical breed societies.

The issue of succession planning for an ageing group of key experienced extension personnel in an environment where the message is more complex was seen to be of concern. There was concern of how do replacements gain experience. The current team has developed with the technology and experience has been gained 'on-the-job'.

There was a sentiment expressed that farmers tend to be unwilling to pay for technical information and that without FarmBis many of the initiatives such as the Breeding Edge will be too expensive to attract the relevant industry operators.

There was some questions about the reasons for declining registrations in breed societies. Suggestions were made that it could simply be largely seasonal. It was thought that BREEDPLAN promotion would benefit from reinforcing the support of breed societies with access to specialist technical advice (TBTS quoted as good example) and encouraging breed societies to be proactive.

### **Summary of Outcomes**

- Confirmation that the extension resource is declining
- Agreement that a 'succession plan' for genetics extension is necessary
- General agreement that a contact list for genetics extension personnel is a good idea but reservations about the success of such an activity unless it is coordinated
- Support for the use of 'industry champions' to promote improved use of genetic technologies appears to be general

## **6. Preparation of key extension resources and media releases**

### **6.1 CD Rom Production**

To be released when MLA agrees to the latest modifications, the MLA Beef Genetics Toolkit is suitable for use by breeders needing to know more about what's available; stud stock agents and seedstock breeders needing to convince their clients that the system works.

In a situation where producers are looking for follow-up on genetics technologies, the CD-Rom will allow a 'personal' insight to various experts' opinions and thoughts that can be viewed by a producer on their office computer, in their own time. In addition where Internet connections allow, producers can review hyperlinks to relevant sites or web sources.

The CD-Rom will also fill the need of a cheap market entry point for those not willing to commit to attending a dedicated course on genetic improvement such as Beef Genetic Horizons workshop. It can also act as a follow-up and refresher for MLA Edge genetic course participants.

It is strongly recommended that a release strategy for this CD Rom be based on supply to as many interested parties as possible. Therefore the price needs to be kept to a minimum. The best result would be if the product is made available free of charge to all who express an interest. The CD should be offered as part of the MLA More Beef from Pastures package and freely distributed to agriculture teachers in high schools, colleges and universities.

### **6.2 Tips and Tools**

Originally planned and written as 'Tips and Tools' the three brochures were produced by MLA for their 'On Farm' series. These three Factsheets provide an easy market entry point for producers who are to be convinced of the value of genetic improvement and need information on the tools available. While some of this material has been used before in information sheets such as BREEDPLAN notes, this is the first time they have been produced in an MLA format with wider exposure.

Titles of the three brochures produced in this project are:

- Buying bulls with BREEDPLAN
- EBVs – proof of profit
- \$Indexes for beef cattle.

These information sheets were distributed at the three Genetic Horizons workshops but have much greater utility than and a distribution strategy needs to be decided. A first step would be to have them listed on the MLA website.

## **7. Beef Genetics Horizons (Expos)**

Conceived as the major technical update for the industry, the Beef Genetics Horizons Workshops drew together participants from many of the important sectors of the beef supply chain. The technical content of the presentations was appropriate for the audience and the standard of presentations was high as confirmed by the summary of responses shown in table 1

Three workshops were held, with attendance in Armidale, NSW, 65, Hamilton, Vic., 75 and in Rockhampton Qld., 93. As shown in the following table the general acceptance of the information presented was high.

Table 1: Summary of responses to evaluations by participants of the three Beef Genetics Horizons workshops

Question	Armidale	Hamilton	Rockhampton
Was this workshop valuable to you? (Average score out of 10)	8.3	8.9	7.9
Rate presentation according to their value to your enterprise (Average score for all presentations out of 5)	3.7	4.0	3.8
Would you attend another workshop (% responding yes)	81%	82%	88%
Preference for frequency (% annual/biannual)	47%/39%	54%/36%	26%/54%

Attendance was lower than the 100 aimed for, reflecting the lack of importance placed by many producers on the subject areas i.e. they have yet to be convinced of the importance of genetic improvement to their enterprise. It is difficult to discern from those that made the commitment to attend why attendance was low but feedback comments (without prompting) from 14% of responders about the high cost of the two day workshop (\$330), demonstrate that breeders are not generally willing to pay for information about genetic improvement indicating a lack of market penetration or general knowledge of the \$ value of genetic improvement.

### Organisation:

The three workshops were organised by ANF Agritours; a professional event management company. They organized all logistics including the venue, catering, plus travel and accommodation for speakers. They also sought sponsorship and managed the accounts. Under the guidance of ANF the workshops achieved the goal of full cost recovery for their part in the overall project.

A program committee consisting of members of the National Beef Genetics Extension Team plus conscripts with local knowledge was in charge of the technical content. A different committee was convened for each venue to ensure event some local content and relevance.

### Outputs:

Heightened knowledge in a MLA-sponsored, adult-learning environment using free-choice concurrent technical updating workshops of beef genetics tools and strategies delivered at

three major regional centres by 20+ leading researchers, technology transfer specialists, service providers, consultants and producers.

### **Outcomes:**

The Expos were important in providing industry with timely technical updating on key genetic tools. Producers were also made aware of the \$ value of beef genetics for their operations.

These were three highly successful workshops that highlighted the most up-to-date information about the current genetic tools. Follow-up was requested and it is suggested that this take the form of assisted adoption rather than more 'awareness' activities next year. Attendees will be surveyed for apparent change to practices and should be invited to attend follow-up activities such as the re-vamped Edge breeding workshops or BreedLeader.

### **Review and recommendations for future activities**

Strengths of the Beef Genetic Horizons Workshops were undoubtedly the format that allowed the close interaction of many important players within the beef supply chain with key beef genetics researchers and advisers. At each of the workshops over twenty experts in their various fields were gathered in the one venue and producers and other industry players had direct access to these people for two days.

Both formal and informal contact between the experts and participants was available in the format of the workshops. The 'breakout' or small group sessions were in general well received as allowing closer contact with presenters but some criticized the need to make choices and the inability to attend all sessions.

As the workshops were non-breed specific and covered a wide range of technologies from different technology suppliers, the opportunity for interaction among participants was reasonably unique to this event.

Secondary benefits were delivered by these events by raising the profile of the subject and the deliverers and the associated media given. The media were generally very supportive and have used material from these events extensively.

The major weakness of the event was that it failed to attract as large an audience as the topic deserves when the benefits are weighed up. Another weakness was that they were still only awareness activities in that the participants were not required to 'act' on any of the information presented and did not leave with a plan for further action.

Reviewing the successes and weaknesses of the workshops has led to the conclusions that

- Regular events such as these are essential as a conduit for new information as it develops
- The secondary benefits of these events should not be underestimated (e.g. media stories)
- Follow-up activities should be built on to the events to further assist adoption

## **8. Edge Review**

The EDGE program *Effective Breeding – Beef* was identified by the MLA National Beef Genetics Extension Team (NBGET) as the program of choice to deliver beef genetics technology to commercial breeders throughout Australia.

The NBGET recommended a review of the format, content and delivery of the program to better fit the MLA objective of increasing the rate of genetic gain across the Australian beef herd, and to address areas of dissatisfaction raised by experienced extension officers who had delivered the program.

After initial research, a review team was brought together in Armidale on 9<sup>th</sup> and 10<sup>th</sup> September 2004 to carry out finalise the review and its findings and recommendations were presented to MLA in October 2005. The report as submitted to MLA is attached as an Appendix.

### **Output:**

Suggested plan for new format of Edge 'Effective Breeding – Beef'.

### **Outcome:**

If the revision is completed according to the recommendations, the revised product with a new marketing campaign behind it will provide a point of follow-up for those who have been made aware (e.g. at Horizons meetings or via CD-Rom) and who need to progress to the implementation phase.

## **9. Future Delivery of Beef Genetics Extension**

The original proposal developed in the National Beef Genetics Foresight Plan (the Foresight Plan) was a three-year calendar of coordinated activities however the MLA decided to fund a subset of activities to establish the need for such a project. The successes of the BFGEN017 project demonstrate the need for such initiatives and it is considered that the Foresight plan still addresses these needs. A new project proposal has been submitted, based on a review of progress of BFGEN017 plus recognition of the Foresight Plan.

The Foresight Plan was developed by industry representatives to focus on the requirements of the extension of beef genetics within the industry. The plan embraced the complex nature of the industry and suggested an innovative approach to extension using many influencer groups within the industry. A coordinated set of activities plans to harvest the wealth of industry resources already at work within the industry, using these to implement a new model for beef genetics extension. It accepts that the traditional model of one-to-one assistance supplied free by government funded agencies and some breed societies is unlikely to continue.

The so-called new extension model is described in the Foresight Plan as an acceleration of the diffusion of advanced breeding technologies across opinion leader groups not normally included in the genetics extension process. It uses a network of influencer groups to provide technical support on genetic improvement to the beef supply chain. To bring this network on line will require a strategic approach of training and technical support. Four elements are considered essential to the success of this new extension model;

1. Focus group meetings designed specifically for the target audience

2. Opportunities for training of key personnel
3. Technical support of people within the various target groups
4. Industry liaison and coordination.

### **Focus group meetings**

Focus group meetings will take on a number of different formats to cater for the different target audiences. However each focus group will have three essential components:

- a) A group of people with common interest that have responded to an invitation to attend the event that is publicized as pertaining to genetic improvement in the beef industry
- b) A technical updating specifically tailored for the audience being targeted
  - i. There will be three basic technical modules that will underpin these focus group meetings; A - basic awareness package<sup>1</sup>, B - Edge, Effective Breeding Workshop Lite<sup>2</sup>, C - BreedLeader Lite.
- c) A plan resulting from the group which identifies
  - i. support they require to provide technically sound information on genetic improvement to their sphere of influence
  - ii. the preferred method of accessing that support
  - iii. plans to support follow-up where necessary.

<sup>1</sup> Basic awareness package will be based on Proof of Profit plus 'How to find good genetics' (searching the web etc.)

<sup>2</sup> Refers to a version of the Edge or BreedLeader workshops tailored and refined to meet specific needs of the nominated group

The focus group concept is pivotal to establishing the new model of genetics extension. These focus group meetings will provide the initial technical updating but also provide a conduit for continuous support of the providers of genetic information.

High priority target audiences will include ultrasound scanning contractors, semen sellers (AI industry), breed society technical support personnel, seedstock consultants, agents – studstock, agents – commercial, media and feedlot/processors. It is considered that these are essential to initiate this new model of genetics extension. Other target audiences will be brought on line in later years to further expand the network. The following table gives an outline of the target audience the expected number to attend and the technical module that will support the focus group.

**Table 1: Plan for focus group meetings to be conducted in the next two years.**

<b>Target Audience</b>	<b>Number attendees</b>	<b>Technical module</b>
Ultrasound scanning contractors	10	BreedLeader Lite
AI/Semen sellers	20	BreedLeader Lite
Agents – studstock	10	BreedLeader Lite
Breed Society Technical support personnel	10	BreedLeader Lite
Agents – commercial	10	Edge Lite
Media	10	Awareness package

Feedlotter/Processor	10	Awareness package
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**Training opportunities**

Focus group meetings will establish networks for the new extension model and identify key personnel within these networks. To support this new network various training opportunities will be essential.

A high priority will be a post graduate diploma in applied genetics and extension. The graduate diploma should be a high level applied genetics study course with elements of extension and adult education included. As well as a diploma in genetics the course participants will achieve a certificate 4 in workplace training.

This proposal is written with the expectation that the revised Edge 'Effective Breeding – Beef' and the BreedLeader course will be developed and available. Both of these are subjects of separate development proposals but are essential to coordinated activities of the Foresight Plan.

Modifications to both of these programs to meet the demands of various focus group requirements are also essential.

**Technical Support of Genetics Extension Personnel**

For an expanded network of genetics extension to be effective there must be technical support available. Specialist officers such as those proposed by ABRI will support knowledge on the BREEDPLAN genetic evaluation system helping to ensure that this critical component of the genetic improvement process is technically sound. There will also be requirements for other initiatives some of which will be addressed by making available training opportunities described above.

While it is accepted that there is a decline in the traditional extension services in most parts they still exist in some reduced form and may provide specialist advice if given the opportunity to perform at a higher technical level. The role of some of these personnel could be advanced to one of technical support rather than face-to-face of individual operators. Initiatives such as Edge workshops and BreedLeader will by necessity train presenters to a level that will accelerate them to technical support status but these operators should also be encouraged to take advantage of the training opportunities described above.

**Industry liaison and coordination**

For this new model to be efficient, coordination at the national level will be essential. The coordination and liaison will be necessary to ensure that the outcomes from the focus group meetings, are implemented. Coordination and liaison will also be necessary if true value of the work commenced in BFGEN017 is to be realized. As an example the follow-up activities to the Beef Genetics Horizons meetings will be important and Horizons meetings in 2006 need to be planned.

Continued development of technical support packages is also essential. Of high priority is the development of a crossbreeding CD Rom to complement the Genetics Tool Kit CD that has been produced for the straightbreeding sector.



## **Appendix A: Review of the EDGE program -Effective Breeding (Beef)**

The EDGE program *Effective Breeding – Beef* (EBB) was identified by the MLA Beef Genetics Extension Team (BGET) as the program of choice to deliver beef genetics technology to commercial breeders throughout Australia.

The BGET recommended a review of the format, content and delivery of the program to better fit the MLA objective of increasing the rate of genetic gain across the Australian beef herd, and to address areas of dissatisfaction from experienced extension officers who had delivered the program.

A review team (see Appendix) met in Armidale on 9<sup>th</sup> and 10<sup>th</sup> September 2004 to carry out this task and its findings and recommendations follow.

1 - The review found that the current EBB program had not achieved widespread acceptance\* from either producers or presenters for the following reasons...

- too much information presented in too short a time.
- target audience & course content not always a good fit, eg, stud breeders and crossbreeding
- proof of profit with regard to genetic improvement was lacking.
- presenters were inadequately trained and/or supported to deliver the program
- inconsistencies between state licensees created confusion and dissatisfaction for presenters
- lack of follow-up opportunities to assist participants in customising information to their particular enterprise

\* of the some 82,250 farm businesses that had enrolled in an EDGE program to date, only 311 (0.4%) had chosen the EBB program

2 – the review recommended that...

- delivery of the program be changed to a one day introductory session followed by 3 half-day sessions.
- a follow-up half-day session be held 12 months later to review participant progress
- sessions to be largely conducted on-farm, using participant properties as case studies
- the manual be re-written to reflect changes in course content described in this report
- selection of presenters be based on demonstrated competence in delivering genetic technology. Depending on their experience they should be required to attend either a 1 or 2 day training workshop prior to being approved to deliver the course

- presenters be provided with support tools (tool box) including Power Point presentations, CD-Rom reference material, presenter and technical support network information
- a technical coordinator be appointed to coordinate/fix technical issues

### **Proposed re-write of *Effective Breeding***

It is proposed that the program be written around the key commercial on-farm activities where genetic improvement is influenced or realised, namely...

- buying a bull.
- mating the bull to cows, and
- selling progeny to market specifications.

The program would be written as a three module course. Module 1 would be an introductory module, with module 2 aimed at developing effective breeding skills at the herd level. Module 3 would be a review module conducted 6 to 12 months after the completion of module 2.

Module 1 would be a pre-requisite for module two, and could be offered as a stand-alone module.

### **Module 1 – Buying Better Bulls (alt - Better Bull Buying to target markets)**

It is proposed that this module be based on a re-write/revision of the NSW DPI program of the same title. As the program is based on generic industry information and was developed with support from MLA, no problem in gaining approval from NSW DPI to use the model is anticipated.

The **generic/introductory** module would be delivered as a one day (or 2 half days) program. Section A would be "hands-on" assessment of bulls using a case study herd.

Module 1 content would include..

#### A – Soundness & reproduction

- why bulls break down,
- structural soundness evaluation
- serving capability
- breeding soundness, semen quality

#### B – Introductory breeding and genetics

- define key markets of interest and traits of importance
- genetic basis of herd improvement
- the importance of a breeding objective
- buying the right bull – matching traits to breeding objectives
- EBV Proof of Profit
- using Breedplan EBVs and generic Indexes to select bulls
- benefits of crossbreeding, basic crossbreeding programs

#### C – Applied breeding

- buying bulls at auction

- bull buyers check list
- bull management
- using yearling bulls
- role of AI in commercial herds, AI budgets

### **Module 2 – Developing a herd improvement program**

(alt. titles -Using Better Bulls Better ; Maximising the return on your investment in better bulls

This **herd specific** module would be delivered as 3 half day sessions, on-farm, using participant properties as case studies. Participants would have the option of module 2 (b) – purebreeding, or 2 (c) - crossbreeding

- 2 (a) developing a breeding plan for your herd
  - which market, back-up markets
  - which traits, trait relationships
  - setting the herd genetic benchmark
  - barriers to adoption eg, capital, labour/resources, scale of enterprise, skills
  - understanding EBVs and selection indexes.
- 2 (b) developing a herd specific (customised ) selection index
  - understanding selection indexes eg concept and function
  - how indexes work eg, profit drivers, relative values, EBV weighting
  - benefit of index selection versus multiple-trait EBV selection
  - developing an index using herd-specific parameters
  - using indexes to find the bull that best fits your breeding plan
  - case studies, bull selection exercises
  - using web based databases (need computer/internet access)
  - comparing generic and herd-specific indexes
- 2 (c) developing a customised crossbreeding program
  - breeds and traits to fit markets and environments
  - crossbreeding strategies
  - composites
  - use of selection indexes and multi-trait EBVs in crossbreeding programs
  - developing a crossbreeding program for your herd
  - decision support options

### **Module 3 – a review of herd improvement programs developed in module 2**

- review of breeding objective, modify as required
- review of bull purchases during previous year
- resolution of constraints in adopting herd breeding plan
- availability of technical support, networks etc
- plan for group on-going activities and updates, options for keeping the group together

### **Logistics of revising the EBB program**

The review team recommended that Bob Freer, Antek Pty Ltd be the project manager for the revision.

Writing team - it is proposed that the program manager be the lead writer, with assistance from two other technical writers and an adult educator familiar with EDGE requirements.

Program testing – pre pilot, review, pilot, editing, technical review and development of support tools for presenters would be the responsibility of the program manager.

Desk-topping to delivery would be the responsibility of MLA

Train-the-trainer activities and would be jointly planned by MLA and the program manager

**Budget and timeline** – a detailed budget will be prepared in conjunction with the MLA Project Manager -Communication and Research Adoption Team, however Karen Rosner indicated a budget for the complete revision process, from writing to delivery would be in the vicinity of \$110,000 and that a timeline of 6 to 8 months for the revision, development and delivery would be reasonable.

### Members of the review team

Karen Rosner	MLA
Bob Freer* (chairman)	consultant - chairman, BGET - Antek Pty Ltd
Wayne Upton*	AGBU/BGET
Don Nicol	consultant/BGET - Breedlink Pty Ltd
Bob Dent*	Angus Society
Brian Sundstrom	Breedplan./NSW DPI
Sandy Yeates*	breeder/consultant/BGET
Brian Cumming*	NSW DPI
Tim Hollier*	Vic DPI
Bill Hoffman	NSW DPI/More Beef from Pastures coordinator

- have presented EDGE EBB program

## Appendix B: Sample of Media coverage

Quotes from attendees (Courtesy Stock and Land)



Vernon Wilson, stud breeder/commercial producer, Tandarra, Vic  
"It gave me a lot of food for thought. We've never been in Breedplan but we'll now look at doing that after learning how important it is. It was also interesting to see how well the Limousins have gone with their temperament testing. Now they might be one step ahead of the other breeds."

Margaret Gilmour, commercial producer, Terang, Vic  
"I now have more understanding of the genetic potential of GeneStar. It was interesting to see its relevance, particularly with the marbling test."

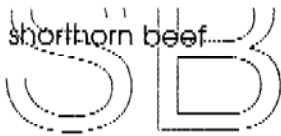


Tom Gubbins, stud breeder, Colac, Vic  
"Obviously the improvement of genetics over time increases the value of beef industry exports. I had always thought that but until now I had never seen proof."



Willard Schank, stud breeder, North Dakota, USA  
"I learned more about your system of EBVs. And Breedexact looks like an amazing program. It lets you actually have a full plan before you join your cows. You know which bulls to use to maximise the benefits."

A Sample of articles that appeared in Breed society magazines (Shorthorn Beef) and Rural Press following the Beef Genetic Horizons workshops.



## Applying the new NFI & IGF-1

Hans Graser  
Director, AGBU

In beef production feed is the single most important on farm cost. This cost can be easily quantified in feedlot operations but requires more calculations for grazing animals. Feedlot steers will eat around 8-15 kg a day of a feedlot ration, which cost around A\$200 a tonne. From this the gain between 1 and 1.5 kg per day. Multiply this with the number of days of food and it becomes quickly obvious that a reduction in feed eaten per kg gained will result in quantifiable additional champions and to give an students who bring

## Embrace technology to stay viable, says Graser

By BRYDON COVERDALE

DEMAND for meat should increase by 2 to 3 per cent annually for the next 15 years and while Australia cannot significantly up its production, it can maximise returns by producing high quality product for high value markets.

That was the message from Animal Genetics and Breeding Unit (AGBU) director Hans Graser at the recent Beef Genetics Horizons conference at



"Increased sire progeny testing will provide sires with more accurate EBVs (estimated breeding values) ... the higher accuracy information is easier to market."

Dr Graser said it was also important that stud breeders embraced new genotyping technology, which could identify how many copies an animal had of a particular gene known to affect traits such as marbling or tenderness.

He said the GeneStar test would continue to be developed.

## Taking stock of your position with Stocktake

NEW software that could be on the market within the next year can help individual seedstock herds identify how

societies to track trends in the breed as a whole. But because it used existing data and tracked long-term changes, it

resulting from embryo transfer (ET);

● mean age of sires and dams when they had their first calf;

can examine the key performance indicators and may find they are using far fewer AI bulls than other herds in the breed, or their bulls'

## EBVs equal profits

By BRYDON COVERDALE

DOES genetic progress lead to increased profits? According to the Animal Genetics and Breeding Unit's David Johnston, the answer is yes, provided the right emphasis is placed on the most economically important traits.

Dr Johnston said single trait selection did not always mean more dollars because some traits affected others.

Selecting based on higher yearling weight estimated breeding values (EBVs), for example, often leads to higher birth weight.

"However if you measure those traits you can find animals that go against that breed trend," Dr Johnston said.

He cited tests from the United States in which researchers found bulls with high yearling weights and high birth weights produced calves 3.7 kilograms heavier than bulls with similarly high yearling weights but low birth weights.

Dr Johnston said finding such animals would be made easier in Australia by the use of Breedobject, a tool that allows pro-

ducers to find a dollar index best suited to them. But to maximise profitability, the correct emphasis must be placed on each trait.

He said an index that was working well was the Japan B3 index, where average figures in the Angus breed had risen sharply and had been matched by a rapid rise in profit per cow joined.

Dr Johnston said another economically relevant EBV was the figure for net feed intake (NFI). The NFI EBV measures how much feed an animal eats each day that is more or less than the amount expected for its weight and weight gain.

Dr Johnston demonstrated NFI's importance using an example of two Angus bulls, one with an EBV of +1.1 and one with an EBV of -1.2. The progeny of the bull with the higher EBV ate 1kg more a day to gain the same weight as the progeny of the bull with the lower EBV.

If feed cost is 30 cents/kg and the progeny were on feed for 150 days, that equated to a difference of \$45 in the cost of feed. And if each bull produced 25 steers a year and worked for four years, that is a \$4500 difference.



**MONEY FOCUS:** David Johnston says that if used correctly, estimated breeding values can increase profitability.

Articles appeared immediately after the workshop events but in addition presenters were invited for comment some months later as the following articles demonstrate. The Genetics Horizon helped establish them as 'experts'. The following two articles appeared in January 2005.

STOCK & LAND  
January 20, 2005

BEEF WEEK PREVIEW 2005

ADVERTISING FEATURE

## A simple checklist for bull buyers



By DON NICOLL

COMMERCIAL bull buyers have a crucial role to play in determining what ends up on consumers' plates with their bull selection and mating decisions, so which cows are put to which bulls, becomes a critical point in the beef supply chain. The importance of genetics to beef production to produce not only consistent product but also improved profits has been highlighted by findings from the Beef to Meat Quality CRC (co-operative research centre). So how do you buy the right bull for your



PLAN AHEAD: Research on bulls should be done before you buy.

### Step 1: Plan

- Work out a budget based on reasonable average values in that breed.
- Buying with EBVs means that you are buying a bull with information that will add genetic value for profitability traits to your sale animals. Those genetics will stay in your herd for years to come with the retained daughters by the bull.
- If the price is higher than the budget can go, remember there will be other bulls and other sales. Today many breeders are using stellar high genetic merit AI sires and can provide full EBV information on their bulls.

### Step 2: You've got to get an ability

- Bulls before the working season should be in strong forward store condition, but not fat. Bypass protein meals are valuable for pre-season conditioning but be careful with leading white cottonseed to bulls

BEEF WEEK PREVIEW 2005

ADVERTISING FEATURE

STOCK & LAND  
January 20, 2005

## Spread the risk with several young bulls

By BRYDON COVERDALE

THE SOUTHERN bull-buying season is about to kick off, so what should commercial buyers keep in mind when they set out to make a purchase?

According to Animal Genetics and Breeding Unit (AGBU) extension specialist Wayne Upton, buyers should be using dollar indexes as a major selection criteria and they should be spreading their risk by buying several young bulls.

Dollar indexes are calculated by combining several estimated breeding values (EBVs) that affect the financial return for a specific target market.



Because each index is designed especially for a target market, it means at one glance a buyer can see whether a particular bull might be suitable for their commercial operation.

### INDEX FOCUS

Wayne Upton says bull buyers should use dollar indexes as the best prediction for a bull's management from specific markets.

"Indexes balance your selection for the cow-calf operator right through to the processor," Mr Upton said.

Last year, there was a strong focus from many bull buyers on the Japan BJ Index.

"My indications from the feedlot and processing industry is that the Japanese market is still going to be the price leader so I was BS

as being a pretty strong influence on the price of bulls (this season)," Mr Upton said.

"But commercial breeders need to make up their own minds about what their end market is.

"Not everyone's going to supply steers to feedlots for the Japanese high-marbling market."

Mr Upton said because commercial buyers typically purchased younger, less proven bulls, they needed to understand that the accuracy of EBVs and indexes was relatively low.

"It's not until we have an AI sire with 100 or so progeny measured that we're going to get to high accuracies," he said.

"But even at the low accuracies,

they're the best estimates that we have of the progeny performance of those bulls."

Mr Upton said one tactic producers could use to lessen the risk was to buy several young bulls at lower prices, rather than putting all their eggs in one basket with just one bull.

"My advice to them is if they want two bulls buy three. And don't pay excessive amounts for young bulls but use as many as you possibly can," Mr Upton said.

He said genetic progress in commercial herds would also be increased by turning bulls over at a faster rate, to ensure a mix of new genetics run through the herd.

are summary with all the performance information on the breed. They can be obtained from breed associations or via the internet.

- An important feature is the size summary or the percentile band table for each trait. Familiarise yourself with the level of EBVs that indicate the top 5 per cent in the breed and what level indicates the average.

- After you have pinpointed the high profit bulls based on the breed index, suits your market/production system, review the EBV profile on each individual bull to see he meets your needs for birth weight, fat cover, mature cow size, etc.
- On paper, the easiest way to do this is with a colored highlighter pen.

View new innovations within our stud to elevate quality and consistency for your breeding herd.

Inspect the 2003 Truro Sale Bulls (for private sale). Cows with calves, joined heifers and herd sizes will be displayed.

Contact: Rickard Dennis Phone: (03) 5148 2925 or Email: truro@stepacq.net.au

## Appendix C: Example of an 'Action in progress' proforma used to monitor progress of individual projects

### BFGEN.017 NBET Beef Genetics Horizons Expos

Project Team: FUN  
 Project Manager: WHU  
 Project Objective: Organise and conduct three Expos by Sept 2004  
 Last Updated: [5 August 2004](#) [8th Sept 2004](#)

<p>Major Milestones:</p> <ul style="list-style-type: none"> <li>Started Feb. 2004</li> <li>Budget and Program to Banks 18<sup>th</sup> Feb</li> <li>Phone hook-up Goldberg – Mitchell etc 11<sup>th</sup> March</li> <li>Two Horizons Meetings conducted in June and third in August</li> </ul>	<p>Performance Standards</p> <ul style="list-style-type: none"> <li>Three Beef Genetics Horizons conducted</li> <li>Delayed start at the request of MLA originally planned for May</li> <li>First two meetings conducted in June</li> <li>Rockhampton successfully conducted 26-27<sup>th</sup> August</li> </ul>			
<p>Results / Net Moves</p> <p>Three completed workshops with attendance over 200 for three events. Evaluation of each of the three was very positive.</p>	<p>Planned Activities:</p> <ul style="list-style-type: none"> <li>Organise three expos; Armidale, Hamilton, Rockhampton:</li> <li>“Awareness of new genetic tools for all sectors of the beef supply chain”</li> </ul>			
<ul style="list-style-type: none"> <li>Barriers:</li> <li>Attendance lower than desired</li> <li>May be resistance to cost</li> <li></li> </ul>	<p>Abbreviations</p> <p>cpt - completed                  - change rec'd -                  recommendations                  impl - implement                      incl - including</p>			
	Feb. 2004			August 2004
	Start			Complete