

BREEDLEADER™ - ADVANCED BREEDING AND GENETICS SHORT COURSE FOR BEEF SEEDSTOCK PRODUCERS

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SUMMARY

Descriptions of, and early experiences from a 3-day course for seedstock producers called BreedLeader™ are reported. It is an advanced course on currently available genetic tools and their use in Australian beef breeding programs. The course is the first that takes the seedstock sector beyond awareness of new technologies to the level of assisted adoption such that the participants are given the opportunity to make decisions about improvements to their breeding program before leaving the course. The target audience for the course are key breeders in the seedstock sector who can have a major influence on genetic improvement for the beef industry and who are likely to have an impact on uptake of genetic technologies because they are influencers in the industry.

INTRODUCTION

A number of important genetic tools have been released to beef seedstock breeders in the last two decades including BREEDPLAN, BreedObject, TGRM™, GeneSTAR® and more recently TakeStock® genetic audit software. TakeStock® was described (Johnston and Moore 2005) when the working title for the software was “StockTake”.

BREEDPLAN now reports on up to 19 traits and new traits are being trialed. Some breed associations have adopted market-specific selection indexes (\$Index) that are published whenever a Group BREEDPLAN analysis is completed. The \$Indexes are generally whole-chain indexes including reproductive and calving ease, growth and mature size as well as carcass EBVs. For carcass traits, the introduction of ultrasonic scanning technology has led to increased focus on that part of the selection complex with a commensurate lift in the numbers of animals evaluated. In addition, DNA marker tests have become available commercially in recent years.

Seedstock producers committed to performance recording have had an ever-changing mix and volume of genetic information and processes to understand, to implement, to include in their budgets and to publish and explain to their clients. Increasing complexity has been a feature of the recently introduced technologies and producers have sometimes found it difficult to rationalise the potential for the new tools and incorporate them in their herd recording practices (Corrigan and Parnell 2006).

The constraints to adoption of the technologies have been discussed and reviewed (Freer *et al.* 2003; Corrigan and Parnell 2006). These authors identified the lack of follow-up (assistance with adoption) after exposure to awareness programs and better industry communication as key constraints to adoption of new genetic technologies.

BREEDLEADER – A training solution for the seedstock sector

BreedLeader is a course designed for seedstock breeders and it caters for the demand created by the new and complex genetic tools that are available. While it is a classroom – lecture format necessarily using top-down techniques to introduce new technology, it incorporates many interactive sessions and

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gives the participants motivation for learning (Kilpatrick 1996) by the use of the herd's TakeStock[®] report to put all the preceding technology updating sessions in a context that is particular to their business and completely relevant.

The course is intensive and is conducted in an appropriate setting for adult group learning and is delivered on three consecutive days. Attendance is restricted to ten businesses and the pricing is set to encourage attendance from more than one person per business. Meals are taken together to encourage discussion. Talks are presented using MS PowerPoint in conjunction with written assessments, group discussions and debates. All different learning styles e.g. visual, auditory and kinaesthetic or "hands on" are catered for in the course by the variety of activities.

The course is delivered by two very experienced specialist advisers to the seedstock industry with many years of consulting to individual seedstock companies, and extension to that sector. Both have played a major role in 'technology translation' with the seedstock sector as new technologies have been introduced. During 2006 courses were delivered in NSW, South Australia, Western Australia and Victoria.

THE TARGET AUDIENCE

The target audience for the course is the leading 200 beef seedstock businesses in Australia who qualify for a TakeStock[®] analysis. To qualify for TakeStock[®] each seedstock business will have been recording with BREEDPLAN for 10 to 12 years. They will have recorded at least 50 calves per year and record with a breed association that publishes at least one selection index.

While this may seem a very exclusive 'club', it is the sector of the industry where genetic improvement must be adopted if it is to have an effect on the whole industry. The education effort in this target audience will have a double barrelled effect. They are likely to supply a large number of performance-recorded bulls and be important influencers in the seedstock and commercial sectors, and quite often they will be champions of the technologies. Genetic improvement in this sector will accrue benefits through the whole beef supply chain even if average bulls are used in the commercial sector. A multiplicative benefit will be realised if the commercial industry is also trained to make use of the genetically superior sires.

Kilpatrick (1996) reported many farmers attend field days and seminars but only a few (3%) attend accredited training courses, however that percentage has probably risen with the increase in focused learning activities since the advent of FarmBis.

COURSE ACCREDITATION

The course is a Vocational Education and Training (VET) Accredited course with the National Training Information Service (2007). Participants involved in tertiary studies can be assessed for competency and gain credits at Diploma level as the course has been mapped for competency standards by a Registered Training Organisation as well as being eligible for FarmBis subsidies in eligible states (FarmBis 2007)

COURSE CONTENT

The course aims to answer a number of key questions for the participants:

- a) Am I/we using the correct selection index for my/our herd and for my clients?
- b) If not, how do I/we decide which index will work for me/us?
- c) Should I be developing my own index (Barwick and Henzell 2005)?

- d) What does my TakeStock[®] report tell me about the results of my breeding program in the past?
- e) What changes in a future action plan will assist me to achieve the new goals I am now setting?

An important session is the TakeStock[®] group session where participants discuss their TakeStock[®] reports with other participants. After that, time is spent developing and writing a future plan for their breeding program.

In addition there are sessions on “Proof of Profit” (Freer *et al.* 2003), using the Internet to source better genetics (Scholz, 2004) and sessions on emerging DNA technologies from the effects of a single gene through to the options for using DNA tests and how they are likely to be incorporated into EBVs. This is often the first in-depth examination of the DNA marker technologies for participants.

COURSE EVALUATION

Self assessed knowledge and training needs analyses are evaluated prior to the course and acquisition of knowledge during the course is measured. Figure 1 shows values from a typical course where the topics with high scores (higher level of need) prior to the course are those in which participants considered they gained most improvement (0-5 scale). These results are as you might expect if a course is meeting the needs of the participants.

Every presentation in each course is given a rating by participants for presentation and content. Each course is evaluated on completion to ensure ongoing delivery of the most appropriate product.

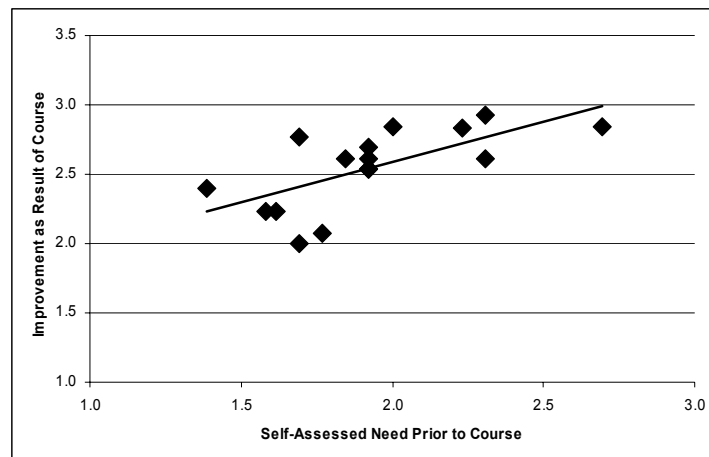


Figure 1. The relationship between prior knowledge and improvement as a result of a BreedLeader course.

DISCUSSION

With a drought current in many parts of southern Australia in 2006, the ability to get three days off the farm has been a major difficulty for potential participants. While some producers questioned if they could justify the cost of the course and travel and accommodation, participants to date have not raised that issue in course evaluations.

Adoption

TakeStock® During 2006 the course providers field-tested TakeStock® under an agreement with its commercialiser (Agricultural Business Research Institute). Responses to the first exposure to herd reports from this new software program have been extremely positive. Because it is a retrospective look at the herd breeding program there are many reasons why what happened in the past has a non-genetic explanation because of particular constraints. Quite often significant changes in the direction of the breeding program have occurred in the past two years but are not yet measured or presented in the herd reports. Once TakeStock® is commercially available it will be interesting to assess that year-to-year reaction of users in follow-up sessions to the course.

Selection Indexes. Given that genetic change in TakeStock® is measured as change in \$Index, a prerequisite is that the breeder is comfortable about the index or indexes being used. In the pre-course training needs analysis, concerns about indexes are frequently mentioned. The course includes comprehensive sessions on selection indexes with enough time for participants to ask many questions and gain answers to their particular query or concern. Course discussion and evaluation of the participants' learning experiences indicates that the majority of participants view the index as a 'black box' that they cannot really influence. Concerns have been raised about how the indexes are calculated, who decides on the economic weightings and other index issues. The formal course evaluation indicates that a much better appreciation of selection indexes is gained during the course which emphasises the need for heightened communication about \$Indexes in the industry.

Breeding for Genetic Gains or for Market Acceptance. An issue that comes up regularly is the conflict between breeding for the market and breeding for genetic gain. It is often the case that breeders use a certain AI bull because of perceived demand for sons of that bull, rather than selecting the 'best available' indexing sire. The bull breeding business is extremely competitive and since bull sales make up a major part of their annual income, demand from commercial buyers plays a major part in their selections often to the detriment of genetic gain.

Participants have regularly expressed support for the course and their pleasure in being able to concentrate solely on breeding and genetics with peers for three days (BreedLeader,2007).

ACKNOWLEDGEMENTS

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