

The Cooperative Research Centre

CRC

Bernie Bindon Retires

The Cooperative Research Centre which held a two day conference in Armidale in March attracted approximately 250 attendees from all over the world. Many scientists, producers and meat industry personnel attended the conference to honor Professor Bernard Bindon who announced his retirement from 'CRC'

Bernie is one of the most respected meat scientists in Australia and possibly the world. His work in reproduction and meat research has been most comprehensive. His popularity, leadership and ability to work in a team environment were mentioned many times in the many tributes which were made during the conference and gala dinner.

Bernie Bindon came from a pioneering dairy farming family on the Richmond River in Northern New South Wales. His secondary schooling was at St Josephs College in Sydney where he was a good student and an outstanding rugby player. He enrolled in 1958 as one of the third intake of students into the Rural Science program at the University of New England in Armidale. In addition to his studies he continued his rugby career with distinction, being selected for New South Wales in his final year. While pursuing his scientific career Bernie continued to play rugby and achieved fame as a skilful back representing both New South Wales and Queensland. In later years he coached many UNE student teams and played Golden Oldies for the Walcha Baa-baas team.

In recognition of his research leadership attributes Bernie Bindon was promoted in 1989 to the position of Assistant Chief of CSIRO and then in 1990 the Australian Government established the Cooperative Research Centre scheme. The scheme was designed to support and foster collaboration between research and extension agencies, institutions and industry partners. The aim was to facilitate research and deliver research outcomes to provide solutions to industry problems.

Bindon, with others, was instrumental in developing a submission for research for the beef industry. Their determination, skill and guile was largely responsible for a \$60 million government and industry funded beef research program. Although their first application was unsuccessful, a second application in 1992 received the required funding to commence work. Bernie Bindon was appointed as Director of the first CRC for the Cattle and Beef Industry and successfully led a team of beef and cattle researchers until the year 2000. In 1999 Bernie and his team received a further \$20 million federal government support for ongoing research in a total budget of \$83 million. Not content with the success of those two massive research programs Bernie was a major force in securing funding for the third CRC program which commenced in 2005.



Dr Heather Burrow CEO for CRC and Bernie Bindon retiring CEO and newly appointed chairman of the Australian Registered Cattle Breeders Association.

The focus for the CRC team was to address the beef quality issue which the Australian Cattle industry was facing. Export beef customers and consumers were demanding a beef product with consistent eating quality. This required research and education covering growth and nutrition, meat science and genetics. The first stage was to undertake a comprehensive progeny test for beef quality traits. This was a massive program involving cattle from a large number of breeds and crossbreeds finished on pasture or feedlots in both northern and southern environments. Data from 12,000 carcasses were collected. This resulted in Australia having a better understanding of genetic and non genetic factors affecting beef quality. The availability of accurately measured, economically important traits in fully pedigreed cattle on such a large scale produced powerful additions to genetic improvement programs and enabled the discovery of DNA tests for production traits.

The second CRC program focused on net feed intake (NFI) of beef cattle and this research identified animals that 'eat less for the same gain'. The results enabled increased profit by utilizing sires of known genetic merit for this trait. The inconvenience and cost of testing seed stock cattle for NFI led the CRC research team to look for gene markers and physiological tests to increase the accuracy of the NFI EBV and/or to reduce costs of finding superior stock. Concurrently, in collaboration with a commercial partner, a blood test for the protein IGF-1 was developed – a simple and cheap screening predictor of NFI. The CRC's results confirming genetic variation in feed efficiency allowed the Animal Genetic and Breeding Unit (AGBU) to develop an EBV for feed efficiency. The

Agricultural Business Research Institute (ABRI) introduced the EBV to Breedplan in 2004. Research has provided ample evidence of genetic variation in feed efficiency in beef cattle breeds. *Feed efficiency, measured as net feed intake (NFI) is moderately heritable, responds to selection and presents an opportunity to improve the feed efficiency and profitability for beef production.*

The successful third renewal of CRC funding, greatly assisted by Bindon's inputs, was based on the theme 'Gene Discovery and Expression.' The program will address genetic control of production traits in cattle (growth, meat quality, feed efficiency, disease resistance, reproduction) and the environmental triggers that switch controlling genes on and off. The development of gene marker (DNA) tests for key traits will provide management and nutritional strategies to precisely modify the activity of gene networks affecting production. The big picture goal for CRC is to equip the cattle industry in the future for '*Precision Cattle Breeding and Management for Quality, Efficiency and Profit*'

One of the hallmarks of Bernie Bindon's career has been his connection with projects that have clear goals which combine scientific excellence with industry relevance. In addition he has the ability to read an audience and deliver messages at the appropriate level. There were twenty-nine speakers at the most recent conference in Armidale and not all had Bindon's ability to either read the audience or to deliver a message with clarity. One of the speakers that I related to was Mrs. Lucinda Corrigan who is a non executive director of the CRC board. Lucinda and her husband Brian run an Angus herd and their herd was one of the herds used to test the value of genetic technology. Lucinda's paper was titled

“the application of genetic technology in the temperate Australian beef seed stock industry.” Lucinda demonstrated the value of performance recording with a series of impressive genetic trend graphs and then identified the challenges facing the application of genetic technology. Commercial clients, other seed stock producers and ABRI rated as the most important sources of information assisting the surveyed farmers with breeding decisions.

The two main concerns perceived by the farmers surveyed were defining appropriate breeding goals due to the uncertainty of future markets and the need for greater financial reward to recover the increasing costs associated with producing improved seed stock. Performance recording statistics for calves born over a period from 1990 to 2003 were collated from four seed stock producers known to be enthusiastic adopters of genetic technology. The Hereford herd assessed for rates of genetic progress was Ian and Diana Locke’s Wirruna herd in Holbrook. This herd had been in a gradual expansion stage since 1999 with 250-350 calves recorded per year during the period from 1999 to 2003. For this period the herd achieved an average genetic trend of +\$1.32 /cow.year for the Hereford Prime Index. During the previous 5 year period (1994-1998) the herd achieved an average genetic progress of +\$0.95/cow per year. Breed average for the Hereford Prime Index is +\$0.87. The trends in the \$Index Values shown by the example herds clearly illustrated excellent potential for achieving genetic progress from the adoption of genetic technology.

Rod Polkinghorne presented a paper which was similar to the one he presented at the World Hereford Conference in 2004. His message was that a payment for grading on the

predicted cooking result could mean price differentials of between \$10 and \$15. At the Polkinghorne farm the adoption of a transparent value based payment in conjunction with detailed feedback has provided strong incentive for change and highlighted the large variation in true value of apparently similar carcasses. This could add as much as \$200 to the value of a top carcass and provide the required incentive to really lift the quality and consistency of the beef product.

The other speaker that impressed me was Mr. Declan Troy from the Irish National Food Centre. Troy reported results from various hanging methods which affected tenderness. Among the different hanging techniques developed to improve meat tenderness are tenderstretch, tendercut, forequarter hanging and the Pi-vac tenderbound packaging system. The most popular procedure is tenderstretch. The procedure requires additional input of making cuts in the skeleton of the pre-rigor carcass. When hot-boned muscles are removed pre-rigor they are prone to contract as the muscle is not held in a stretched state usually provided by the skeletal framework of the carcass. The Pi-vac packaging system involves stretching and fixing tubes of elastic film to the inside walls of the packaging chamber. After the muscle is inserted into the chamber, pressure is released and the elastic film returns to its original dimensions. The elastic film then hinders diametrical expansion of the muscle which restricts muscle contraction.

Mr. Jay Hetzel from Genestar and Dr Neil Clarke from New Zealand were given the task of summarizing the conference. Hetzel said it all with his opening words which were “life wasn’t meant to be easy” New technology must be cost efficient and there must be some

incentives for producers and processors. Genetic solutions will increase in their complexity and it will be essential to have advisory services to fully utilize technology.

Research must be industry driven while producers and processors need clear market signals to optimize genetic progress in the beef industry.

Further information www.beef.crc.org.au