Australian Dairy Herd Improvement Report

2002 - 2003

Australian Dairy Herd Improvement Scheme

NHIA

DHIF
DAIRY HERD IMPROVEMENT FUND

ADHIS is supported by:

Contents

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2002/2003 Australian Dairy Herd Improvement Report – Foreword

Leon Giglia
NHIA Chairman

This important statistical publication is brought to you by the National Herd Improvement Association of Australia (NHIA) in conjunction with the Victorian Dairy Herd Improvement Fund (DHIF) and in co-operation with the Australian Dairy Herd Improvement Scheme (ADHIS) which provided the data used in this report. The report has been jointly financed by DHIF and ADHIS.

The Australian Dairy Herd Improvement Report provides a great deal of information, useful to every farmer and to other industry groups, both local and international. Copies of the report will be made available to herd improvement stakeholders all over Australia and will provide a most useful industry resource for international visitors, researchers and others. The stakeholders of the DHIF, Victoria's dairy farmers, will have access to the report through their local herd improvement provider or, alternatively, copies may be ordered by contacting the NHIA office, or downloaded from the NHIA Website.

NHIA is a strong supporter of the Australian Dairy Herd Improvement Report. ADHIS, through its programs and computing facilities, makes national statistics available to industry. For the purpose of this report, a co-operative approach has been taken with ADHIS to ensure the continued provision of a broad spread of information.

Australian herd recording participation in 2002/2003 amounted to 6,358 herds and 1,177,899 cows under test. National average milk production was 5,877 litres per cow, 235 kgs butterfat, 193 kgs protein and the average lactation length was 303 days. The number of herds involved with herd recording declined by 8.3% compared with the previous year and milk production per cow declined by 5.6%. These figures indicate a decline in herd recording participation and production, both of which can be directly attributed to adverse seasonal conditions experienced across much of Australia.

Seasonal conditions in many parts of Australia in the pre Christmas period of 2003/2004 are much improved compared to the previous year. However, the effects of the previous year will impact the industry for some years. It is difficult to estimate the decline in the total number of cows in milk this year, suffice to say that numbers have been seriously reduced, a significant number of farmers are leaving the industry and the impact for the Herd Improvement industry is yet to be fully appreciated.

The Herd Improvement Industry is undergoing significant ongoing rationalisation and adjustment, following the deregulation of the industry three years ago. This process of structural change has been accelerated by the difficult seasonal conditions of last year and NHIA is in the process of commissioning a consultancy to 'landscape' the industry for the short and medium term with a view to assisting NHIA and other industry participants to better understand a complex, difficult and changing environment.

Leon Giglia
NHIA Chairman

2002/2003 Australian Dairy Herd Improvement Report – Foreword

Mr. Allan Burgess
Chairman, ADHIS

In 2003 we celebrated 20 years since the first ABV release by ADHIS. This celebration included a dinner with about 110 attending including past and present boardmembers and employees and industry representatives.

The first ABV's for production traits were released in 1983. Since then over thirty new traits have been added including the Australian Profit Ranking (APR) which allows dairyfarmers to select the most profitable bulls for their herd. An estimate has shown that ADHIS has generated $200 million in net benefits to Australian dairyfarmers during this time. This is something that ADHIS is very proud of.

Early this year Pat Rowley retired from ADHIS after 18 years as Chairman. On behalf of ADHIS I would like to thank Pat for his contribution not only to ADHIS but also to the dairy industry as a whole. Pat has taken up the position as Chairman of the newly formed Dairy Australia, the major funding body of ADHIS. We wish Pat all the best in this position.

During the past 20 years there has been significant change not only for ADHIS but the herd improvement industry as a whole. This change continued in the past 12 months including several new initiatives from ADHIS.

We welcomed Mr. Daniel Abernethy who joins ADHIS replacing Mr. Robert Poole as Executive Officer. Daniel comes with a dairy / herd improvement background and is enthusiastic about working for ADHIS and increasing the genetic merit of the Australian dairy population. Robert has taken up the position of deputy CEO of Australian Dairy Farmers, the parent body of ADHIS.

In the past year ADHIS implemented the Cows n Genes Training course managed by Miss Erica Schelfhorst. This course has been very successful in increasing the understanding of ABV's. The course has been mainly presented to HI centers and AB companies. We intend to make the course available to dairyfarmers in 2004.

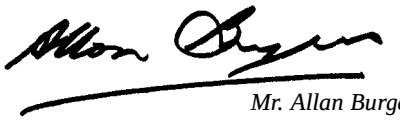
ADHIS released the daughter fertility ABV in 2003. This breeding value ranks bulls on the ability of their daughters to get in calf during the AI period. This ABV partly addresses the genetic effects that result in reduced cow fertility. The daughter fertility ABV is also included in the Australian Profit Ranking (APR). Semen fertility values were also produced in this period.

ADHIS continues to support research and development projects especially Countdown Downunder and InCalf and acknowledges the importance of these programs in increasing dairyfarmers profitability.

ADHIS would like to thank the on-going support from Dairy Australia who partly fund the scheme via dairyfarmer levies. On behalf of ADHIS I would also like to thank Australia's herd recording farmers and herd improvement centres whose contributions make the production of ABV's possible.

Since becoming chairman of ADHIS I have been extremely impressed with the professionalism and achievements of the ADHIS staff both at William Street and at the Department of Primary Industries. On behalf of the Board I would like to thank them for their efforts over the past year. I also acknowledge the support of the ADHIS committees and Board. The members of these committee's are listed in this report and we thank them all for their valued input.

It has always been the goal of ADHIS to provide an independent genetic selection tool of high integrity with the objective of maximising the benefits to the Australian dairyfarmers. The ADHIS Board still see these goals as paramount if we are to continue to provide dairyfarmers with a world class genetic evaluation system.



Mr. Allan Burgess
Chairman, ADHIS

Dairy Industry Overview 2003

Jim Saunders
Chief Executive NHIA

The year ended 30 June, 2003 has seen a serious decline in milk production. Figures provided by Dairy Australian indicate that approximately 10.326 billion litres were produced, a decrease of 8.4% on the previous year when 11.271 billion litres were produced. This decrease was, primarily, due to extremely difficult seasonal conditions in the major dairy production areas of Australia.

Within Australia, all States except South Australia (+2.5%) and Western Australia (+2.7%) showed production decreases for the year under review. All of the eastern States recorded significant decreases, which were almost entirely due to severe drought conditions, regarded by many as the worst in memory. In Victoria, the largest dairy state that produces more than 60% of Australia's milk, there was a production decrease of 11.1%, New South Wales (-3.1%), Queensland (-3.4%), and Tasmania (-12.8%).

The very severe seasonal conditions were worst felt in intensive dairy production areas where the impact of low rainfall, reduced availability of irrigation water and soaring supplementary feed costs made the season extraordinarily difficult. The net result was a dramatic fall in production, greatly increased production costs and, in many cases, significant de-stocking. Quite a number of farmers were able to 'park' their cows on farms in less drought affected areas, nevertheless the reduced number of cows in the national herd as a result of the drought is profound.

During the course of the year average farm gate prices paid to Australian dairy farmers for milk for manufacture remained at less than satisfactory levels as the gradual strengthening of the Australian currency coupled with poor international prices for some key dairy manufactured products ensured that revenues from the export of Australian dairy produce was considerably below that of the previous year.

By the end of June the price prospects for the forthcoming season for milk for manufacture purposes were looking slightly better than at the same time the previous year. It was anticipated that the opening prices for milk for manufacture for 2003/04 would increase marginally.

The first quarter of production for 2003/2004 is disappointing with national milk production down 8.3% on the previous year. This reflects the ongoing effects of the drought which has resulted in significant de-stocking, the sale of some irrigation water rights and a large number of farmers deciding to leave the industry. The impact is being felt heavily in the Herd Improvement Industry. A number of providers have reported poor financial results for the 2002/2003 year and the signs are that difficult economic times will continue for the medium term. This is despite reasonable rainfall in most of the major dairy areas and the likelihood of a much improved grain crop for Australia.

Season 2003/04 will be a watershed year for the Australian Herd improvement Industry. In addition to all the economic difficulties that both farmers and providers are experiencing due to the flow on effects of the drought, the industry is undergoing substantial structural change. A number of providers that merged/sold their businesses in the previous year have experienced difficult trading conditions. The likelihood is that there will be further structural adjustment in the industry during the coming year, resulting in a lesser number of providers and some reduction in choice for end users. The real impact of the drought will take some time to be fully appreciated.

Jim Saunders
Chief Executive NHIA

Report on ADHIS activities in 2003

Daniel Abernethy
ADHIS Executive Officer

Daniel Abernethy joins ADHIS

In September 2003 ADHIS was pleased to announce the appointment of Daniel Abernethy to the position of Executive Officer of the Australian Dairy Herd Improvement Scheme (ADHIS). Daniel will also carry the title of Australian Dairy Farmers Limited (ADF) Policy Officer. Daniel replaces Robert Poole who was ADHIS Executive Officer for the past 6 years. Robert has taken up the position as deputy CEO of the Australian Dairy Farmers Limited, the parent company of ADHIS.

Daniel graduated with honours from the La Trobe University Agricultural Science course in 1996 before commencing employment with Ridley Agriproducts. As a Territory Manager Daniel was involved in technical sales with dairy, sheep and beef farmers and rural outlets in Northern Victoria, Gippsland and Tasmania.

After three years with Ridley, Daniel joined Gippsland Herd Improvement (GHI) as the Field Officer Supervisor (Maffra). In this position Daniel worked with field staff members, AI technicians, AB companies and dairyfarmers, aiming to improve the genetics of farmers' herds through the use of proven AI bulls and herd testing.

Daniel will work with the ADHIS/ADF teams and is looking forward to maintaining and growing ADHIS' service to dairyfarmers and the HI industry.

Major ADHIS events in 2003.

- ADHIS celebrates 20 years of operation.
- Dr. Pat Rowley retires from ADHIS after 18 years as Chairman.
- Mr. Daniel Abernethy joins ADHIS as Executive Officer.
- Cows 'n' Genes Training course presented to HI centers and AB companies increasing awareness and understanding of ABV's.
- ADHIS co-ordinates the Data Capture Trial, looking at improving on-farm recording of cow events such as mating, mastitis and calving.
- Three official releases of Australian Breeding Values (ABV's) February, May & August.
- Introduction of new ABV for daughter fertility and its inclusion into the Australian Profit Ranking (APR).
- Update of the type base.
- Production of semen fertility rankings.
- Continued support for research and development projects especially Countdown Downunder and InCalf.

ADHIS Celebrates 20 years of ABV's

The first official Australian Breeding Value's (ABV's) were released 20 years ago in 1983.

Since that time, the dairy industry has invested about $10 million into funding ADHIS for an estimated net return of $200 million. Accordingly, ADHIS is considered one of the most successful dairy industry projects in history. Many people have been part of this success.

To mark the 20th anniversary, ADHIS held a dinner in Melbourne on the 18th August 2003.

The aim was to make the night an enjoyable reflection on the past 20 years. In attendance were many past boardmembers, employees and HI industry staff. These included former chairman Mr John Bennett and Dr. Pat Rowley, former board members Bill Pyle and Kem Perkins, and former executive officers Mr. John McQueen and Mr. Mark Jeffries.

Professor Ted Burnside also made the trip from Canada to be part of the dinner and many of the guests enjoyed catching up with Ted.

Dr. Pat Rowley retires from ADHIS

Dr. Pat Rowley joined the board of ADHIS in 1985. From Queensland, Dr Rowley replaced Mr John Bennett as ADF Chairman also taking over the chair of ADHIS. Dr Rowley remained in these positions until 2003 and is recognised as an icon of dairy industry farmer representation.

As chairman of ADHIS from its early years, Dr Rowley saw ADHIS introduce ABV's for over 30 new traits, as well as the introduction of the Australian Profit Ranking (APR). In the early years, Dr Rowley was at the forefront of the push for ongoing and additional funding of ADHIS as well as the joining and participation in Interbull in 1997.

Dr Rowley has been widely recognised within the Australian dairy, agriculture and government circles, and in the international dairy community, as an outstanding farmer leader.

Through his negotiating skills and strength of argument with Government, Dr Rowley was able to achieve for dairy farmers Australia's largest agricultural restructure package to assist dairyfarmers with the change to full deregulation in 2001.

Dr Rowley's outstanding contributions to dairy farmers, the dairy industry and to broad agricultural policy in Australia will be long lasting.

The ADHIS wishes Dr Rowley well for his future.

A brief history of the Australian Dairy Herd Improvement Scheme (ADHIS)

Summary
ADHIS was formed in 1982 as an initiative of the Australian Dairy Farmers' (ADF) with the support of the Standing Committee on Agriculture.

Australian Breeding Values (ABV's) for production traits were released twenty years ago in 1983.

Over thirty new traits have been added since 1983.

ADHIS has generated an estimated $200 million in net benefits to Australian dairyfarmers at a cost of about $10 million.

ADHIS was born from recommendations from the Standing Committee on Agriculture following lobbying from key dairyfarmers for a national genetic evaluation system.

Prior to 1983, herd recording and to some extend artificial breeding, were still under the control of state government legislation and managed by state authorities. This included some state based genetic assessment.

In 1978, the Victorian Department of Agriculture offered to compute breeding values within each state, using the method of Modified Contemporary Comparisons. At the same time, an Australian Dairy Research Committee (ADRC) project commenced under the supervision of Dr Ian Hopkins to develop a national program of genetic evaluation using the method referred to as BLUP (Best Linear Unbiased Predictor). Dr Geoff Robinson was employed on this project as Statistician.

Geoff was responsible for most of the early statistical and software design. Staff of the Victorian Department wrote most of the programs required for developing a national data set, and for extracting appropriate data for analysis.

After the initial ADRC project, it was decided that it was more appropriate for ADF to manage the project as an ongoing concern.

The ADHIS Board first formally met on September 9th 1982 at Dairy Industry House in St Kilda Road Melbourne. The Board consisted of John Bennett (Tasmania), Bill Pyle (Victoria), Jack Eggert (NSW) and John McQueen (Executive Officer), Dr Graeme Alexander (Queensland DPI) and Mr Clay Manners (Secretary). However Mr Pat Rowley actually deputised for John Bennett at that meeting.

The first ADHIS scientists were also in attendance, namely Dr Ian Hopkins, Dr Geoff Robinson and Dr Les Jones. As is the case today, ADHIS' technical team was provided by the Victorian Department of Agriculture (in its various forms over the years). The relationship between ADHIS and the Victorian department has been a successful one and the ADHIS Board minutes record that significant time and effort has been invested in maintaining the relationship over the past twenty years.

Les Jones and Kevin Beard provided the technical service for ADHIS via the Department of Primary Industries Victoria to this day. Their contribution of their skills and service cannot be overstated.
The first ADHIS Advisory Committee Meeting took place on 6 July 1982, also at Dairy Industry House. Advisory Committee representation was structured according to decisions from the Agricultural Council and through directives of the Minister for Primary Industries. Its charter was to make recommendations to the board about technical and operational issues affecting ADHIS.

The inaugural ADHIS Advisory Committee
WH Pyle, KL Perkins (ADFF), E Rowly and K Chester (HIOV), MAL Liebelt (HISCOL), RE Lawrence (Elders), AD Frost (THIO), BA Mayne (VAB), DB Heponstall (Dep of Ag NSW), H Edgoose (Dep of Ag Vic), IH Rayner (DPI Qld), CR Blacker (RDCA), CR Manners (Secretary).

Visitors were Dr I Hopkins, G Robinson and V Badham (Dep of Ag Vic), G McCormack (DPI Qld) and Mrs N Anderson (ADFF).

The basic framework of ABV formulation dominated the agendas of these early meetings. This included the consistency of results; sire identification, reliability estimation, linkages between populations, publication rules and presentation.

Present as an observer at some early ADHIS meetings was Professor Ted Burnside from Canada. In conjunction with the Executive Officer, Mr McQueen, Ted toured the regions of Australia in 1983, explaining the benefits of the ABV system.

In 1984 ADHIS Pty Ltd was registered and publications were released under this entity.

Funding ADHIS was a constant item on the Board agendas especially in the 1980's when the benefits of ADHIS, although clear to most, were still unclear to some. In the early years the ADHIS Board and staff were regularly in contact with the ADRC to argue and justify ongoing funding. In 1986, just three years after the first release, the ADRC asked the Board to reduce the ADHIS budget.

Following the 1986 ADRC request, consideration was given to service funding. The Board decided to separate the commercial elements of ADHIS from the R & D elements, in the budget of 1986/87. Service revenue grew steadily from this point as fees were applied to ADHIS services.

Up until 1997, ADHIS funding remained subject to an annual grant application to the ADRC which became the Dairy Research and Development Corporation (DRDC). In 1998 and again in 2001, the DRDC granted a three-year funding contract to ADHIS for about 60% of its funding requirements.

The first ABV analyses used a sire model using only completed first lactations. The collaborative work of Geoff Robinson and Kevin Beard led to the use of individual test day records to take better account of fluctuations in environment between test days, and to use records in progress.

There was considerable interest in identifying elite cows more effectively. At the same time, the industry wanted notice taken of performance in all lactations. Geoff was able to develop a method of solving equations that made simultaneous evaluation of the genetic merit of cows and bulls economically feasible.

Cow plus bull BLUP (now known worldwide as an Animal Model) was proposed to the ADHIS Board by Geoff Robinson in early 1983. In the following year ADHIS became the first organisation in the world to implement this model for breeding values.

ADHIS' sub-committees were also formed in these early days. In 1983 the Genetics Committee was formed with Dr Frank Nicholas, Dr Sandy McClintock, Dr Keith Hammond and Dr Mick Tierney joining the ADHIS technical staff on the inaugural committee.

The Records-Standards Committee was also formed in 1983. The inaugural committee was Mr Arthur Stubbs, (HIO), Mr Ken Phillips (DPI Qld), Mr R Bettenay (WA Dep of Ag) Ms Golda Munro (SA Dep of Ag), Mr Vin Badham (Dep of Ag Vic), Mr David Heponstall (Dep of Ag NSW), Mr E Wickham (Tas Herd Imp Org). Mr Stubbs convened this meeting.

The herd recording centres reformed dramatically in the time of ADHIS with: the end of government involvement, the restructure of the Herd

Improvement Organisation (HIO), testing for protein and cell count on every test, substantial mergers and reform and decentralised computer facilities. The support for ADHIS from this sector has been one of the major factors in the long-term success of the project. This relationship continues today under a Memorandum of Understanding, developed in 1999.

The first ABV's were released in April 1983. They were actually called January ABV's because of the data set on which they were based.

ABV's for milk, fat, fat %, protein and protein % were released. Some bulls did not have breeding values for protein traits as protein testing was in its early days.

The number 1 fat bull was Wangaruka Rebo however Baron Vale Starlite was the number 1 available bull.

For the first two years of operation, ADHIS released ABV's for milk, fat, fat percent, protein and protein percent. However from its inception, the ADHIS board had established committees and plans to implement additional traits of importance.

From the very early meetings there was consideration of type, workability, survival and even fertility. According to the minutes, dollar value indexes were considered from the first release in 1983.

ABV's for Type were approved in October 1985 and released in 1986. They were initially carried out by ABRI in Armadale, but this service was moved to the Victorian Department of Agriculture in 1988.

Enormous time was devoted to discussions about type ABV's. This was particularly related to who could provide the service of assessing cattle. Initially the issue related to whether or not AB companies could assess cattle. Eventually the Holstein Friesian Association of Australia (HFAA) was recognised as the sole provider of data for type ABV's on the basis of their independence and national classifier network.

In October 1989 Australian Jersey Breeders Society (AJBS) and Illawarra Cattle Breeders' federation (ICBF) were accepted as LTE providers. The AJBS process was a long one, lasting five years from the time of their first request to ADHIS. In that time the AJBS formed a national panel, reducing the number of classifiers from about thirty to ten in the process.

ABV's for workability traits (Temperament, Milking Speed and Temperament) were approved in 1988 and introduced in 1989.
The Victorian Government Computing Centre was used to carry out the analysis from the establishment of ADHIS until 1997. ADHIS only had access to the computer at nighttime as it was used for government duties during the day.

Other constants in the history of ADHIS have been the AB companies, especially VAB and WACOL, now Genetics Australia and Elders, which became RAB Australia and is now ABS Australia. These organisations have been an integral part of the committee processes that have helped shape ADHIS today.

In 1991 the ADHIS Board noted independent semen distributions had be formed for Semex, ABS, Worldwide Sires. Gordon Stewart and Associates was also selling overseas semen and later took up the Alta Genetics distributorship. The Board entered an era in the 1990's where the politics of Australian versus overseas product needed to be managed and issues such as fees, access to information and advertising codes were raised.

Interbull was another topic that was regularly debated throughout ADHIS history. From the early 1980's the Board tried in vain to raise the funding and support to firstly join and then participate in Interbull. Eventually funding commenced to allow staff such as Les Jones, Kevin Beard and Mark Jeffries to attend Interbull meetings. In 1997 Australia formally participated in the Interbull production analysis via ADHIS.

Computing technology, coupled with increased funding support from the DRDC, changed the face of ADHIS from the mid-1990's. The "re-write" project was conceived in 1994 and in 1998 ADHIS produced ABV's using its own software on its own computing facility (based at Attwood in Melbourne). The ABV computing facilities were updated again in 1999 and 2002. The speed of these facilities was the catalyst for the introduction of multiple ABV releases in 1999, many new services to AB companies, internet based data delivery and several new traits.

Prior to the purchase of ADHIS' computer, expansion of ADHIS' services was limited by the need to purchase time on a mainframe computer. After the purchase of ADHIS' first computer, the marginal cost of computer time was negligible, so ADHIS was able to consider more frequent evaluations. This enabled not only more frequent official releases of ABV's, but confidential evaluations of young bulls (PBV's) could be based on a full data set, rather than a very limited set.

From 1999 ADHIS Pty Ltd retained the revenue gained from the sale of ABV related services. Prior to this, all revenue was returned to the DRDC effectively restricting ADHIS to its grant allocation. With the support of the DRDC, ADHIS entered an era where new services and staff could be developed. For example, since ADHIS was formed in 1982, the minutes recorded the need for extension and training resources. However it was not until 2002, with the resources generated via the retention of ADHIS Pty Ltd funds, that Miss Erica Schelfhorst was appointed with 50% of her time allocated to education and extension.

Cows n Genes Course

The Dairy Industry readily takes up genetic improvement and is one of the most progressive animal industries with respect to genetic improvement. However, as new genetic evaluations are undertaken and new ABV's released, there is a need to skill the people involved in delivering and receiving these genetic tools. Consequently, ADHIS has taken on the new role of the provision of a genetics training course for all those involved in the dairy industry, whether they are farmers or resellers.

The desired outcomes of the Cows n Genes course is to deliver the following:

- *Increase the understanding of Australian Breeding Value's (ABVs) and the Australian Profit Ranking (APR) and to better utilise these measures.*
- *Understand the importance and benefits of herd testing and progeny testing*
- *Increase the understanding of genetics overall and how they impact on cow selection and profitability in the dairy industry*

Nearly one hundred people participated in the COWS n GENES course in 2002/03. The majority of these participants are staff of herd improvement centres and AB companies. To date participant feedback has been very positive with 72% of the participants indicating that they would like to participate in a follow up course on ABVs & learn more about how they function.

Farmers will have the opportunity to participant in the Cows n Genes course in 2004. It is anticipated that programs will be delivered in dairying regions around Australia.

A number of topics are covered within the course, all of which aim to increase the participants understanding of ABVs and the APR. All topics covered were scored highly by participants in their feedback survey with the most highly rated topic being 'Understanding the Australian Profit Ranking'.

ADHIS Activities

Data Capture Project

Summary
Key industry groups such as InCalf, Countdown Downunder, Genetics Australia, herd improvement centres and ADHIS, recognise that dairy farm management benefits greatly from efficient data capture for monitoring and analysis. A project therefore was specifically designed to address the issue of on-farm data capture.

The Data Capture Project commenced in 2002 and was primarily funded by Dairy Australia and coordinated by ADHIS. The main component of the study involves working with a pilot group of about 85 progeny testing herds. Fifty-five of these farms use PALM handheld computers while the other 30 farms continue to use their traditional written systems and farm PC's.

The main objectives of the data capture trial were:

- To develop and demonstrate an improved system to capture fertility data that can be used to calculate an improved ABV for cow fertility.
- To calculate the heritability of fertility traits collected in this way.
- To test the use of this fertility data for the production of herd reproductive performance measure reports, as designed by InCalf.
- To develop and demonstrate an improved system to capture calving ease data that can be used to calculate an improved ABV.
- To develop and demonstrate a system for collecting improved data on mastitis events.
- To test the use of this mastitis data for the production of herd mastitis reports, as designed by Countdown Downunder.
- To compare the use of handheld computers to traditional methods for collecting this data.

An entry survey was conducted which showed that 11%, 20% and 69% of the farmers would use Paper, PC or a PALM respectively. They would primarily record mating, calving ease and herd health data.

By the end of 2003, the data collection period had been too short to determine accurately if the data recording methods had had an effect on the amount and quality of data collected. However, there had been a 16% increase in the amount of mating data that was received between January and May 2003 compared to the same period in 2002.

2003 Australian Breeding Value (ABV) Releases

In 2003 ADHIS released ABV's in February, May and August. Interbull ABV(i)'s were produced as part of this release as well as being produced in November.

For each ABV release ADHIS produced a brochure of the top available ABV and ABV(i) bulls for Holsteins and Jersey's. Also included was the top ten bulls in the Red Breeds and from Feb 2003 the top 5 Guernsey. The ABV flyer was distributed via the AB companies and herd improvement centres. In August 2003 the brochure was sent to all Australian dairyfarmers via the Australian Dairyfarmer Magazine. The ABV's for all bulls were available via the ADHIS website free of charge, using a searchable database.

About 1.17 million cows were recorded in 2002/2003. This was a fall of about 20,000 cows from the previous year, much of which has been attributed to the unfavorable seasonal conditions and economic pressures.
Cow ABV's were calculated and available for distribution free of charge to herd owners via the regional herd improvement centres.

New ABV's in 2003

From February 2003 ADHIS produced and published a new ABV for daughter fertility. This new ABV was included as part of the APR as it influences the profit generated from genetic selection.

Daughter Fertility ABV's

Key Messages:

- Selecting sires from those with high Australian Profit Rankings (APR's) will ensure that genetic selection for profit, including daughter fertility, is maximised.
- Daughter Fertility ABV's allow dairyfarmers to select bulls that produce daughters that are more likely to become pregnant earlier.
- Differences in Daughter Fertility ABV's account for a small part of the variation in herd reproductive performance.

Daughter Fertility ABV's measure the difference between bulls for the percentage of their daughters pregnant by 6-weeks after mating start date. In year-round herds this is equivalent to the percentage of their daughters pregnant by 100-days after calving.

These are the standard measures adopted by the InCalf project.

A bull with a Daughter Fertility ABV of +2.0 will have daughters that are about 1% more likely to be pregnant by six weeks after mating start or 100 days after calving in year-round herds, compared to average. Note that the ABV is halved to calculate the benefit in the progeny because only half the genes come from the sire.

Many bulls do not have a publishable Daughter Fertility ABV in their early years of use. However proven bulls will become officially publishable as they add daughters and lactations.

ADHIS officially published Daughter Fertility ABV's for individual bulls when their Reliability reached 55% with daughters in at least 10 Australian herds.

However all bulls on the NASIS file received a Daughter Fertility ABV if the Reliability was > 10%. This included bulls without any milking daughters where the ABV is based on pedigree only e.g. overseas bulls. Daughter Fertility ABV's were included in the APR calculation if the reliability was above 10%.

Most bulls (66%) had a Daughter Fertility ABV between +/- 3%. The extremes of the Holstein breed for publishable bulls were at +/- 10%.

It was accepted that improving herd reproductive performance would improve total profitability. ADHIS aimed to include all traits of economic importance in the APR. Consequently ADHIS considered the various economic factors that affect the importance of herd reproductive performance on profit.

The importance varied across production systems due mainly to a herd's calving pattern.

ADHIS uses $3.00 per 1% change in 6 week in-calf rate to reflect the economic value of fertility in the range of Australian herds. At this level, selection using APR will address the current decline in the genetic trend for 6 week day in-calf rate.

Example

- A bull with a Daughter Fertility ABV of +2% is 2% better for daughter fertility than the average.
- In the Australian Profit Ranking each 1% change is weighted at $3 net profit. Therefore this bull receives $6 (2% x $3) in APR.
- He will pass half of this advantage (1% or $3) onto the next generation (the other half coming from the dam).
- In this example the benefit from the bull's progeny is an estimated 1% improvement in the 6 week in-calf rate or $3 net profit per cow per year.

ADHIS Activities

ABV Type Base Updated

ADHIS updated the ABV base for type traits from February 2003. Changing the base did not re-rank bulls in any way because all bulls are affected in exactly the same way. The Australian Profit Ranking (APR) was also not affected.

ABV's are expressed relative to each other using a base zero point. The base is the average ABV of a group of animals, which is set at zero. This provides a reference point for comparisons between bulls.

Prior to February 2003, type ABV's were reported from the average of AI bulls born around 1981/82. Since that time genetic change has occurred for most type traits. Therefore it was appropriate to update the base so that bulls could be compared to a more modern average.

The updated base was reflective of the average type ABV's for AI (NASIS) bulls born around 1990. This represented the population of cows born in 1995. (Note that the ABV base for production traits was the average of cows born in 1995).

As a result of the updated base for Holsteins:

- All bulls fell 0.59 points for Overall Type ABV.
- All bulls fell 0.55 points for Overall Mammary ABV.
- All bulls fell 0.45 points for Stature ABV.
- All bulls fell 0.18 points for Udder Depth ABV.
- All bulls increased 0.12 points for Chest Width ABV

All ABV bases, including type, will be updated again in 2005. In comparison to this base change, the changes in the type base in 2005 will be very small.

Semen Fertility

Key Messages
- Semen fertility is different from daughter fertility.
- While conception rates were similar for semen from most bulls, some bulls had reduced conception rates.
- Use a range of bulls, in an AI program rather than only one or two.
- Consider published semen fertility estimates when selecting bulls.

ADHIS published Semen Fertility for higher use bulls from February 2003.

The Semen Fertility analysis is not an Australian Breeding Value. The differences between bulls' semen fertility are both genetic and non-genetic (environment).

Semen Fertility measured the differences between bulls for conception rates.

Example
Bulls with higher Semen Fertility have slightly higher conception rates. In other words, inseminations with semen from these bulls are a little more likely to result in pregnancy.

Say the conception rate to first service is 50% using semen from a bull that is average for Semen Fertility (0 for Semen Fertility).

If you instead used semen from a bull at +2.0% for Semen Fertility, your conception to first service is estimated to increase to 52%, assuming all else remains the same.

Remember: the benefits of improved conception rates will be reduced if you have poor submission rates.

Most bulls (66%) ranged between +/- 2.5% for Semen Fertility. Extremes of the Holstein breed were -8% and +6%.

The ADHIS Board and Committees 2002/2003

ADHIS Pty Ltd Board of Management

Members: Dr Pat Rowley, Mr Allan Burgess, Mr Max Fehring, Mr Ivan Jones, Mr Max Roberts, Mr Peter Owen, Mr John McQueen (Secretary) and Mr Robert Poole (Executive Officer)

The Board met on several occasions during 2003 to consider recommendations from the various committees as well as all administrative and policy issues. The Board would like to sincerely thank all committee members who gave their time to advise and assist ADHIS.

Advisory Committee

Members: Bernie Harford (Genetics Australia), Graeme Gillan (ABS Australia), Jim Conroy (Herd Imp. Support Group), Leon Giglia (NHIA), Ken Phillips (Dairy Express), Bob Butler (CHISWA Group), Paul Quinlan (Ausherd/Tasherd), Stewart McRae (Mistro Group), Grant Monro, (HFAA), Scott Joynson (AJBS), James Hill (ARCBA/RDCA), ADHIS Board Members and staff.

The Advisory Committee met in June and November 2003. The Advisory Committee acts as the Board's main policy advisory body.

Genetics Committee

Members: Prof. Mike Goddard (Chairman, University of Melbourne), Dr Sandy McClintock (Consultant), Dr Mick Carrick (Victorian Institute of Animal Science), Dr Julius Van der Werf (University New England), Dr Frank Nicholas (Sydney University), Dr Mekonnen Haile-Mariam (University of Melbourne) and ADHIS staff.

This committee met in October 2003. Key areas for consideration included new models for fertility and cell count reliability, Interbull ABV(i)'s and proposals for additional calving ease information.

Records Standards Committee

Members: Mr Ivan Jones (Chairman), Mr John Stevenson (Dairy Express), Mr Peter Nish (Tasherd), Mr Frank Treasure (HISWA and CHISWA), Dr Mike Larcombe (GHI and Mistro), Mr Anthony Morrison (Western Herd Improvement, Ausherd), Mr Colin Ross (Consultant) and ADHIS staff.

This committee met in May 2003. Key issues included software accreditation, Data Interchange Format (DIF) changes, drug codes and withholding periods, data transfer schedules, production index (PI) factors and InCalf's Fertility Focus Report

Type Assessment Committee

Attendees: Mr Ivan Jones (Chairman), Neil Higham (Kiama) Mr Lyndon Cleggett (Guernsey Cattle Society of Australia), Mr Graeme Gillan (ABS Australia), Mr Darryl Brown (Alta Genetics), Mr Jim Conroy and Rohan Butler (Semex Australia), Mr Peter Thurn and Mr Bernie Harford (Genetics Australia), Mr Peter Williams (RAB Australia), Mr Michael Boyd (WorldWide Sires Australia), Mr Scott Joynson (Australian Jersey Breeders Society), Mr Grant Monro, Mr Sam Nichol and Bill Leggett (Holstein Friesian Association of Australia) and ADHIS staff.

This committee met in two separate meetings in the past twelve months, once with each the Holstein – Friesien Association of Australia and the Australian Jersey Breeders Society. The main items of discussion included a review of type data collection in 2002/2003 and the base used for reporting type ABV's.

Australian Herd Recording Statistics 2002/2003

Table 1 : National and State Totals and Production Averages

State	Herds and Cows Recorded					Production Averages					
	Number of Herds	Included in Averages	Excluded from Averages	Total Cows	Herd Size	Milk litres	Fat %	Fat kg	Protein %	Protein kg	Lactation Length days
Victoria	3,831	528,343	209,986	738,329	192.7	5,705	4.0	230	3.3	187	296
New South Wales	797	104,062	29,258	133,320	167.3	6,461	4.0	257	3.4	220	327
Queensland	602	38,497	40,076	78,573	130.5	5,550	4.1	225	3.4	189	327
South Australia	481	70,696	17,662	88,358	183.7	6,666	3.9	257	3.1	209	317
Tasmania	392	59,245	33,313	92,558	236.1	4,964	4.2	207	3.4	167	278
Western Australia	255	41,270	5,491	46,761	183.4	6,884	3.8	263	3.1	211	318
Australia	6,358	842,113	335,786	1,177,899	185.3	5,877	4.0	235	3.3	193	303
Victorian regions											
Northern	1,668	207,254	89,180	296,434	177.7	5,978	4.0	240	3.3	196	297
Eastern	1,244	187,243	53,975	241,218	193.9	5,411	4.0	218	3.2	174	293
Western	919	133,846	66,831	200,677	218.4	5,692	4.1	233	3.4	192	299
Table 1 : National Totals and Production Averages 1997 to 2003											
1997/98	7,292	897,799	78,271	976,070	133.9	5,254	4.1	213	3.3	171	298
1998/99	7,175	952,073	83,266	1,035,339	144.3	5,497	4.1	224	3.3	181	302
1999/2000	6,976	947,104	81,129	1,028,233	147.4	5,691	4.0	230	3.3	187	302
2000/2001	7,405	940,712	286,248	1,226,960	165.7	5,682	4.0	229	3.3	186	302
2001/2002	6,930	888,497	303,269	1,191,766	172	6,027	4.0	243	3.3	200	307
2002/2003	6,358	842,113	335,786	1,177,899	185.3	5,877	4.0	235	3.3	193	303

National Benchmark

There were an estimated 2.1 million dairy cows in Australia in 2002/2003. Of these about 1.17 million or 55% were individually herd-recorded.

Table 2: Number of Herds in Fat Production Categories by Region

State	Total Herds	Average Fat Production (kg per cow)									
		<125	125-149	150-174	175-199	200-224	225-249	250-274	275-299	300-324	>324
Victoria	3,831	82	121	233	438	543	535	401	230	94	55
New South Wales	797	6	19	37	82	98	156	126	118	65	36
Queensland	602	16	28	37	75	59	66	43	26	12	5
South Australia	481	10	14	25	33	52	88	98	65	29	24
Tasmania	392	3	24	41	58	66	43	30	7	10	3
Western Australia	255	1	1	4	12	30	44	59	63	21	14
Australia	6,358	118	207	377	698	848	932	757	509	231	137
Victorian regions											
Northern	1,668	39	45	100	171	227	280	221	139	60	33
Eastern	1,244	29	52	80	180	214	165	127	56	12	7
Western	919	14	24	53	87	102	90	53	35	22	15

All statistics are based on Australian herd recorded dairy cows in the 2002/2003 year. Source: ADHIS Pty Ltd

Table 3: Number of Herds in Protein Production Categories by Region

State	Total Herds	Average Protein Production (kg per cow)									
		<100	100-124	125-149	150-174	175-199	200-224	225-249	250-274	275-299	>299
Victoria	3,831	77	169	400	587	660	452	251	86	24	26
New South Wales	797	4	15	58	98	146	148	136	83	36	19
Queensland	602	11	27	59	82	77	61	37	7	3	3
South Australia	481	9	24	33	57	101	101	67	31	13	2
Tasmania	392	3	32	61	79	63	28	9	6	2	2
Western Australia	255	1	4	5	36	52	77	52	16	4	2
Australia	6,358	105	271	616	939	1,099	867	552	229	82	54
Victorian regions											
Northern	1,668	34	58	161	236	343	243	164	48	15	13
Eastern	1,244	29	79	159	233	215	137	52	13	2	3
Western	919	14	32	80	118	102	72	35	25	7	10

Table 4: Production Averages by Age Group

Age Group	Number of Cows	Production Averages					Lactation
		Milk litres	Fat %	Fat kg	Protein %	Protein kg	Length days
2 Year Old	138,827	5,067	3.94	200	3.23	164	306
3 Year Old	150,657	5,690	4.00	227	3.31	188	307
Mature Cow	552,629	6,132	4.02	247	3.28	201	301
Total	842,113	5,877	4.01	235	3.28	193	303

Table 5: Production Averages by Age Group and Mating Type

Age Group	Number of Cows	Average Fat (kg)		Average Protein (kg)	
		Artificially Bred Stock	Naturally Bred Stock	Artificially Bred Stock	Naturally Bred Stock
2 Year Old	138,827	204	186	168	151
3 Year Old	150,657	234	212	194	174
Mature Cow	552,629	260	228	212	185
Total	842,113	244	221	200	180

All statistics are based on Australian herd recorded dairy cows in the 2001/2002 year. Source: ADHIS Pty Ltd

National Benchmark

Average herd size increased from 172 to 185.3 cows per herd or 7.7% in 2002/2003. This was twice the increase of the previous year.

How do we decide which cows should be included in the statistics?

1. Cows are considered for inclusion in the statistics if;
   - they had a lactation that reached 305 days between July 1 and June 30 of the following year or
   - they were terminated between these dates and had not reached 305 days prior to July 1.
2. A cow is only counted once where;
   - the same data is supplied for the cow in more than one herd
   - more than one lactation record is supplied that satisfies the criteria.
3. There must be at least 30 cows in a herd in order for the cows to be included in the statistics.
4. Cows which pass the above tests are included in the total number of recorded cows and hence in the average herd size.
5. Cows are not included in the production averages if;
   - the termination date is less than the calving date
   - the lactation exclusion code is set to R indicating it should be rejected
   - the standard milk yield is not provided or yield is not valid
   - the first test date is before the calving date
6. Cows are automatically excluded from the production averages for any of the following reasons:
   - lactation length is less than 120 days
   - first test is more than 100 days after calving
   - heifer that calved at less than 18 months of age
   - interval between tests is greater than 150 days
7. The EXCLUDED category includes any cow that calved in the year of analysis and had the opportunity to reach 305 days or be terminated in that year.

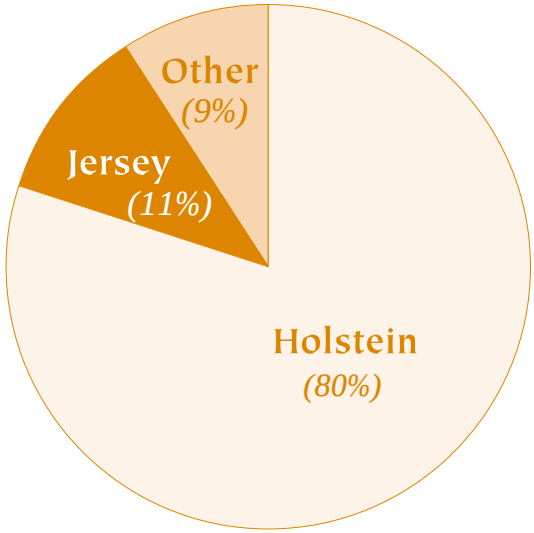
Table 6: Production Averages by Percentage of Artificially Bred Cows in Herds

Percentage of Artificially Bred Cows in Herd	Number of Herds	Production Average		
		Milk litres	Fat kg	Protein kg
< 10	890	5,049	205	166
10-19	302	5,202	209	171
20-29	346	5,413	211	173
30-39	356	5,680	226	185
40-49	411	5,789	230	189
50-59	566	5,812	233	191
60-69	697	5,991	240	197
70-79	811	6,137	245	202
80-89	871	6,176	246	201
> 89	1,108	6,172	248	202
Total	6,358	5,877	235	193

All statistics are based on Australian herd recorded dairy cows in the 2002/2003 year. Source: ADHIS Pty Ltd

National Benchmark

In 2002/2003, 72% of herd-recorded Holsteins and 69% of herd recorded Jersey's were bred via artificial insemination.



Proportion of cows by breed where breed is known

Table 7 : Production Averages by Breed

Breed	Number of Cows	Production Averages					Lactation Length days
		Milk litres	Fat %	Fat kg	Protein %	Protein kg	
Holstein	584,064	6,231	3.89	243	3.21	200	306
Jersey	81,594	4,520	4.87	220	3.73	169	295
Holstein/Jersey Cross	35,329	5,240	4.37	229	3.44	181	291
Guernsey	3,094	4,908	4.34	213	3.51	172	317
Ayrshire	5,415	4,900	4.06	199	3.30	162	296
Dairy Shorthorn	475	4,532	3.88	176	3.30	150	290
Illawarra	8,462	5,230	4.03	211	3.45	180	300
Unknown Breed	114,347	5,417	3.99	216	3.27	177	295
Simmental	275	6,281	3.89	244	3.24	204	303
Red Poll	20	4,549	3.89	177	3.22	147	266
Meuse-Rhine-Issel	12	6,740	4.32	291	3.47	234	322
Aust Milking Zebu	63	3,655	4.51	165	3.74	137	295
Commercial Dairy	16	5,074	4.09	208	3.15	160	263
Aust Red Breed	5,694	5,222	4.19	219	3.44	180	294
Brown Swiss	3,153	5,195	4.15	216	3.49	181	309
Aust Friesian Sahiwal	100	4,501	3.94	177	3.28	147	287
Total	842,113	5,877	4.01	235	3.28	193	303

Table 8: Production Averages by Month of Calving

Month of Calving	Number of Cows	% of Total	Production Averages					
			Milk litres	Fat %	Fat kg	Protein %	Protein kg	Lactation Length days
January	24,711	2.9	6,275	4.01	251	3.30	207	324
February	27,817	3.3	6,408	3.97	255	3.29	211	325
March	52,801	6.3	6,364	3.97	253	3.28	209	321
April	63,236	7.5	6,166	4.03	248	3.31	204	314
May	66,171	7.9	6,014	4.02	242	3.32	200	310
June	66,612	7.9	5,858	4.03	236	3.32	195	304
July	100,211	11.9	5,686	4.06	231	3.32	189	299
August	187,702	22.3	5,656	4.05	229	3.29	186	292
September	141,563	16.8	5,769	3.99	230	3.25	188	292
October	61,481	7.3	5,782	3.95	228	3.21	185	297
November	28,064	3.3	5,886	3.93	232	3.20	188	313
December	21,744	2.6	6,126	3.94	242	3.24	198	323
Australia	842,113	100	5,877	4.01	235	3.28	193	303

National Benchmark

51% of herd-recorded cows calved in the months of July/August/September in 2002/2003. This is down 1% from the previous year.

Table 9: Distribution of Calvings by Month and Region

State	Percentage Of Cows That Calved Each Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Victoria	1	1	5	7	8	9	14	27	19	7	2	1
New South Wales	8	8	11	9	8	7	9	11	9	8	6	6
Queensland	11	9	7	5	6	6	9	9	10	10	9	9
South Australia	5	7	10	9	8	6	9	13	12	8	6	5
Tasmania	1	1	4	6	4	3	8	35	28	8	2	0
Western Australia	11	10	10	9	8	7	7	7	8	7	7	8
Australia	3	3	6	8	8	8	12	22	17	7	3	3
Victorian regions												
Northern	1	1	5	7	4	2	6	32	26	10	3	1
Eastern	0	1	3	5	5	7	20	31	19	6	1	1
Western	1	2	5	10	19	22	17	11	7	3	1	1

All statistics are based on Australian herd recorded dairy cows in the 2002/2003 year. Source: ADHIS Pty Ltd

Table 10: Production Averages by Breed, Age Group, Mating Type and Registration

	Number of Cows	Production Averages					Lactation Length days
		Milk litres	Fat %	Fat kg	Protein %	Protein kg	
Holstein							
2 Year Old	104,477	5,304	3.82	203	3.17	168	308
3 Year Old	111,109	5,977	3.87	231	3.24	193	310
Mature Cow	368,478	6,570	3.92	257	3.22	211	304
Total	584,064	6,231	3.89	243	3.21	200	306
Artifically Bred	421,896	6,384	3.88	247	3.20	205	308
Naturally Bred	162,168	5,834	3.93	229	3.22	188	301
Pure Bred	84,290	7,258	3.82	277	3.20	232	330
Grade	499,774	6,058	3.91	237	3.21	195	302
Jersey							
2 Year Old	16,157	4,038	4.74	191	3.62	146	299
3 Year Old	15,963	4,420	4.85	214	3.74	165	296
Mature Cow	49,474	4,709	4.91	231	3.77	177	294
Total	81,594	4,520	4.87	220	3.73	169	295
Artifically Bred	56,385	4,688	4.84	227	3.73	175	297
Naturally Bred	25,209	4,143	4.91	203	3.73	155	292
Pure Bred	17,774	4,967	5.04	250	3.86	192	311
Grade	63,820	4,395	4.83	212	3.70	163	291
Holstein/Jersey Cross							
2 Year Old	6,748	4,539	4.29	195	3.37	153	295
3 Year Old	7,125	5,057	4.37	221	3.46	175	293
Mature Cow	21,456	5,522	4.39	243	3.46	191	290
Total	35,329	5,240	4.37	229	3.44	181	291
Artifically Bred	19,495	5,473	4.34	238	3.43	188	293
Naturally Bred	15,834	4,955	4.39	218	3.45	171	289
Pure Bred	0	0	0	0	0	0	0
Grade	35,329	5,240	4.37	229	3.44	181	291
Guernsey							
2 Year Old	471	4,632	4.30	199	3.43	159	325
3 Year Old	690	4,857	4.27	207	3.44	167	320
Mature Cow	1,933	4,993	4.40	220	3.57	178	313
Total	3,094	4,908	4.34	213	3.51	172	317
Artifically Bred	1,588	5,193	4.33	225	3.51	182	320
Naturally Bred	1,506	4,607	4.35	201	3.50	161	314
Pure Bred	1,101	5,249	4.39	230	3.56	187	325
Grade	1,993	4,719	4.29	203	3.46	163	312
Ayrshire							
2 Year Old	669	4,288	4.02	172	3.30	141	302
3 Year Old	915	4,629	4.03	187	3.28	152	297
Mature Cow	3,831	5,071	4.07	206	3.31	168	294
Total	5,415	4,900	4.06	199	3.30	162	296
Artifically Bred	2,978	5,125	4.09	209	3.30	169	301
Naturally Bred	2,437	4,624	4.03	186	3.32	153	289
Pure Bred	1,457	5,415	4.16	225	3.34	181	313
Grade	3,958	4,710	4.03	190	3.30	156	289

All statistics are based on Australian herd recorded dairy cows in the 2002/2003 year. Source: ADHIS Pty Ltd

Table 10: (continued)

	Number of Cows	Production Averages					Lactation Length days
		Milk litres	Fat %	Fat kg	Protein %	Protein kg	
Illawarra							
2 Year Old	1,220	4,629	3.92	181	3.34	154	313
3 Year Old	1,673	4,868	4.08	198	3.50	170	307
Mature Cow	5,569	5,471	4.08	223	3.49	191	295
Total	8,462	5,230	4.03	211	3.45	180	300
Artifically Bred	5,223	5,472	4.01	219	3.41	187	304
Naturally Bred	3,239	4,840	4.04	196	3.48	168	295
Pure Bred	3,607	5,598	4.04	226	3.49	196	305
Grade	4,855	4,957	4.03	200	3.42	169	297
Unknown Breed							
2 Year Old	7,329	4,760	3.98	190	3.25	155	299
3 Year Old	10,989	5,450	4.03	220	3.35	182	308
Mature Cow	96,029	5,463	3.99	218	3.27	179	294
Total	114,347	5,417	3.99	216	3.27	177	295
Artifically Bred	1,394	6,072	3.96	241	3.33	202	304
Naturally Bred	112,953	5,409	3.99	216	3.27	177	295
Pure Bred	0	0	0	0	0	0	0
Grade	114,347	5,417	3.99	216	3.27	177	295
Aust. Red Breed							
2 Year Old	1,085	4,444	4.16	185	3.39	150	295
3 Year Old	1,319	5,029	4.16	209	3.47	174	302
Mature Cow	3,290	5,556	4.21	234	3.46	192	291
Total	5,694	5,222	4.19	219	3.44	180	294
Artifically Bred	4,757	5,313	4.21	224	3.45	183	296
Naturally Bred	937	4,762	4.04	193	3.37	160	287
Pure Bred	536	7,124	4.12	294	3.48	248	312
Grade	5,158	5,024	4.18	210	3.42	172	292
Brown Swiss							
2 Year Old	569	4,562	4.02	183	3.37	154	318
3 Year Old	725	4,895	4.16	204	3.51	172	311
Mature Cow	1,859	5,506	4.17	229	3.50	193	305
Total	3,153	5,195	4.15	216	3.49	181	309
Artifically Bred	2,158	5,336	4.17	223	3.50	187	309
Naturally Bred	995	4,891	4.09	200	3.46	169	308
Pure Bred	495	5,618	3.95	222	3.51	197	324
Grade	2,658	5,117	4.19	214	3.48	178	306
Other Breeds							
2 Year Old	102	4,483	3.77	169	3.24	145	317
3 Year Old	149	4,939	4.01	198	3.46	171	295
Mature Cow	710	5,099	4.04	206	3.36	171	290
Total	961	5,009	3.94	197	3.31	165	293
Artifically Bred	553	5,295	4.04	214	3.39	180	295
Naturally Bred	408	4,621	3.96	183	3.32	153	292
Pure Bred	91	4,354	0.00	0	0.00	0	301
Grade	870	5,077	3.97	201	3.32	169	292

All statistics are based on Australian herd recorded dairy cows in the 2002/2003 year. Source: ADHIS Pty Ltd

Table 11: Production Averages of Stud Cows

Breed	Number of Cows	Production Averages					
		Milk litres	Fat %	Fat kg	Protein %	Protein kg	Lactation Length days
Holstein	84,290	7,258	3.82	277	3.20	232	330
Jersey	17,774	4,967	5.04	250	3.86	192	311
Guernsey	1,101	5,249	4.39	230	3.56	187	325
Ayrshire	1,457	5,415	4.16	225	3.34	181	313
Illawarra	3,607	5,598	4.04	226	3.49	196	305
Aust Red Breed	536	7,124	4.12	294	3.48	248	312
Brown Swiss	495	5,618	3.95	222	3.51	197	324
Total	109,260	6,777	4.03	270	3.33	223	326

Table 12: Production Averages of Artificially Bred Stud Cows

Breed	Number of Cows	Production Averages					
		Milk litres	Fat %	Fat kg	Protein %	Protein kg	Lactation Length days
Holstein	65,257	7,369	3.81	280	3.20	236	331
Jersey	12,962	5,139	4.99	256	3.85	198	311
Guernsey	730	5,478	4.36	239	3.55	194	329
Ayrshire	909	5,555	4.16	231	3.31	184	317
Illawarra	2,225	5,851	4.00	234	3.45	202	308
Aust Red Breed	488	7,200	4.12	296	3.48	250	313
Brown Swiss	359	5,696	3.96	226	3.53	201	325
Total	82,930	6,935	4.01	274	3.31	228	327

All statistics are based on Australian herd recorded dairy cows in the 2002/2003 year. Source: ADHIS Pty Ltd

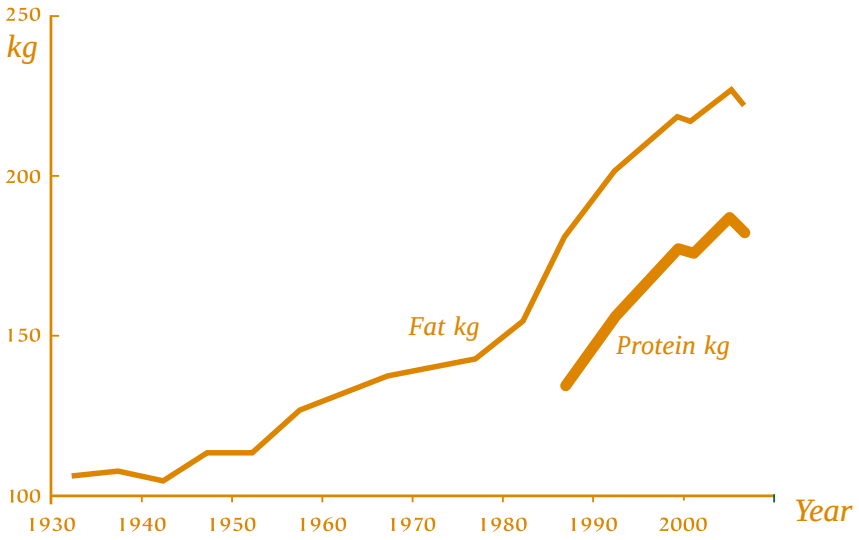
Australian Herd Recording Statistics 2002/2003

Table 13: Victorian Production Averages 1930/1931 - 2002/2003

Year	Total Herds	Total Cows	Herd Size	Production Averages				
				Milk litres	Fat %	Fat kg	Protein %	Protein kg
1930/1935	2,984	91,328	31	2,295	4.7	107		
1935/1940	2,324	80,883	35	2,210	4.9	108		
1940/1945	1,082	39,368	36	2,154	4.9	105		
1945/1950	2,329	90,015	39	2,301	5.0	114		
1950/1955	3,192	141,387	44	2,284	5.0	114		
1955/1960	3,461	187,306	54	2,485	5.1	126		
1960/1965	4,003	248,791	62	2,643	5.0	132		
1965/1970	5,041	368,300	73	2,793	4.9	137		
1970/1975	4,314	382,925	89	2,942	4.7	139		
1975/1980	2,456	256,744	105	3,159	4.5	143		
1980/1985	3,913	423,120	108	3,471	4.5	155		
1985/1990	4,399	527,240	120	4,047	4.4	180	3.3	134
1990/1991	4,402	568,885	129	4,245	4.4	186	3.4	142
1991/1992	4,061	517,760	128	4,477	4.4	196	3.4	150
1992/1993	4,293	552,445	129	4,708	4.4	205	3.4	158
1993/1994	4,606	604,160	131	4,962	4.3	212	3.3	166
1994/1995	4,591	574,674	125	4,976	4.2	210	3.3	164
1995/1996	4,685	606,198	129	5,142	4.2	215	3.3	169
1996/1997	4,928	619,470	126	4,984	4.2	208	3.3	163
1997/1998	4,328	624,428	144	5,084	4.1	208	3.3	167
1998/1999	4,156	641,106	154	5,350	4.1	220	3.3	177
1999/2000	3,904	622,281	159	5,570	4.1	227	3.3	184
2000/2001	4,267	761,219	178	5,527	4.0	223	3.3	182
2001/2002	4,198	757,029	180	5,969	4.0	240	3.3	198
2002/2003	3,831	738,329	193	5,705	4.0	230	3.3	187

All statistics are based on Australian herd recorded dairy cows in the 2002/2003 year. Source: ADHIS Pty Ltd

Victorian Production Averages



National Benchmark

The protein production of Victorian herd-recorded cows decreased by approximately 5.5% in 2002/2003 compared to the previous year. This result in-part reflects the poorer seasonal conditions and economic pressures.

Australian Proven

Publishable Holsteins: Top 50 APR with semen available

Rank	Bull ID	Bull Name	Gene Codes	APR	Rel	ASI	Prot	Prot%	Milk	Fat	Fat%	Rel	No. Dtrs.	No. Herds	RIP%	Over Type	Mam Syst	Rel	Lwt kg	Milk Spd
1	NLDBOUDEWIJN	HOLIM BOUDEWIJN	TLCV	154	89	124	22	0.28	254	60	0.71	96	335	107	31	0.4	0.3	93	-18	95
2	DONOR	ELITE MOUNTAIN DONOR IMP (E.T)	TV	149	97	123	38	0.20	1024	30	-0.19	99	7393	1303	24	0.7	0.6	98	20	95
3	NLDAPOLLO	HOLIM APOLLO	TLCV	142	91	126	22	0.22	392	68	0.74	97	353	91	13	0.1	-0.1	92	1	93
4	PRINCIBUL	SELECT GIBBON PRINCIBUL-ET		138	69	122	31	0.29	576	36	0.16	77	49	29	24	0.1	0.4	68	11	93
5	NINEFOLD	KEYMER NINA WINLUKE	TL	134	79	114	31	0.13	893	44	0.08	87	83	53	8	1.2	0.7	69	-2	94
6	GGMALOY	MALOY	TLTV	134	97	112	22	0.47	-120	26	0.44	99	1161	294	12	0.4	0.6	97	-9	95
7	1H0882	DIRIGO-LEBLANC JAZZMAN-ET		126	89	86	14	0.18	178	45	0.53	97	412	78	16	0.2	0.5	87	-16	93
8	LANCEDAVE	KAPAWAI LANCE DAVE	TV	121	80	75	18	0.18	294	25	0.18	90	80	38	16	0.1	0.4	72	-30	95
9	MUIZON	MUIZON		119	77	111	33	0.24	747	25	-0.10	85	51	28	7	0.0	-0.1	74	6	93
10	ANVIL	STIRLING MAGLEY ANVIL	TV	118	76	112	34	0.23	792	25	-0.12	86	66	38	16	0.2	0.4	74	-11	92
11	CAREY	MARION DALE CAREY	XI	117	89	104	35	0.07	1148	31	-0.25	95	228	113	26	-0.4	-0.2	82	-19	92
12	GOLDBULLION	ELITE GOLD BULLION-IMP-ET	TV	117	76	101	30	0.07	984	37	-0.07	87	60	27	11	0.8	0.8	70	10	95
13	MUDLARK	GLENORD EASTLAND BENJAMIN	TCTV	117	78	87	19	0.16	392	37	0.29	86	80	44	10	-0.4	-0.5	71	-7	94
14	MGMAJOR	EBONY PARK MG MAJOR-ET	TV	116	74	101	27	0.21	597	29	0.05	82	73	34	17	0.2	0.0	72	-15	95
15	RAMESES	LOCHAVON RAMESES	TCTV	115	87	105	31	0.06	1052	41	-0.06	93	216	111	45	0.1	-0.2	82	2	94
16	ALTAJUSTIFY	DIRIGO JUSTIFY-ET		115	84	97	27	0.13	749	33	0.02	92	122	54	10	0.1	0.0	83	-43	94
17	STINGER	TOP DECK MAGLEY DENNIS-ET	TV	114	77	96	30	0.16	807	23	-0.17	87	67	35	19	-0.1	0.7	76	-47	92
18	EXCHANGE	GLOMAR FATAL LANCE-ET	TLTVXI	114	77	89	20	0.31	143	20	0.21	85	74	43	4	0.2	0.7	68	-20	92
19	GIBBON	GIBBON	TV	113	93	96	34	0.17	930	12	-0.40	97	194	81	10	0.5	0.3	94	15	91
20	ABSGALE	AULDREEKIE MAUGHLINS GALE-ET	TV	112	71	90	25	0.12	689	30	0.01	79	56	20	19	0.8	0.7	73	20	95
21	LORDFARGO	CLYDEVALE LORD FARGO-ET	TV	111	83	101	26	0.17	643	35	0.11	90	129	65	10	0.4	0.3	78	10	94
22	LORDPRES	CLYDEVALE LORD PRESTO-ET	TV	111	82	69	25	-0.11	1165	32	-0.26	89	98	47	8	1.2	1.0	77	2	95
23	IDEALAGS	IDEAL AGS	TLTV	109	91	92	23	0.17	535	33	0.14	97	482	110	21	1.5	1.5	93	8	90
24	MAYHEM	BUSSLO MAGLEY WARRIOR ET	CV	106	79	93	27	0.20	616	21	-0.07	88	84	41	17	0.4	0.6	79	-28	93
25	RICHFIELD	LOCHAVON RICHFIELD-ET	TCTV	106	73	85	19	0.22	288	29	0.24	81	71	28	32	1.0	0.7	73	-8	94
26	GGBASAR	BASAR	TLTV	105	92	97	26	0.08	821	40	0.07	97	330	129	14	0.7	1.2	95	6	88
27	FERDINAND	TANGORIN FERDINAND-ET		104	72	93	32	0.04	1091	28	-0.26	80	62	29	16	0.2	0.2	74	10	92
28	NUCLEAR	ELITE MASCOT DYNAMIC - ET	TV	104	98	75	26	0.11	733	14	-0.25	99	5581	1090	18	1.1	1.1	98	17	93
29	RANYO	TOPSPEED ROYAL RANYO-IMP-ET	TV	103	80	91	27	0.19	617	20	-0.09	89	76	51	6	0.2	0.2	75	-12	92
30	FATAL	FATAL	BLCV	102	96	89	28	0.30	455	4	-0.22	98	276	90	11	0.8	1.1	97	1	95
31	TILLER	TARINKA PARK FATAL DEATH-ET	TLTVTC	102	81	89	25	0.22	485	21	0.01	89	108	59	6	1.3	1.2	72	20	94
32	FILTRATE	EUREKA FILTRATE-IMP-ET	TV	102	85	77	15	0.32	-56	18	0.30	92	131	61	9	0.8	0.7	81	3	91
33	ALTAFRANCO	ALLORA AUBEL GIAN FRANCO		101	71	91	20	0.33	87	22	0.27	80	36	15	19	0.6	0.5	76	10	92
34	JAYJUMP	ELMAR JAY JUMPER	TCTV	101	78	82	18	0.07	524	43	0.30	85	93	48	9	0.6	1.0	76	-11	94
35	TAIPAN	EAGLE RIDGE TAIPAN	TV	100	80	73	20	0.22	311	13	-0.01	89	95	60	6	0.2	0.6	65	-22	94
36	HOLADINO	LADINO PARK TALENT-IMP-ET	RCTL	100	81	61	26	0.09	779	0	-0.48	88	95	42	25	1.9	2.1	85	26	97
37	MAGLEY	PETICOTE US MSC MAGLEY-ET	CV	99	98	99	28	0.33	383	14	-0.04	99	2498	546	12	0.5	0.8	97	-5	94
38	GRAVITA	CARENDA GRAVITY	TV	99	83	90	21	0.12	537	41	0.26	90	108	59	15	1.1	1.0	77	8	94
39	PANTHERET	GLENMAR PATRON PANTHER	TV	99	70	81	25	0.01	906	33	-0.08	77	53	23	20	0.8	0.9	70	-4	95
40	MONTECARLO	RENGAW FATAL MONTECARLO ET	TLTV	98	78	84	29	0.08	932	20	-0.29	86	76	33	5	-0.6	0.0	73	-13	93
41	TRINITY	BELMONT MASCOT TRITON		97	83	71	22	0.18	475	10	-0.15	90	104	62	9	0.4	0.5	76	-14	93
42	TOLEDO	RENGAW MANHATTAN TOLEDO-ET		96	81	80	27	0.03	964	24	-0.24	87	81	35	9	-0.2	-0.3	77	-16	92
43	CANDOMINATE	JACANDA DOMINATOR-ET		95	72	97	29	0.15	760	28	-0.07	79	57	29	24	0.3	0.1	75	-11	94
44	MATEMAN	LOCHAVON MATEMAN	XI	95	83	89	25	-0.05	1049	48	0.05	90	127	65	39	0.0	-0.3	78	-9	89
45	GRANSEC	ELMAR GRAND SECRET	TCTL	95	96	88	22	0.14	550	34	0.16	99	3005	750	20	-0.1	0.1	95	-4	92
46	ALLORA	HILL VALLEY MASCOT ASTRONAUT ET	CV	95	99	69	17	0.09	479	29	0.12	99	10380	1692	17	0.6	0.5	99	-13	94
47	NOBILIS	NOBILIS		94	74	83	27	0.25	526	5	-0.25	84	58	23	31	0.1	-0.1	74	9	94
48	WINSOME	EUREKA WINSOME-IMP-ET	TV	93	88	89	23	0.19	483	26	0.08	94	164	87	16	0.1	0.2	85	-9	92
49	ALTABINGO	DE CROB BINGO		92	79	77	21	0.12	537	27	0.06	88	93	35	12	0.6	0.5	86	0	94
50	NLDROYAL	ZANDENBURGER ROYAL	CV	92	95	77	12	0.27	-74	30	0.47	98	726	187	20	0.1	-0.2	95	-7	90

"To be listed a bull must have semen readily available for sale and have a publishable production, workability and type ABV."

Temp	Like	Rel	CC %	Rel	DTR Fert	Rel	Survival	Calving Ease
95	96	88	3	92			1	6
93	96	99	1	99	0	67	5	9
93	93	90	-24	93			3	
94	94	71	-42	66			0	
93	95	79	5	81			4	
94	94	95	19	98	4	81	0	5
91	93	84	-14	93			5	
91	94	74	-35	79			2	
90	94	72	-3	72			1	
91	94	75	13	71			-1	
92	95	87	-1	92	1	65	0	5
94	95	67	-6	76			2	5
93	96	77	0	80			4	
94	94	77	21	73			2	
93	96	81	18	90	-2	59	3	8
94	95	79	18	84			1	
92	93	76	25	71			1	
93	94	76	-19	78			2	
94	95	94	-33	94	-3	57	2	7
92	95	60	-16	69			5	
95	95	84	18	85			3	
95	96	82	-10	83			5	
93	94	90	-10	94			2	
93	95	81	10	75			-1	
95	94	79	-24	71			2	
92	95	89	-27	93			3	
94	95	74	-14	69			1	
93	95	99	-3	99	3	94	4	7
93	94	78	13	79			1	
93	95	94	19	96	-2	77	4	6
94	96	82	8	84			4	4
93	93	83	3	86			2	
94	94	64	10	59			3	
94	95	84	-3	77			2	
94	95	77	-6	85			0	
94	96	81	-3	76			8	
94	95	98	49	99	1	93	0	5
91	96	80	16	85			5	9
93	94	74	-17	66			2	
95	94	78	16	79			1	
95	94	77	0	85			1	
92	94	76	-19	82			2	
92	95	72	45	69			1	
93	94	75	-13	85			2	4
93	95	98	-3	99	0	69	-1	4
94	95	99	-23	99	-1	94	2	3
93	95	66	5	67			1	
92	92	86	17	90	0	57	1	2
92	95	78	10	74			3	
91	92	95	-7	97	1	78	2	4

Table 1:
Requirements for Official Publishable ABV status

	Holstein/Jersey		Other Breeds	
Trait	Reliability Minimum	Herds Minimum	Reliability Minimum	Herds Minimum
Production (APR)	63%	15 herds	40%	5 herds
Workability	57%	10 herds	40%	5 herds
Survival	25%	N/A	25%	N/A
Type	55%	10 herds	40%	5 herds
Liveweight	60%	10 herds	40%	5 herds
Somatic Cell Count	50%	15 herds	30%	5 herds
Calving Ease	60%	10 herds	N/A	N/A
Daughter Fertility	55%	10 herds	30%	5 herds

Reliability is a measure of the amount of information contributing to the ABV. The more daughters, test-days and information about relatives that is included in a bull's ABV, the higher the reliability. To receive a publishable APR a bull must have publishable production ABVs.

Gene Codes: Holsteins

	Tested Positive	Tested Negative
Complex Veterbral Malformation (CVM)	CV	TV
BLAD	BL	TL
Citrullinaemia	CN	TC
DUMPS	DP	TD
Mulesfoot	MF	TM
Red Carrier	RC	
Factor XI	XI	TX

Overseas Bulls

Interbull ABV(i)'s: August 2003: Top 50 APR Holsteins with semen available

	Name	Defect Codes	Bull ID	ABV(i) for production traits APR	Rel	ASI	Prot	Prot%	Milk	Fat	Fat%	Rel	No. of Countries	1st Country
1	TOP DECK KO PIERRE		PIERRE	145	52	139	37	0.20	966	51	0.14	72	1	NZL
2	JANZE MOUN	TV	JANZE	145	63	113	32	0.22	744	32	0.00	73	1	FRA
3	WHINLEA MAGLEY EXTASY	TV	EXTASY	144	57	135	33	0.34	571	40	0.23	77	1	NZL
4	SRC TIROHANGA PM APACHE		NZLAPACHE	133	56	124	35	0.17	955	42	0.01	74	1	NZL
5	COOPON-I DECADE			125	51	123	28	0.26	545	47	0.34	66	1	NLD
6	VANZETTI VALENT. RAUL ET TL	TV		122	44	133	45	0.09	1472	38	-0.36	57	1	ITA
7	ORPHIN		GDORPHIN	122	52	107	32	0.22	772	24	-0.13	63	1	FRA
8	LANCELOT			121	48	115	31	0.18	795	40	0.09	61	1	DEU
9	GLENMEAD R E HOLIDAY	CV	NZLHOLIDAY	117	48	114	30	0.24	653	35	0.10	73	1	NZL
10	BAGWORTH ZANDER KEET	TV	NZLKEET	114	56	103	17	0.27	106	48	0.62	76	1	NZL
11	COGENT COURIER ET		CBCOURIER	113	54	112	42	0.06	1437	23	-0.56	71	1	GBR
12	MARGRIET		MARGRIET	113	56	94	24	0.18	521	33	0.15	69	1	FRA
13	MACINA CEL			111	53	105	32	0.14	917	31	-0.12	69	1	FRA
14	COASTLINE OTAKEHO KNOCKOUT		NZLCOASTLINE	111	51	95	27	0.19	617	25	-0.03	71	1	NZL
15	GIBOR		GGGIBOR	108	52	81	28	0.12	780	15	-0.26	62	1	DEU
16	DE CROB DYNASTY		ALTADYNASTY	107	51	114	32	0.18	819	36	0.02	65	1	NLD
17	SRD JENERAYTIONS BANQUET			107	51	101	26	0.40	170	13	0.09	77	1	NZL
18	HOLIM NLD GIBON LIONEL-ET		ABSHOLIM	107	62	92	29	0.26	569	10	-0.20	77	1	NZL
19	HOLIM NLD KNOKOUT HOAX-ET			106	50	99	33	0.15	924	21	-0.27	76	1	NZL
20	HOLIM CASSA		ALTACASSA	106	63	88	25	0.15	639	26	-0.03	79	2	NLD
21	RAIMON	TLTV	GGRAIMON	106	71	81	21	0.11	560	31	0.10	74	4	DEU
22	NADJA			105	52	103	34	0.13	1020	23	-0.29	68	1	FRA
23	MARONI EVR			105	54	101	30	0.12	884	32	-0.08	70	1	FRA
24	LANUGO CEL			105	54	100	26	0.07	831	45	0.14	70	1	FRA
25	BAGWORTH MOWBERRY KEET		NZLMOWBERRY	105	55	100	22	0.31	207	28	0.28	73	1	NZL
26	NACTIF			105	51	87	31	0.15	833	12	-0.34	67	1	FRA
27	O-BEE MANFRED JUSTICE-ET			103	49	95	27	0.07	860	38	0.02	63	1	USA
28	NOULET GIB			103	51	92	31	0.10	966	22	-0.28	67	1	FRA
29	NEWLOOK		NEWLOOK	103	55	92	26	0.21	571	22	-0.04	67	1	FRA
30	JARGOL	TV	JARGOL	103	59	81	23	0.06	756	32	-0.01	70	1	FRA
31	LIFFRE JAB			102	53	109	26	0.21	536	42	0.28	69	1	FRA
32	WHINLEA EMINENCE		NZLELLIS	102	48	92	16	0.33	-63	32	0.49	73	1	NZL
33	NASRAM			102	47	91	34	0.07	1116	17	-0.44	60	1	ITA
34	LLANGOWER FATAL MAKO	TV	NZLMAKO	101	55	87	29	0.18	729	12	-0.27	75	1	NZL
35	MAGNUM ESE			100	51	95	22	0.20	436	35	0.23	67	1	FRA
36	DD NLD KNOCKOUT FELIX ET		NZLFELIX	100	46	86	25	0.20	533	19	-0.06	68	1	NZL
37	GLENMEAD HAILSTONE	CV	NZLHAILSTONE	99	55	102	24	0.29	302	30	0.24	81	1	NZL
38	KIAN			98	53	91	16	0.33	-73	31	0.50	67	1	NLD
39	HAZAEL FATALS DUKE	TV	NZLTHEDUKE	98	57	80	26	0.22	538	7	-0.22	78	1	NZL
40	JESTHER		GDJESTHER	98	60	69	27	-0.03	1061	18	-0.39	72	2	CSK
41	GEREMJO		NLDGEREMJO	97	55	84	17	0.29	52	25	0.33	68	1	NLD
42	EMERALD-ACR-SA T-DAWSON		CRIDAWSON	97	51	81	29	0.05	973	20	-0.31	66	2	USA
43	LOCATOR			97	53	81	19	0.24	252	21	0.15	69	1	FRA
44	NUTRI			96	52	96	27	0.07	873	37	0.00	68	1	FRA
45	OISSEL KNO			96	47	92	31	0.12	901	21	-0.25	62	1	FRA
46	ALMERE PERICLES			96	53	88	16	0.12	369	50	0.49	68	1	NLD
47	JOCKO BESN		JOCKO	95	61	95	33	0.09	1055	23	-0.32	78	6	FRA
48	NAFNAF			95	51	81	21	0.23	339	18	0.06	67	1	FRA
49	OKENDO			94	46	76	27	-0.10	1208	33	-0.27	60	1	FRA
50	BAGWORTH LANCE CAMELOT	TV	NZLCAMELOTA	94	56	47	6	0.17	-100	21	0.36	76	1	NZL

To be listed a bull must have semen readily available for sale and have a publishable production ABV(I).

ABBREVIATIONS

Production ABV's in this brochure

APR	Australian Profit Ranking
ASI	Australian Selection Index
Milk	milk production ABV
Fat	fat production ABV
Fat%	fat per cent ABV
Prot	protein production ABV
Prot%	protein per cent ABV
Rel	reliability of production ABV
RIP%	Records in Progress % (percentage of 2 year olds that have 3 or less test days)
CC (%)	Cell Count ABV (percentage change)
Dtrs	Daughters (refers to total daughters)
Dtr Fert	Daughters Fertility ABV

Type ABV's in this brochure

Over Type	Overall Type ABV
Mamm syst	Mammary System ABV

Overseas Bulls

1st Dtrs	Over Type	Mam Syst	Rel	LWT (Kg)	CC %	Rel
78	0.5	0.7	59	-8		
751	-0.4	-0.1	61	-15	-13	74
120	0.1	0.3	60	-11		
82	-0.6	-0.4	64	-21		
86	0.2	0.4	59	-3	1	61
70	0.9	0.5	54	22	4	51
51	0.8	0.4	52	33	-25	57
132	0.7	0.6	58	23	-1	55
75	0.3	0.2	62	-24		
86	0.4	0.1	64	-8		
96	1.1	1.0	65	6	15	54
101	0.7	0.6	56	-8	-16	66
97	0.1	0.3	55	-28	0	67
55	0.4	0.6	60	-22		
90	0.6	0.5	54	-7	-35	58
111	0.8	0.7	59	3	9	60
118	-0.1	0.2	64	-32		
127	0.6	0.8	65	6		
118	0.1	0.5	61	-33		
91	0.3	0.2	60	-9	0	63
6227				-6	69	
96	0.2	0.1	57	0	-19	64
140	-0.4	-0.4	57	-18	1	68
124	0.1	0.1	58	-3	-15	69
73	-0.2	-0.1	64	-16		
81	0.6	0.5	55	17	-31	63
178	0.2	0.2	60	27	-16	49
86	0.6	0.4	56	13	-11	63
80	0.0	-0.1	55	22	-22	63
99	0.1	0.2	57	4	27	68
95	-0.2	-0.1	57	-18	-2	67
74	-0.7	-0.4	62	-37		
76	1.1	0.5	58	10	-28	54
71	1.1	1.4	62	-2		
79	-0.1	-0.2	51	9	-11	64
44						
632	0.2	0.2	66	1		
198	-0.2	0.2	61	-8	-9	67
113	0.1	0.4	67	-25		
263	0.4	0.4	56	8	-3	67
118	0.6	0.5	59	22	-19	66
79	0.8	0.5	61	6	-10	56
87	0.1	0.0	55	-15	-20	66
93	-0.1	0.1	57	-4	-8	64
48	0.6	0.6	51	4	-11	56
188	0.4	0.6	62	2	-30	65
9080	0.9	0.9	75	22	-4	76
80	0.1	-0.1	54	8	-34	62
43	0.5	0.6	50	-12	-9	56
71	-0.5	-0.4	63	-33		

Australian Proven Bulls

Bulls in this section have sufficient Australian information for an official production ABV. For Holsteins and Jerseys this is a minimum 63% Reliability (about 25 daughters) in at least 15 Australian herds (see the Reliability Table for more details).

Most of the bulls in this section are progeny tested in Australia.

Others are overseas bulls that have reached 85% reliability in at least 40 Australian herds. This is the level required for overseas proven bulls, before they reach official ABV status. The aim is to ensure a wider unbiased ABV for bulls that are not randomly progeny-tested in Australia.

Because conditions for Australian dairyfarming are different to other countries, having an official ABV, based mainly on Australian information, is generally the best measure of genetic merit in Australia.

Overseas Bulls

Bulls in this section have little or no Australian information. The Interbull Centre provides their ABV(i). Using known links created by the bulls that are proven in more than one country, Interbull generate customised breeding values for each member country.

The ABV(i) is the best estimate of a bull's genetic merit when proven under Australian conditions.

Because Interbull customises the international proof into ABV units, the ABV(i) can be compared directly to an ABV. This is in contrast to a home country proof, say from the North America or Europe, which cannot be compared to ABV's in any way. ABV(i)'s are available for production and type.

Generally ABV(i)'s have lower Reliability than an ABV because there is usually some reranking when a bull obtains its official Australian ABV. The Reliability is a measure of the risk of reranking and should be taken into account when you make your semen selection.

(Note: many more type traits are assessed by ADHIS. Please ask your AB centre or ADHIS if you want the full linear type assessment).

Lwt (kgs) Liveweight ABV kilograms

REL Reliability for the type ABV's & liveweight ABV

Workability ABV's in this brochure

Milk Spd Milking Speed

Temp Temperament

Like Likability

Interbull

No. of Countries Number of countries with information contributing to the ABV(i)

1st Country The country with first contributing daughters.

1st Dtrs Number of daughters in first country.

Publishable Jerseys: August 2003: Top 20 APR with semen available

Rank	Bull ID	Bull Name	APR	Rel	ASI	Prot	Prot%	Milk	Fat	Fat%	Rel	No. Dtrs	No. Herd	RIP%	Over Type
1	SSPRIDE	ERRLYN SS PRIDE GR	162	79	160	34	0.12	826	81	0.68	89	93	43	19	0.5
2	NZLCASPER	PARKWOOD CASPER	149	91	119	24	0.08	582	64	0.62	97	455	84	16	0.8
3	FLOWERPOWER	CLAYDON PARK FLOWER POWER	145	84	121	38	-0.05	1176	39	-0.46	91	109	39	9	1.5
4	NZLFJORD	VAN DER FITS FJORD GR	144	91	125	19	0.41	-7	59	1.12	97	388	77	13	0.6
5	ACEBEVAN	BURNWOOD ACE BEVAN	142	80	141	33	0.38	461	42	0.32	89	92	40	10	0.2
6	OUTINFRONT	LIGHTWOOD LEDA	142	80	113	36	0.03	1018	29	-0.48	87	106	50	14	1.9
7	ARMADA	KINGS VILLE ARMADA	141	85	124	33	0.10	830	43	-0.03	91	119	51	8	0.7
8	JEPERIMETER	ROCK ELLA PERIMITER	140	88	122	28	0.41	278	31	0.31	95	144	52	27	1.3
9	7J442	ROCK ELLA PARAMOUNT-ET	135	87	107	32	0.02	918	33	-0.32	94	131	46	6	1.5
10	JEAPACHE	FLEURIEU APACHE	134	79	119	41	-0.16	1430	35	-0.78	87	77	30	15	0.4
11	7J254	MASON BOOMER SOONER BERRETTA	131	98	96	32	0.19	694	7	-0.57	99	1709	291	11	1.6
12	DNKFYNLEMVIG	FYN LEMVIG	129	91	115	22	0.36	152	44	0.67	97	294	74	11	1.7
13	EXCEPTIONAL	SILHOUETTE EXCEPTIONAL	127	76	120	23	0.52	-37	35	0.70	83	78	31	16	0.6
14	MADCAP	WHITE STAR MADCAP	125	80	91	22	0.28	279	22	0.14	87	111	46	14	1.1
15	ASTOUND	MOLLY BROOK BERRETTA FABULOUS	122	95	89	29	-0.04	910	24	-0.47	99	1079	332	15	2.8
16	FAXALL	ALL LYNNS BERRETTA FELIX	122	84	82	28	-0.26	1181	35	-0.54	90	95	42	6	0.7
17	ALTAFLICA	CRESCENT JUSTA FLICA	120	80	134	25	0.51	38	47	0.85	90	87	27	20	-0.7
18	LANDLINE	ECHO GLEN ALDER	118	84	119	36	-0.02	1072	39	-0.35	90	110	54	10	1.1
19	NOORAT	GLENPAR PHANTOM -ET	118	82	116	42	0.01	1211	18	-0.89	90	95	46	18	1.0
20	11J0627	MOLLY BROOK BERRETTA FAIR -ET	118	84	113	35	0.09	905	25	-0.44	93	116	53	18	1.8

"To be listed a bull must have semen readily available for sale and have a publishable production, workability and type ABV."

Interbull Jerseys ABV(i)'s: August 2003: Top 20 APR with semen available

			ABV(i) for production traits									
	Name	Bull ID	APR	Rel	ASI	Prot	Prot%	Milk	Fat	Fat%	Rel	No. of Countries
1	WILLIAMS ACE OF HEARTS	NZLHEARTS	168	54	165	29	0.59	41	65	1.18	74	1
2	ROYALS GREEN KRACKA GR	KRACKA	161	56	143	38	0.22	820	43	-0.02	77	1
3	WILLAND ADS SAMUAL	NZLSAMUAL	160	55	157	32	0.36	449	64	0.75	77	1
4	CRESCENT ACE OF SPADES	NZLSPADES	153	55	150	37	0.14	905	59	0.19	74	1
5	MITCHELLS LIKABULL SJ3	NZLLIKABULL	145	53	162	39	0.32	708	54	0.29	75	1
6	OKURA DOYLES IMRAN GR	NZLIMRAN	142	52	144	30	0.35	389	57	0.68	74	1
7	DEBOER JENETTA BARBER BILL	11JE00699	139	53	112	35	-0.14	1219	42	-0.45	71	2
8	ALCISTON CHARLIES LAD	NZLLAD	138	49	143	30	0.24	564	61	0.59	76	1
9	GLENARIFF PASCO	NZLPASCO	133	52	138	34	0.11	844	56	0.20	77	1
10	WHELDON HYDE SJ3	NZLHYDE	130	58	116	27	0.18	541	45	0.31	78	1
11	CRESCENT SHARIF	SHARIF	121	61	118	29	0.07	762	49	0.15	82	2
12	JAS TEKNO		121	48	115	27	0.13	627	47	0.24	61	1
13	DAVISON BERRETTA FREELANCE	JEFREELANCE	121	65	98	29	0.01	846	31	-0.27	84	2
14	MOLLY BROOK BERRETTA FUTURE	14J306	120	59	90	26	0.19	520	16	-0.22	71	1
15	MOLLY BROOK POSEIDON ADVENTURE	1J2012	118	48	115	31	0.03	857	44	-0.04	65	1
16	BW PARADE-ET	7J472	117	60	106	33	0.09	846	24	-0.41	69	1
17	CHEERS JOY OMEGA GR	NZLOMEGA	115	49	127	32	0.18	679	44	0.14	75	1
18	WILSONVIEW KHAN MORGAN	CRIMOR	114	51	99	30	-0.08	984	37	-0.29	62	1
19	WINDY WILLOW MONTANA JACE	7J535	113	56	91	27	-0.16	997	42	-0.22	69	1
20	FERREIRA GOLDENS JERRICK	JERRICK	112	51	98	27	0.04	733	35	-0.08	66	1

To be listed a bull must have semen readily available for sale and have a publishable production ABV(I).

Publishable Red Breeds: August 2003: Top 10 APR with semen available

Rank	Bull ID	Bull Name	APR	Rel	ASI	Prot	Prot%	Milk	Fat	Fat%	Rel	No. Dtrs	No. Herds	RIP%	Over Type
1	ARBPATRICK	BOSGOWAN PATRICK	156	67	109	27	0.16	689	44	0.20	77	55	28	32	-0.1
2	TORP882	TORPANE 882	155	91	97	20	0.11	536	51	0.40	98	400	79	14	-0.8
3	TBRUNO	T BRUNO 907	152	85	102	30	0.06	999	40	-0.04	95	220	58	12	-0.5
4	ARBLORIKEET	LOUVIC LORIKEET	150	67	104	23	0.17	528	46	0.34	76	51	28	29	-0.6
5	ARBXTRA	ARAJARRA KITTYS EXTRA	141	82	112	28	0.36	320	24	0.15	93	172	75	20	
6	UDDEN3151	UDDEN 3151	134	85	103	26	0.22	537	33	0.15	93	191	48	14	-0.3
7	ARBLAWRENCE	BOSGOWAN LAWRENCE	129	74	94	24	0.19	499	31	0.14	83	83	39	27	0.0
8	STENSJO3319	STENSJO 3319	123	83	105	26	0.04	890	54	0.23	93	179	38	25	0.1
9	ARBSEVERN	BOSGOWAN SEVEN UP	122	81	74	25	-0.07	1051	35	-0.15	88	104	43	13	0.1
10	ARBTOILER	REDWAY TOILER	121	81	86	26	0.17	605	21	-0.07	89	113	48	7	-0.8

To be listed a bull must have semen readily available for sale and have a publishable production ABV.

Top 5 APR™ Publishable Guernsey

Rank	Bull ID	Bull Name	APR	Rel	ASI	Prot	Prot%	Milk	Fat	Fat%	Rel	No. Dtrs	No. Herds	RIP%	Over Type	Mam Syst
1	GU0117	PINE RIDGE LUCY'S IDEA	110	68	90	22	0.12	590	37	0.24	84	41	18	2	0.2	0.2
2	GU0123	EBY MANOR BUTTERMOST WARDEN	76	55	52	9	0.10	166	28	0.47	81	32	21	12		
3	GU0119	BROWN EDEN TRADITION	58	61	66	18	0.08	515	23	0.00	83	31	18	9		
4	USADIVIDEND	OLD HOMESTEAD DIVIDEND	58	60	45	21	-0.37	1220	28	-0.64	83	40	12	15		
5	KOYUGA	ROCHFORD PARK BIG BOY	39	58	41	18	-0.16	830	15	-0.53	79	29	18	24		

Australian Proven

Mam Syst	Rel	LWT (kg)	Milk Spd	Temp	Like	Rel	CC %	Rel	Dtr Fert	Rel	Survival
0.2	82	22	92	92	94	79	13	76			1
0.1	93	18	93	94	94	92	-23	94			3
1.2	81	9	94	94	95	82	12	84			4
0.5	89	8	93	92	93	92	-19	93	1	56	1
0.4	82	7	92	92	93	82	-3	77			-1
1.0	75	6	90	93	94	85	-17	79			5
0.5	75	18	92	95	95	84	1	87	0	57	3
0.1	89	19	94	93	95	76	21	87	1	55	4
0.6	85	1	95	91	94	77	12	87	2	55	5
0.2	69	-6	92	94	96	74	4	81			1
1.2	97	-10	94	91	95	98	21	99	3	94	6
1.2	91	11	93	91	94	89	13	92			5
0.1	79	8	95	94	94	80	28	74			2
0.7	81	-15	92	93	93	84	-14	80			4
2.1	95	1	89	97	97	95	20	97	-1	63	8
0.6	79	-3	95	93	94	80	-14	85	2	58	4
0.1	75	-18	93	92	93	72	22	80			-2
0.7	76	11	92	91	92	84	1	87	-1	56	1
0.3	68	3	88	90	93	78	6	83	0	55	2
1.0	79	-7	90	92	94	73	43	85			4

Overseas Bulls

1st Country	1st Dtrs	Over Type	Mam Syst	Rel	Lwt (Kg)	CC %	Rel
NZL	81	0.4	0.5	60	5		
NZL	94	1.5	1.1	53	9		
NZL	93	-0.1	-0.1	60	0		
NZL	83	0.8	0.5	61	15		
NZL	96	0.5	0.3	59	27		
NZL	66	-0.5	-0.1	55	2		
NLD	58					-13	60
NZL	81	0.8	0.5	58	19		
NZL	103	-0.1	-0.1	60	24		
NZL	106	0.2	0.3	61	-12		
NZL	421	0.7	0.3	63	4		
DNK	82	1.0	0.7	51	10	-12	66
CAN	110	1.2	0.7	52	4	14	58
USA	259	2.4	1.9	64	3	20	58
USA	64	1.2	1.0	53	-5	18	45
USA	84	2.0	1.4	60	21	-1	53
NZL	66	-0.1	0.1	56	30		
USA	27	1.0	0.9	52	-2	-17	46
USA	104	1.8	1.4	59	22	-10	53
USA	91	0.7	0.7	57	-13	1	46

Australian Proven

Mam Syst	Rel	LWT (kg)	Milk Spd	Temp	Like	Rel	CC %	Rels	Dtr Fert	Rel	Survival
0.1	47	-14	89	95	93	72	-39	66			3
-0.6	79	-30	95	91	92	88	-35	95	4	72	4
-0.7	59	-24	93	93	93	86	-30	91	4	60	2
-0.5	55	-15	92	92	91	69	-38	65			2
			93	93	93	79	20	89	0	62	4
-0.5	79	1	88	88	91	81	-46	88			1
-0.3	65	8	92	92	93	80	-39	73			2
-0.3	76	-10	93	92	92	84	7	84			1
0.0	79	-51	94	91	92	80	-10	82			3
-0.5	69	-15	93	89	91	81	-35	84	4	43	0

Australian Proven

Rel	LWT (kg)	Milk Spd	Temp	Like	Rel	CC %	Rels	Dtr Fert	Rel	Survival
50	-6					13	69			3
						-16	61			
						25	60			0
										2
		89	91	91	40	-5	58			

The Australian Profit Ranking

The APR is an index that uses ABV's to estimate a ranking that identifies those bulls that produce the most profitable daughters. ADHIS will continue to produce ABV's for all individual traits and the ASI. This provides dairyfarmers with the option to select on ASI or other combinations of traits. The APR has its own Reliability measure. Note that the APR reliability will usually be lower than that of production.

Australian Profit Ranking (APR) =
(3.8 x Protein ABV) + (0.9 x Fat ABV) - (0.048 x Milk ABV) + (3.9 x Survival Index) + (1.2 Milking Speed ABV) + (2.0 x Temperament) – (0.34 x Cell Count ABV) – (0.26 x Liveweight ABV) + (3.0 x Daughter Fertility ABV)

Note: Type traits and likability are part of the survival index. For traits other than production, the figure used in APR is the bull's ABV minus the breed average.

The ASI contributes the production aspects to APR and makes up about 70% of the index weight.

The ASI formula is:
New ASI = (3.8 x Protein ABV) + (0.9 x Fat ABV) - (0.048 x Milk ABV)

Cow survival is an important part of farm profit. Cows that milk through to maturity maximise their production potential, reduce replacement costs and provide the farmer with the opportunity to increase genetic gain by heavier culling on production. In APR a Survival Index is used to estimate survival.

Survival Index = (0.25 x Survival ABV) + (0.38 x likability + 1.34 x Overall Type + 2.30 x Udder Depth + 1.66 x Pin Set)

Daughter Ferility ABV's have been added to the APR formula. Each one percent change in 6-weeks or 100 day in-calf rate is worth $3.00 to net profit of APR.

An example of how to use the APR:

- Say a bull has an APR of 120. This means that based on his ABV's, the daughters of this bull are estimated to be $120 more profitable per year than the ABV base (cows born 1995). To estimate the result of a planned mating, you take half the contribution of the bull (only half the genes come from the bull) i.e. $60 contribution to profit via genetic change in the next generation. If the next bull on the list is 110 APR, there is an estimated $10 per cow per year difference between the profitability of the two bulls, based on contribution to genetic change.

- Say this bull has an APR Reliability of 80%. This indicates the possibility of some change as the bull adds more daughters and information to his ABV's. Note the reliability for APR is lower than production due to the inclusion of non-production traits in the APR.

- The APR and ASI are in the same units: profit dollars per cow per year.

- Say this bull has an ASI of 100 based on new ASI = 3.8 x protein ABV + 0.9 fat ABV – 0.048 milk volume ABV. By comparing ASI (100) to APR (120), you can see that the non-production traits are adding 20 points ($20) to the predicted profitability of these daughters. In other words, for this bull, the non-production traits are better than breed average and are adding to the profitability of the daughters. The contribution of production to APR is via the ASI. ADHIS will continue to publish all the individual production ABV's so that you can use these as selection tools if required.

Top Herds Summary

Top 2% Herd Average ABV'c based on ASI in August 2003 - Holstein Con'd

Owner Name	Address	No of current Cows in average	ASI ABV	Prot% ABV	Prot% ABV	Milk ABV	Fat% ABV	Fat% ABV	ASI Rank
PERRETT, RJ & HE	KONGWAK	169	71	26	-0.01	970	22	-0.28	1
TILLER G	YANKALILLA	39	66	20	0.03	671	26	-0.04	2
SHONE & SHEEDY	BEEAC	43	53	17	0.03	574	18	-0.10	3
KENNEDY, R & M	SALE	265	50	15	0.05	465	18	-0.03	4
CLIFFORD, J. & P.	COLAC	238	49	17	0.01	590	17	-0.13	5
COCHRANE, W & K (DIF)	ROCHESTER	44	49	10	0.08	228	24	0.20	5
ANDERSON, WR & BL	KONGWAK	258	48	15	0.03	499	18	-0.05	7
PAGE, N. & M.	SCOTTS CREEK	49	48	16	-0.01	608	17	-0.12	7
Warnock J & E	LONGWARRY	48	48	14	0.04	449	17	-0.03	7
PARRISH TJ & LR	BARRENGARRY	203	46	11	0.07	277	18	0.10	10
TURNER, G & J (NHT)(MF)	TRAFALGAR	204	45	14	0.04	430	15	-0.05	11
THORNE G.D. & L.M. (PCF)	KATANDRA	334	45	13	0.03	421	17	-0.01	11
A.W. & E.G. DRAYTON	TIMBOON	59	45	17	-0.03	692	15	-0.22	11
KITCHEN J M SONS	BOYANUP	327	44	12	0.06	307	16	0.04	14
GLASGOW, DC & EJ	BENA	104	43	13	0.02	466	16	-0.06	15
WHITE, R.P. & L.J.	TIMBOON	36	43	12	0.09	249	12	0.03	15
DUNN KA & BJ	KYABRAM	59	43	14	0.02	471	16	-0.06	15
MASON JC & MA	PORTLAND	104	42	11	0.02	355	21	0.09	18
JOHNSTON, RSN & LJ	BUNDALAGUAH	467	41	12	0.05	351	14	-0.02	19
FLEMMING G.M. & P.E. (MOFW)	FINLEY	273	40	12	0.03	380	14	-0.04	20
ROACHE PV & RA	TERANG	95	40	13	0.01	452	15	-0.06	20
TWITE R.K. & M.R.	NATHALIA	58	39	10	0.03	296	19	0.09	22
MATTHIES, DJ & HM	MARDAN	136	39	10	0.06	270	14	0.03	22
TAYLOR, K.,E.A. & M.J.	BARWON DOWNS	30	39	10	0.05	265	16	0.07	22
DEPPELER EL & AM	YINNAR SOUTH	73	39	10	0.02	329	18	0.06	22
BEAUMONT B & V (DIF)	DORRIGO	57	39	12	0.01	431	15	-0.05	22
GARNER, ND & MA(MF)	COWWARR	200	38	11	0.03	353	15	0.00	27
VAN DE BURGT, PT & JJ	YARRAGON	61	38	10	0.06	268	13	0.02	27
HEYWOOD, BO & LD (NHT)	YARRAGON	183	38	10	0.05	272	15	0.05	27
COSTER NJ	LONGWARRY	306	38	10	0.05	279	14	0.03	27
ROBERTS DI & PJ	YARRAGON	167	38	11	-0.02	444	19	0.00	27
NOLAN FAMILY TRUST	NUMURKAH	34	38	13	-0.01	478	15	-0.08	27
EAGLE R & K (DIF)	FINLEY	232	38	12	0.00	425	16	-0.04	27
FRAHN PA & FT	MANNUM	54	38	10	0.01	363	18	0.04	27
J.W. & J.C. LAMBALK.,	TIMBOON	350	37	10	0.06	246	12	0.02	35
COSTER B & M	RIPPLEBROOK	408	37	11	0.04	317	14	0.00	35
FEHRING B.N. NO 1.	LEITCHVILLE	122	36	8	0.09	112	12	0.11	37
MOSCRIPT, JB, ME, CJ & JM	LEONGATHA SOUTH	165	36	12	-0.03	481	18	-0.04	37
CASTLE, GG&RM & AH&SL	BENA	36	36	9	0.07	202	12	0.06	37
CLISSOLD, G.P. & B.C.	BEEAC	96	36	10	0.04	304	14	0.02	37
LENEHAN P	CROSSLEY	65	36	11	0.01	401	13	-0.06	37
RYAN BJ & PM	GRASMERE	252	36	9	0.05	250	13	0.04	37
HOGG, A & J (DIF)	CORRYONG	148	36	8	0.08	134	16	0.14	37
MAXWELL P A & H R	MYPONGA	132	36	12	-0.03	507	16	-0.09	37
VALENCIA VALLEY FARMS (1)	VALENCIA CREEK	214	35	9	0.07	193	12	0.06	45
NARDINO P, J & P (MF)	YINNAR	375	35	10	0.04	283	13	0.01	45
WILD R.A.	TALLANGATTA	165	35	10	0.04	267	13	0.02	45
WALDER RG & CA	PORTLAND	160	35	9	0.04	266	14	0.04	45
MCINNES, R.D. & E.K (DIF)	CORRYONG	122	35	9	0.05	222	14	0.07	45
CARKEEK ID & DJ	WAAIA	123	35	8	0.05	197	15	0.09	45
KENNY, J.M. & G.B. & SONS	CORROROOKE	140	34	11	0.03	340	11	-0.05	51
MEADOW PARK	LONGWARRY	173	34	9	0.05	219	13	0.06	51
CLIFFNEY PARK PARTNERSHIP	TERANG	82	34	11	0.02	357	13	-0.04	51
WILLCOCKS P & I	YANKALILLA	193	34	10	0.02	331	14	0.00	51
WHITE, RA & MA (MF)	BOISDALE	58	33	8	0.04	232	14	0.06	55

Top Herds Summary

Top 2% Herd Average ABV'c based on ASI in August 2003 - Holstein Con'd

Owner Name	Address	No of current Cows in average	ASI ABV	Prot% ABV	Prot% ABV	Milk ABV	Fat% ABV	Fat% ABV	ASI Rank
HENRY, W, M & T	TINAMBA	544	33	9	0.03	285	12	-0.01	55
HANSFORD, RA & FE (MF)	VIA BAIRNSDALE	35	33	11	-0.01	438	13	-0.09	55
OWEN, PS & JM	DRIFFIELD	130	33	9	0.04	250	12	0.01	55
HOOPER K.J.	COHUNA	149	33	9	0.05	231	12	0.03	55
SAGE, RA & FR	LEONGATHA	132	33	7	0.07	145	13	0.10	55
FOOTE, BW & JA	POOWONG	177	33	9	0.02	284	14	0.03	55
BAKER PARTNERSHIP	COBDEN	262	33	8	0.06	177	13	0.09	55
VANDENBOSCH, J.H. & C.A. CPD	LOCKINGTON	149	33	9	0.01	321	14	0.00	55
Bryan AS & TL	SMITHTON	148	33	7	0.08	114	11	0.09	55
Dornauf IA & JJ	MOLTEMA	164	33	7	0.10	83	10	0.10	55
BERRYMAN S.J & L.E	YARRAM	94	32	9	0.02	304	14	0.01	66
LIA, TO & PM PTY LTD	NILMA NORTH	234	32	10	-0.02	434	15	-0.05	66
MABIN, GF & ME	WONTHAGGI	227	32	9	0.02	307	14	0.01	66
VEENSTRA, F. & K.A.	SWAN MARSH	138	32	7	0.08	99	11	0.10	66
ZARRO, ANDY	TIMBOON	163	32	10	-0.01	389	14	-0.04	66
MEADE JF & MB	TERANG	155	32	11	-0.04	490	15	-0.09	66
M.T. & B.L. GLENNEN,	TERANG	42	32	10	0.06	260	8	-0.05	66
HANKS DJ & TJ	STONEY CREEK	360	32	9	0.02	291	14	0.03	66
WILLIAMS TE & HD	MURCHISON	172	32	10	0.04	281	11	-0.02	66
SPENCER, C.F. & H.M.	KOTUPNA	164	32	9	0.03	257	14	0.04	66
HAINES, GN, A, I &M (DIF)	KOTTA	245	32	8	0.04	194	14	0.08	66
SOWTER MJ	MOSS VALE	123	32	11	-0.03	450	15	-0.06	66
JENKINS, MC & EA	SALE	36	31	9	0.05	213	10	0.01	78
PRICE I.H. & S.W. (MOFW)	HUON	234	31	7	0.05	176	13	0.08	78
LAWRY A K & P M (MOFW)	DINGEE	506	31	8	0.05	191	12	0.06	78
BILLING PARTNERSHIP	KORUMBURRA	198	31	9	0.02	304	12	-0.02	78
I.J. & A.E. LOCK.,	TIMBOON	439	31	8	0.02	282	14	0.03	78
THORP RD	FOREST TAS	92	31	8	0.09	134	7	0.02	78
AULT G.K. & J.M. (DIF)	ROCHESTER	157	31	9	-0.02	384	16	0.00	78
LITTLE, J & G	MAFFRA	203	30	8	0.03	228	13	0.05	85
WEATHERLEY, RJ & EA (MF)	NEWRY	83	30	7	0.06	154	12	0.08	85
MCRAE, SA & NM (MF)	SALE	207	30	7	0.04	175	13	0.08	85
WOOD, WJ & JM	BUNDALAGUAH	153	30	8	0.05	200	10	0.02	85
MOORHOUSE P.J. & J.G.	STRATHMERTON	184	30	10	0.00	394	10	-0.09	85
GORDON R.K. & J.R. (MOFW)	COHUNA	282	30	8	0.03	265	12	0.01	85
DOUGLAS J.W. & V.L.	LEITCHVILLE	480	30	7	0.05	178	13	0.07	85
KENNEDY R.G. & P.D. (PCF)	TALLYGAROOPNA	171	30	9	0.02	268	11	0.00	85
GLASGOW, PW	BENA	197	30	9	0.04	253	10	-0.01	85
WELLER, WH & JF P/L	LONGWARRY	711	30	7	0.05	160	13	0.09	85
AG /JJ /DP GALE,	TIMBOON	592	30	8	0.01	291	14	0.02	85
LE'RIDGE PTY. LTD.,	TIMBOON	250	30	9	0.03	279	10	-0.02	85
BROWN, M.P. & S.J.	WYELANGTA	148	30	8	0.04	201	12	0.04	85
WALLACE TH PJ AND WG	ELLINBANK	203	30	9	0.01	322	12	-0.03	85
GOULD MJ CPD	KATUNGA	133	30	8	0.05	196	11	0.04	85
JILBA PAST CO.	TATURA	206	30	6	0.06	110	13	0.12	85
FULLARD, G.B.	BAMAWM	159	30	8	0.04	199	12	0.05	85
LEE C.A. & J.M.	COHUNA	194	30	7	0.03	192	15	0.11	85
KENNEDY JK & AM	MACLAGAN	143	30	8	0.05	180	11	0.05	85
Batty CG & CJ	MAWBANNA	232	30	8	0.04	204	11	0.03	85
Wilson GR,VJ & DC	YOLLA	216	30	6	0.06	126	13	0.10	85

Top Herds Summary

Top 2% Herd Average ABV'c based on ASI in August 2003 - Jersey

Owner Name	Address	No of current Cows in average	ASI ABV	Prot% ABV	Prot% ABV	Milk ABV	Fat% ABV	Fat% ABV	ASI Rank
ROWLEY, GA & SA	NEWRY	32	57	20	-0.15	794	21	-0.41	1
MCMANUS B.T.& C.A.	BAMAWM	126	57	14	0.07	322	20	0.06	1
WORBOYS, R. & A. (DIF)	ECHUCA	139	57	16	0.02	435	20	-0.06	1
BARTON R G, D E & W L	NORMANVILLE	113	55	16	0.00	464	18	-0.13	4
HUNTER FAMILY DAIRY P/L DIF	KYABRAM	134	54	15	0.03	387	20	-0.02	5
THORN G C & S J	WILLUNGA	129	53	17	-0.03	534	17	-0.21	6
PEKIN JF, A & JG	TERANG	34	51	13	-0.03	431	23	-0.01	7
GLENNEN & CO C	NOORAT	489	50	12	0.05	278	20	0.10	8
MURRAY, D. & J.	LARPENT	154	49	15	-0.04	495	17	-0.18	9
HOEY D.M. & L. (MOFW)	KATUNGA	243	48	12	0.04	307	17	0.01	10
PLATT, TA & R	MAFFRA	87	48	15	-0.10	573	21	-0.18	10
ROACHE PV & RA	TERANG	92	48	13	0.02	368	17	-0.06	10
DICKSON BJ & JL	TERANG	64	48	14	-0.03	455	19	-0.11	10
TUTTLEBY A & K	DROUIN WEST	129	48	13	0.05	315	15	-0.04	10
PEACE PARTNERSHIP (MOFW)	LEITCHVILLE	31	47	14	-0.03	455	19	-0.11	15
SORTINO C & A	KATUNGA	37	47	18	-0.18	766	19	-0.42	15
MORGAN FARM ENT (DIF-DISK)	NUMURKAH	33	47	15	-0.16	667	22	-0.26	15

Top 2% Herd Average ABV'c based on ASI in August 2003 -Red Breeds

Owner Name	Address	No of current Cows in average	ASI ABV	Prot% ABV	Prot% ABV	Milk ABV	Fat% ABV	Fat% ABV	ASI Rank
Ayrshire									
MORRIS R.M. & L.A. (MOFW)	COBRAM	79	35	11	-0.04	477	20	-0.01	1
Illawarra									
RIGGS & SONS DH	COOROY	30	51	13	0.08	337	19	0.06	1
ANDERSON G & M	GYMPIE	30	39	10	0.03	307	18	0.07	2
HEFFERNAN RT, JA(MOFW)	GUNDOWRING	82	25	8	-0.02	338	13	-0.02	3
Australian Red Breed									
GRAHAM RW & BC	NOWRA	173	75	18	0.13	438	30	0.16	1
WALTHAM, GV & JL	GLENGARRY	132	67	16	0.11	354	28	0.19	2

Top 2% Herd Average ABV'c based on ASI in August 2003 -Guernsey

National Herd ID	Owner Name	Address	Postcode	No of Cows on file	No of current cows	ASI ABV	Prot ABV	Prot% ABV	Milk ABV	Fat% ABV	Fat% ABV	ASI Rank
N00130O	LEE H & S	KEMPSEY	2440	173	33	21	7	-0.02	257	8	-0.09	1
N00317Q	EVERETT MJ & JA	GLOUCESTER	2422	342	53	21	6	0.00	215	8	-0.04	1

Countdown Downunder 2003- improving milk quality and profitability

Milk cell counts show that Australian milk quality is world class – and still improving. Countdown Downunder reports a downward trend in Herd Milk Cell Counts since this statistic was established five years ago to monitor the status of the national herd.
Cells in milk are a result of mastitis (an infection of the udder) and are used internationally as a measure of milk quality. Dairy companies and markets pay premium prices for milk with a lower cell count.

Herd Milk Cell Counts are reported annually for all milk recording herds on each test day (where the cell count of each herd is calculated as the volume weighted average of individual cow cell counts). This data is sourced from the same population of cows used by ADHIS to report annual production figures. The consistency and high quality of the data makes Herd Milk Cell Counts a reliable way of monitoring change in cell counts over time.

The reduction in Herd Milk Cell Count over the past five years is significant. A greater proportion of supply is below the Australian industry thresholds (table) and the average cell count has decreased (graph).

More Herd Milk Cell Counts are now below Australian industry thresholds

Year	HMCC below 400,000 cells/mL	HMCC below 250,000 cells/mL
July 2002 – June 2003	94%	73%
July 1997 – June 1998	89%	63%

For the 2003 fiscal year, the arithmetic average cell count was 196 cells per millilitre and the (back-transformed) geometric average was 78 cells per millilitre. Lowering of the cell count indicates improved mastitis management in the Australian dairy herd.

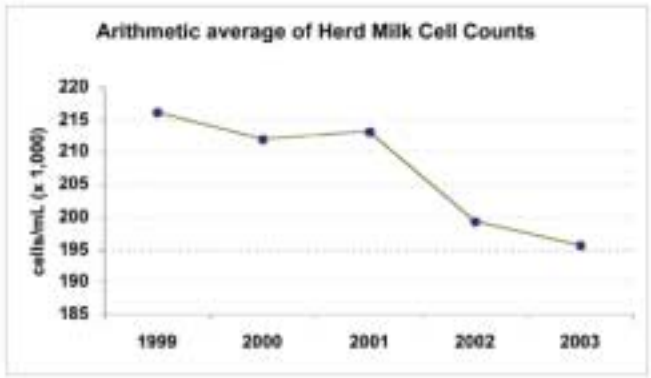
Dairy farmers and dairy companies directly benefit from lower cell counts through better herd health and gains in production efficiencies at both the farm and factory.

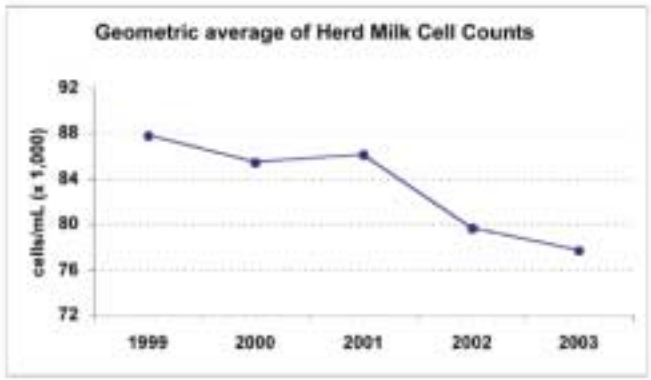
Over the last year Countdown Downunder has modelled the economics associated with mastitis control to compare profitability for different farm mastitis control strategies.

Dollars are gained from better udder health because there is more milk (higher production and less discarded) and it is sold at higher prices. There are fewer cows that require treatments and fewer cows to cull because of mastitis. To achieve this some dollars are spent on preventing infections. The outcome of investment in mastitis control must be assessed as the net of all these factors calculated over a period of time. Countdown's research shows that Australian herds can achieve net gains with lower annual average Herd Milk Cell Counts – right down to very low figures.

Countdown Downunder is developing practical and accessible tools and services for mastitis management so milk supply at the farm gate continues to be world class in terms of quality and profitability.

The average cell count of the Australian dairy herd is reducing





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Countdown Downunder

DAIRY AUSTRALIA

National Herd Improvement Association

The National Herd Improvement Association of Australia Inc. (NHIA) is the industry representative body for herd improvement providers and suppliers in Australia. NHIA is an Incorporated Association managed by a Board of Directors elected by the Members. Currently the Board comprises Mr Leon Giglia, Chairman, Mr Peter Semmens is Deputy Chairman and Messrs Christian Hickey, Terry Moloney, Jim Norcott, and Gordon Stewart comprise the remainder of the Board.

NHIA has placed much emphasis on providing its Members with products and services which they are generally either unable to source for themselves or not at the rates achievable centrally. Such products and services include Liquid Nitrogen, Fuel and Motor Vehicles. These products are facilitated through NHIA to its members at specially negotiated rates which reflect both central sourcing and the volumes involved. NHIA is also able to assist its members with their insurance and industrial needs.

NHIA has taken on many industry responsibilities including the development of Codes of Practice and Accreditation Programs for Professional AI Technicians and Semen & Embryo Handlers. These programs have been developed in response to industry requests and are proving most effective in ensuring a continual improvement in industry standards and professionalism. Current initiatives include the development of standards for Pregnancy Diagnosis by Ultrasound and projects to improve access to and utilisation of industry data.

NHIA has also taken a leading role in developing benchmarks for industry safety. One such activity has been the development of a Prudent Practice Policy Paper for the Carriage and Handling of Liquid Nitrogen in Small Containers. This document has been widely accepted in the industry as a most useful paper.

Dairy Herd Improvement Fund

DHIF
DAIRY HERD IMPROVEMENT FUND

The Dairy Herd Improvement Fund (DHIF) is a unique State based Research and Development (R&D) Fund which is focussed towards facilitating R&D for dairy herd improvement in the State of Victoria.

For many years the funds were raised by a modest levy on the annual dairy farm licences paid by Victorian dairy farmers. However, at the time of deregulation the United Dairyfarmers of Victoria (UDV) determined to no longer support herd improvement research through the DHIF. As a transition measure, for the first two years after funding ceased, the Fund Manager has been able to arrange for approximately 50% of prior revenue to flow to DHIF from the Geoffrey Gardiner Foundation for expenditure on projects consistent with previous Fund activity. The transition period is now complete.

In the longer term the DHIF is unlikely to maintain sufficient funds to remain viable. In the short term the Fund is being run down by the judicious use of reserves supplemented by modest royalty revenues from patents.

In recent years the DHIF has been responsible for a number of significant R&D projects including:

- The development of an affordable generic in-line milk meter in conjunction with the Milking Research Centre at Ellinbank in Victoria. This development has been commercialised and is now available to Australian dairy farmers.

- The development of an accreditation program for professional AI technicians. This program is offered commercially and attests to a participant's theoretical understanding and knowledge of all aspects of professional AI insemination and incorporates a stringent practical examination. Graduates of the program, through their certification, provide assurance to their employers and comfort to their customers that they have exceeded set minimum standards agreed by industry for professional AI technicians. To date some 215 professional AI technicians have successfully completed the accreditation program.

- The development of a Code of Practice for the Handling of Semen and Embryos. This program has recently been completed and provides a set of minimum industry standards for this important work. The Code provides for organisations to undertake to comply with minimum standards and for them to have accredited the relevant staff that work with semen and embryos. The first assessment has been conducted, with the first organisations having received Certificates of Compliance and a number of individuals have been accredited.

- Research towards improved cow fertility and survival in the herd using data from industry sources to develop ABV's for the above traits. Fertility and survival are two major issues for the Australian dairy industry. The project seeks to better utilise industry data to provide producers with useful information that will assist them to select sires that will contribute towards an overall improvement in fertility and survival.

- The provision of seed funding for a major project to seek to describe and produce solutions to overcome the 'Phantom Cow Syndrome'. The syndrome severely limits the achievement of 75% in calf rates at six weeks in seasonal mating herds. Subsequent to the DHIF investment in this project funds have been gained from the Commonwealth which will permit a full investigation being undertaken into this major herd fertility problem.

A more comprehensive listing of projects and reports may be found at the NHIA/DHIF Website www.nhia.org.au