

Australian Dairy Herd Improvement Scheme

Australian Dairy Herd Improvement Report



1999-2000



ADHIS is supported by:



Contents

1999/2000 NHIA Chairman's Foreword	2
1999/2000 ADHIS Chairman's Foreword	3
Dairy Industry Overview 2000	4
Report on ADHIS Activities in 2000	5-8
Australian Herd Recording Database	9
Australian Herd Recording Statistics 1999/2000	10-17
Countdown Downunder: Progress Toward National Goals	18
Top Herds Summary	19
August 2000 Bull Average ABVs™	20
Reasons why cows do not get ABVs™	21
Dairy Herd Improvement Fund	22-23
August 2000 Bull ABVs™	24-25

ADHIS Pty Ltd ABN 97 006 475 378
Level 6, 84 William Street, Melbourne, Vic 3000 Australia
Tel: 61 3 9642 8042 Fax: 61 3 9642 8166 Email: rpoole@adhis.com.au

National Herd Improvement Association of Australia Inc. Reg. No. A0008711E
3/21 Vale Street, North Melbourne, Vic 3051
Tel: 61 3 9329 1688 Fax: 61 3 9328 3092 Email: nhia@nhia.org.au

Photos courtesy: Australian Dairyfarmer Magazine

Produced and Printed by Metro Printing
188 Johnston Street, Collingwood Vic 3066 Ph: (03) 9419 6699

1999/2000 Australian Dairy Herd Improvement Report – Foreword



This important statistical publication is brought to you by the National Herd Improvement Association of Australia Incorporated (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 was financed jointly by DHIF and ADHIS.

The Australian Dairy Herd Improvement Report provides a great deal of information, useful to every farmer and other industry groups. This year, once again, copies of the report will be made available to herd improvement stakeholders all over Australia as well as providing a most useful industry resource for international visitors, researchers and others. The contributors to 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. The new distribution arrangements for Victorian dairy farmers reflect changing priorities by the key industry body in an environment of deregulation and change.

NHIA is a strong supporter of the Australian Dairy Herd Improvement Report and it is a great pleasure to welcome this, the second publication. ADHIS, through its programs and computing facilities makes national statistics available to industry and, for the purpose of this report, a co-operative approach has been taken with ADHIS to ensure the provision of a broader spread of information than previously.

Australian herd recording participation in 1999/2000 amounted to 6,976 herds and 947,104 cows under test. National average milk

production was 5,691 litres per cow, 230 kgs butterfat, 187 kgs protein and average lactation length was 302 days.

It is disappointing that a greater percentage of Australia's farmers do not participate in herd recording particularly in view of the economic benefits demonstrated to accrue to farmers by the Australian Bureau of Agricultural and Resource Economics study commissioned by the DHIF a few years ago. With the advent of stricter milk quality requirements by the industry, together with associated incentives, the levels of herd recording participation may begin to improve for economic reasons.

The herd improvement industry is facing a number of challenges and opportunities following the deregulation of the market milk industry. The States that were most reliant on the premium revenue from market milk potentially face a substantial restructuring process as lower overall returns at the farmgate impacts on producers. There is considerable speculation as to the likely extent of such restructuring, which will be somewhat softened by industry readjustment payments. Nevertheless, there is a strong expectation that there will be reduced number of dairy farms in the future, with those that remain tending to become larger operations. Concurrently, segments within the herd improvement industry are exploring the potential for benefits through industry restructuring and rationalisation.

New herd management technology such as electronic animal identification systems, together with the imminent availability of a more affordable in-line electronic milk meter will assist farmers in the management of larger enterprises where the number of cows per labour unit on farms also continues to increase.

Jakob Malmo
Jakob Malmo
NHIA Chairman

1999/2000 Australian Dairy Herd Improvement Report – Foreword



In this foreword, in last year's report, I wrote how important it was that key areas of industry continue to be managed and developed, even though the issue of deregulation dominated dairyfarmer's thinking.

While 1999/2000 will be remembered by most as the

final year of a regulated industry, this report is here to remind you that those in the herd improvement industry were busier than ever.

ADHIS in particular is working hard to maintain one of the world's most effective genetic evaluation systems. Much of this starts at farm level, working with Australia's herd improvement centres to collect data from herd recording dairy herds. Dairyfarmers should be aware that most centres now routinely supply mating information to ADHIS.

One of the key projects of 1999/2000 was preparing the national database for the routine collection, audit and storage of mating data. This data is used to support research in so-called Bull Non-Return Rates. Currently ADHIS is testing rankings that rate bulls in terms of semen fertility.

In future we also aim to provide cow fertility ABVs, in other words ABVs that rank bulls on the ability of their daughters to get back calf. The research for this project will commence in 2000.

Dairyfarmers should talk to their local herd improvement centre about supplying data to ADHIS. Traits such as temperament, milking speed, likability, calving ease and in future, fertility, rely on dairyfarmers supplying additional information to their local herd improvement centre.

Genetic selection can form part of the solution to problems such as poor fertility, high cell count and calving difficulty. However, in order to produce the most accurate rankings we need dairyfarmers to record and supply the data.

ADHIS continues to be seen as one of the dairy industry's most successful projects ever, generating returns in excess of 20 times

the cost. ADHIS will continue to strive for world's best practice. Via regular conferences such as "New Horizons 2000", the Board and staff will seek farmer and AB industry input into how best to achieve this.

The ADHIS Board acknowledges the ongoing support of herd-recording dairyfarmers, herd improvement centres, the Dairy Research and Development Corporation, Agriculture Victoria and all staff.

Last, but certainly not least, I would like to acknowledge two important new appointments made during 1999/2000. Professor Ellen Goddard of the University of Melbourne was appointed to the ADHIS Board of Management as an independent professional. And in January 2000, Mrs Judith Schweitzer was appointed to ADHIS via Agriculture Victoria, as an Information Scientist. We welcome both Ellen and Judith to ADHIS and note the valuable input they have already provided.

A handwritten signature in blue ink, which appears to read "P. Rowley". The signature is written in a cursive, flowing style.

**Dr Patrick Rowley,
ADHIS Chairman**



Dairy Industry Overview 2000



Jim Saunders
Chief Executive NHIA

The year ended 30 June, 2000 has once again seen increased milk production in Australia. Figures provided by the Australian Dairy Corporation indicate that approximately 10.846 billion litres were produced, an increase of 6.6% on the previous year. When compared with production of 6.26 billion litres in 1990. This shows that the Australian dairy industry production has grown by 73% over the last ten years.

Within Australia, all States showed production increases for the year under review. The greatest incremental volume came from Victoria where production increased by 455 million litres to 6.869 billion litres. South Australia recorded the largest percentage increase of 10.5% to 713 million litres.

During the course of the year average farm gate prices paid to Australian dairy farmers continued to decline, placing them under further economic pressure. Prices paid to most Australian dairy farmers are strongly influenced by the international price of traded dairy products, which amount to a very small percentage of world dairy production. The terms of trade of Australia's dairy farmers have been progressively tightening over many years, however the bottom line effects have been offset to some extent as farmers have progressively adopted new technology and increased productivity. Herd improvement has played its part in this regard through the increased use of artificial insemination and herd recording.

Some years ago the Australian Government set about encouraging less regulation in business by proposing reviews of government

involvement in the price setting and management mechanisms that operate across Australian agriculture. Industries underwent reviews and, encouraged by substantial incentives, state governments supported moving to deregulation. In the dairy industry state based market milk controls and pricing together with the Commonwealth marketing arrangements for milk for manufacture, concluded on 30 June, 2000.

The industry negotiated a compensation package aimed at offsetting some of the losses that would flow to farmers under deregulation. The package is available over eight years, however most farmers are negotiating to take an up front payment. The longer term effects on the industry in the form of changing demographics will undoubtedly have an across the board impact, however it is too early to make sound judgements in this regard.

Other matters of importance to farmers, which will have some effect on the future of dairy farming in Australia, include natural resource issues, particularly the availability and price of water, together with the complex myriad of environmental, seasonal and market place issues, that add an ongoing degree of uncertainty to the industry.





Report on ADHIS activities in 2000

By Robert Poole - ADHIS Executive Officer

Major ADHIS events in 1999/2000

- * Appointment of Judith Schweitzer as Information Scientist
- * Appointment of Professor Ellen Goddard to Board of Management
- * Three major ABV releases in February, May and August
- * Successful New Horizons 2000 Conference
- * Initiation of the research for a Total Merit Index
- * Herd mating records received from herd improvement centres
- * Testing begins on Bull Non-return Rates
- * Ongoing input and development at Interbull
- * Somatic Cell Count ABV project nears completion
- * Meetings of ADHIS Advisory, Records Standards, Type and Genetics committee held.
- * Support of several major research projects.
- * ABV Base updated from February 2000

ABV Releases in 1999/2000

From one ABV release in 1998, to two in 1999 and three in 2000. Faster computers, internet service delivery, more automated systems and a desire to deliver better information, these are the drivers for ADHIS' release of more frequent ABVs.

This was just one of many key improvements to the national genetic evaluation system in 1999/2000.

The 2000 ABV release schedule was February, May and August, corresponding with Interbull releases. Interbull ABV(I)'s were also released in November. ADHIS do not send new data to Interbull in November. We consider November data preliminary, because of the seasonal nature of much of our herd-test data.

With cows adding test-days throughout the year, ABV releases from February, to May to August, saw some re-ranking of bulls. As was concluded from our testing, this reranking was enough to justify the three releases, but was generally confined to young bulls with a high percentage of Records in Progress (RIP%).

Each dairyfarmer received the August ABVs via the ABV flyer, posted as an insert in the September/October edition of the

Australian DairyFarmer magazine. About 25,000 ABV flyers were distributed following each of the February and May ABVs. 3,000 ABV Books were sold following the May ABVs.

New Horizons 2000 Conference

The ADHIS New Horizons Conference continued the tradition of ADHIS holding a major forum every 4 years. New Horizons 2000 followed in the footsteps of Future Directions '96 and Focus '92. The aim of the conference was to discuss the future of dairy cow genetic improvement and assist with ADHIS policy direction.

Held on Tuesday 21 March 2000, New Horizons attracted 110 participants. Herd improvement centres and artificial breeding companies were well represented and importantly, over 30 dairyfarmers attended the conference.

In the morning session participants heard the views of four guest speakers. Rob Petit of the Australian Dairy Corporation, Mike Goddard of Victorian Institute of Animal Science, Keith (Jock) Macmillan of the University of Melbourne and Paul Donnelly of the Dairy Research and Development Corporation. The presentations were very well received as participants were informed and challenged about the way their business needed to adapt to change.

Group workshops followed in the afternoon. All participants had an opportunity to have their say regarding the future challenges for ADHIS and the herd improvement industry. As with the 1992 and 1996 conferences, ADHIS used this input to assist in the setting of policy direction.

Following are a list of issues, in no particular order, that were considered by the conference, to be of importance to ADHIS and the herd improvement industry, in the next five years.





- * ADHIS services the industry by collecting data and needs to maintain its credibility, quality assurance and independence.
- * Improve QA programmes in conjunction with the data processing centres to guarantee the integrity of data quality and of the output from ADHIS.
- * Address the issue of fertility of cows and bulls and the establishment of ABVs for these traits.
- * Improve data capture from on-farm systems as it relates to continued expansion of the ADHIS national database. The aim is to collect more detailed information e.g. health events, drug treatments, feeding and calving ease.
- * Establish programmes to measure components in milk (other than those routinely measured) with the long-term view of producing ABVs for these components e.g. B-casein.
- * Improve understanding and expression of workability traits (Temperament, Milking Speed and Likability)
- * Carefully consult regarding the introduction of a Total Merit Index.
- * Review the ABV Type Base
- * Review the process of collection of type information with the aim of removing herd selection by AB centres.
- * Improve total funding and flexibility of funding for ADHIS.
- * Increased expenditure on education and training with the possible appointment of a PR officer.
- * Improve the scope of www.adhis.com.au particularly making it more useful and user friendly for dairyfarmers.
- * Manage the identification of cows/herds in the future event of BST or GMO's being used.
- * Review the Survival ABV
- * Increase research based on Australian data from the ADHIS database.
- * Research the greater utilisation of crossbreds and persistency ABVs.
- * Increase promotion of ADHIS.

Total Merit Index Project Launched

In March 2000, a meeting of dairyfarmers and herd improvement industry representatives, arranged by ADHIS, helped set a path for the background research for an Australian Total Merit Index (TMI).

Currently the Australian Selection Index (ASI) is based on protein, fat and milk ABVs only. Because of this, dairyfarmers may place too little or too much weight on the non-production traits. An index aims to apply appropriate economic weights to traits and provide an overall merit ranking.

ADHIS arranged a working group of twenty industry representatives. The aim was to produce a set of guidelines from which ADHIS could proceed with the background research for TMI.

Initially the group heard from Professor Mike Goddard of the University of Melbourne. He spoke about the potential increase to the rate of genetic improvement in Australia, due to the implementation of a TMI.

Professor Goddard explained that the aim of a TMI is to identify the bulls that breed the most profitable daughters. By understanding how the key traits affect profitability we can rank bulls based on the most economically important ABVs, including production and non-production traits. It was noted that this was common practice in other dairy countries.

The working group looked at each trait analysed in the ABV system and considered its importance to dairy cow profitability. In other words how can the economic weight of a given trait be estimated?

As a result of working group meeting, the ADHIS Board approved funds for the project.

ADHIS then appointed Miss Hayley Valentine to complete the TMI project in conjunction with other scientists such as, Dr Kevin Beard, Dr Les Jones, Professor Mike Goddard and Professor Ellen Goddard. Hayley is from Berwick in Victoria and has completed a degree in Agricultural Science at Melbourne University.

ADHIS and DNRE Appoint Information Scientist



In February 2000 ADHIS, with the Department of Natural Resources and Environment Victoria (DNRE), announced the appointment of Mrs Judith Schweitzer to the position of Information Scientist.

After graduating with a Bachelor of Computer and Mathematical Sciences from Victoria University in 1997, Judith worked with Supertech Project

Management (Aust.) Pty Ltd. As a programmer Judith worked with some well-known companies on major projects.

Judith is now based at the Victorian Institute of Animal Science (VIAS) at Attwood in Melbourne. Judith deals with most aspects of the ADHIS database including quality assurance, automation, program development, internet management and data presentation.

For some time industry had called for ADHIS to be better resourced. The need for this increased with the number of services ADHIS provided to industry. Due to the ongoing support of the Dairy Research and Development Corporation (DRDC) and the herd improvement sector, the appointment of an additional technical staff member was possible.

Judith's appointment will allow ADHIS to provide more support to all sectors of the industry both today and into the future.



ADHIS Activities

Mating Data and the Bull Non-return Rate Project

The Bull Fertility project was funded by Victoria's Dairy Herd Improvement Fund (DHIF), convened by Genetics Australia and carried out by the Victorian Institute of Animal Science (VIAS).

ADHIS and several herd improvement centres, supported the project by providing data.

It is important to note that most herd improvement centres now send, or plan to send, mating information. In future, analysis of herd fertility, estimation of days open and cow fertility ABVs, are associated studies that will benefit from the work done on this project.

The project provides the dairy industry with a database and methodology to produce rankings to compare bulls for fertility. In other words possibly predicting which bull's semen is relatively better at getting cows in calf. However the method requires thorough testing before any public release is considered. ADHIS plans to monitor test research results for at least 12 months to analyse the accuracy and usefulness of the information.

Interbull Participation

ADHIS maintained an active involvement in Interbull issues throughout 1999/2000. In addition to the routine analysis' (4 times per year), ADHIS staff attended the ICAR/Interbull annual meeting in May 2000.

Major outcomes discussed at the conference included:

- * Testing of international type rankings for Jerseys.
- * Testing of international rankings for Somatic Cell Count.
- * Discussion of major new research projects.
- * Adoption of new Interbull membership structure and strategic plan.

In relation to Interbull sanctioned research, ADHIS was pleased to be able to provide data to all major Interbull studies.

ADHIS Committee Meetings

ADHIS Advisory Committee

The ADHIS Advisory Committee met in November 1999 and March 2000. It serves as the Board's main policy development forum. 1999/2000 members were:

MEMBERS (1999/2000):

Mr Bernie Harford (Genetics Australia), Mr Peter Williams (RAB), Mr Graeme Gillan (Herd Imp. Support Group), Mr Leon Giglia (CHISWA), Mr Stewart McRae (Mistro Group), Mr Paul Quinlan (Ausherd Group), Mr Roger Hooley (TDIA), Mr Ken Phillips (Dairy Express), Mr John Beveridge (HFAA), Mr Scott Joynson (AJBS), Mr James Hill (ARCBA/RDCA), Mr Rob Richmond (NHIA) plus ADHIS Board members and staff.





ADHIS Activities

ADHIS Type Assessment Committee

This committee met in May 2000. Matters relating to the collection, processing, analysis and presentation of type ABVs are discussed.

ATTENDEES:

Mr Ivan Jones (Chairman), Mr David Rickard (HFAA), Mr Neil Higham (Kiama Stud Registration), Mr Graeme Gillan (ABS Aust.), Mr Darryl Brown (Alta Genetics), Mr Jim Conroy (Semex), Mr Peter Thurn (Genetics Aust.), Mr Peter Williams and Ms Michelle Jones (RAB Aust.), Mr Albert McLroy (AgriGene) plus ADHIS staff.

Records Standards Committee

This committee met in October 1999. Matters relating to collection, storage and transfer of herd recording and associated data are discussed. Chairman, Mr Ken Phillips resigned during the year after many years of service to this committee. The structure of the committee will be revised for 2000/2001.

MEMBERS (1999/2000):

Mr Ken Phillips (Chairman), Mr Ivan Jones (ADHIS), Mr Colin Ross, (CHIS), Mr Alwyn Michie (South Gippsland, NHIA), Mr Bob Butler (HISCOL and CHIS Group), Mr Peter Nish (TDIA), Mr Frank Treasure (HISWA and CHIS Group), Dr Mike Larcombe (Maffra and Mistro) & Mr Paul Quinlan (Western Herd, Ausherd).

Genetics Committee

This committee met in October 1999. Matters relating to the calculation of breeding values are discussed. In 1999 the ADHIS Board welcomed the appointment of Dr Julius Van der Werf from the University of New England, to the Genetics Committee.

MEMBERS (1999/2000)

Prof. Mike Goddard (Chairman), Dr Mick Tierney, Dr Sandy McClintock, Dr Mick Carrick, Dr Frank Nicholas, Mr Ken Phillips and ADHIS staff.

Board of Management

The ADHIS Board is appointed by the Australian Dairy Farmers' Federation (ADFF). In 1999/2000 the ADFF welcomed the appointment of Professor Ellen Goddard, who offers an independent view of the herd improvement industry and brings new skills to the Board of Management.

MEMBERS (1999/2000)

Dr Pat Rowley (Chairman), Mr Max Fehring, Mr Ivan Jones, Professor Ellen Goddard, Mr John McQueen (Secretary).



Australian Herd Recording Database

The production of breeding values and national statistics continues to be underpinned by Australia's herd improvement centres and of course the dairyfarmers who commit to herd recording.

Herd Improvement Centres Supplying Data to ADHIS in 1999/2000.

HERD IMPROVEMENT SERVICE W.A.
HISCOL

NORTHERN HERD DEVELOPMENT CO-OPERATIVE
WESTERN HERD IMPROVEMENT CO-OPERATIVE
TIMBOON HERD IMPROVEMENT CO-OPERATIVE
COLAC HERD IMPROVEMENT CO-OPERATIVE
TASMANIAN DAIRY INDUSTRY AUTHORITY
SOUTH GIPPSLAND HERD IMPROVEMENT CO-OPERATIVE
YARRAM HERD IMPROVEMENT CO-OPERATIVE
VICTORIAN HERD MANAGEMENT SERVICES (VHMS)
WEST GIPPSLAND HERD IMPROVEMENT CO-OPERATIVE
MAFFRA HERD IMPROVEMENT CO-OPERATIVE
BOVINE INSEMINATIONS
CONSOLIDATED HERD IMPROVEMENT SERVICES CO-OPERATIVE
DAIRY EXPRESS
AUSTRALIAN HERD RECORDING SERVICES
Note: Other centres provide data via the centres listed.

On-farm PC's and Data Interchange Formats

One of the key outcomes of the 2000 New Horizons Conference, was the identification of on-farm management systems as future data sources. As average farm size grows and the need for quality assurance (QA) increases, the conference members agreed that dairyfarmers would have no option but to utilise computers to manage the herd.

In-line milk meters, permanent electronic ID and on-farm PC management would become the norm. Therefore ADHIS and herd improvement centres were urged by conference delegates to begin preparation for a changing management landscape.

Three key events occurred in 1999/2000 to further highlight the need for resources in this area.

i) Ongoing development of NLIS

The Victorian state government provided funding for herd improvement centres to test electronic herd testing systems. Herds where cows have utilised Allflex Radio Frequency tags, as approved for the National Livestock Identification Scheme (NLIS), are taking part in the trial.

Local centres are testing systems that identify cows, and print an adhesive label. This label is attached to the sample flask which is placed in the appropriate position in the crate. The aim is to make herd test day as hassle free and as accurate as possible.

If the NLIS tags can prove their effectiveness as a management tool, dairyfarmers and herd improvement centres will better embrace NLIS and automated management systems.



ii) Murray Goulburn announce MilkCare

One of Australia's largest dairy factories announced a comprehensive on-farm QA program in 2000. Some other factories had already embraced similar QA concepts. This further highlighted the need on Australian dairyfarmers to record day to day events on a per cow basis. Herd recording farmers already do this to a large extent. With better PC packages the task of meeting factory QA will be made easier via existing herd management software.

iii) Discussions with in-line meter manufacturers

ADHIS has held initial discussions with in-line milk meter manufacturers regarding the transfer of data from such systems in Data Interchange Formats (DIF). In other words, dairyfarmers who choose to install in-line meters can produce data in DIF and supply that data for breeding values, calf and heifer rebates, statistics and research.

The initial response from the manufacturers has been very positive. It seems there are no major technical or political hurdles to accessing data from this stream.

If ADHIS and the commercial players involved can continue to develop these data streams, the future looks sound for the continued development of the national database. This will add value to the existing ABVs, statistics and research by adding new opportunities for output from the database.



Australian Herd Recording Statistics 1999/2000

Table 1 : National and State Totals and Production Averages

State	Herds and Cows Recorded					Production Averages					Lactation Length days
	Number of Herds	Included in Averages	Excluded from Averages	Total Cows	Herd Size	Milk litres	Fat %	Fat kg	Protein %	Protein kg	
Victoria	3,904	578,024	44,257	622,281	159.4	5,570	4.1	227	3.3	184	297
New South Wales	989	114,619	9,861	124,480	125.9	6,115	4.0	246	3.3	204	324
Queensland	791	72,792	13,674	86,466	109.3	5,404	4.1	221	3.4	182	320
South Australia	543	65,521	5,011	70,532	129.9	6,746	3.9	265	3.2	216	315
Tasmania	428	71,661	4,253	75,914	177.4	4,703	4.1	195	3.3	157	270
Western Australia	321	44,487	4,073	48,560	151.3	6,676	3.9	259	3.1	204	310
Australia	6,976	947,104	81,129	1,028,233	147.4	5,691	4.0	230	3.3	187	302
Victorian regions											
Northern	1,664	223,552	16,282	239,834	144.1	5,822	4.1	237	3.3	192	302
Eastern	1,298	198,641	15,933	214,574	165.3	5,235	4.1	215	3.3	171	292
Western	942	155,831	12,042	167,873	178.2	5,637	4.1	229	3.3	186	295

Table 1 : National Totals and Production Averages 1997 to 2000

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

**There were 2.17 million dairy cows in Australia in 1999/2000.
Of these 1.028 million are individually herd recorded.**

(Source ABS and ADHIS)

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

State	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	3,904	55	128	328	605	884	885	584	279	86	39
New South Wales	989	10	21	49	96	171	198	177	157	60	35
Queensland	791	23	39	89	135	173	143	101	41	16	9
South Australia	543	0	10	21	36	68	92	113	100	64	38
Tasmania	428	29	34	67	113	87	59	24	8	3	1
Western Australia	321	3	3	14	22	39	61	79	60	20	17
Australia	6,976	120	235	568	1,007	1,422	1,438	1,078	645	249	139
Victorian regions											
Northern	1,664	16	34	84	211	340	434	319	154	45	17
Eastern	1,298	23	58	161	251	340	248	133	53	12	7
Western	942	16	36	83	143	204	203	132	72	29	15

All statistics are based on Australian herd recorded dairy cows in the 1999/2000 year. Source: ADHIS Pty Ltd

Australian Herd Recording Statistics 1999/2000

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	3,904	60	219	571	955	1,037	621	279	96	20	15
New South Wales	989	7	28	76	154	238	208	154	76	20	13
Queensland	791	15	47	127	173	207	130	52	13	2	3
South Australia	543	1	13	37	66	102	135	107	61	13	7
Tasmania	428	24	52	118	126	70	26	5	2	1	1
Western Australia	321	3	7	24	41	84	99	35	18	5	2
Australia	6,976	110	366	953	1,515	1,738	1,219	632	266	61	41

Victorian regions

Northern	1,664	12	61	155	359	514	336	164	40	7	6
Eastern	1,298	27	100	267	384	295	148	41	16	7	1
Western	942	21	58	149	212	228	137	74	40	6	8

Table 4: Production Averages by Age Group

Age Group	Number of Cows	Production Averages					Lactation Length days
		Milk litres	Fat %	Fat kg	Protein %	Protein kg	
2 Year Old	153,837	4,938	3.99	197	3.23	160	305
3 Year Old	169,491	5,486	4.05	222	3.30	181	305
Mature Cow	623,776	5,933	4.06	241	3.29	195	300
Total	947,104	5,691	4.05	230	3.28	187	302

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	153,837	203	181	165	145
3 Year Old	169,491	232	203	189	164
Mature Cow	623,776	256	222	207	179
Total	947,104	241	214	195	173

All statistics are based on Australian herd recorded dairy cows in the 1999/2000 year.
Source: ADHIS Pty Ltd

National Benchmark

On average, artificially bred cows produced 13% more kilograms of fat and protein than naturally bred cows in 1999/2000.

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

- 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.
- 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.
- There must be at least 30 cows in a herd in order for the cows to be included in the statistics.**
- Cows which pass the above tests are included in the total number of recorded cows and hence in the average herd size.**
- 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
- 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

Australian Herd Recording Statistics 1999/2000

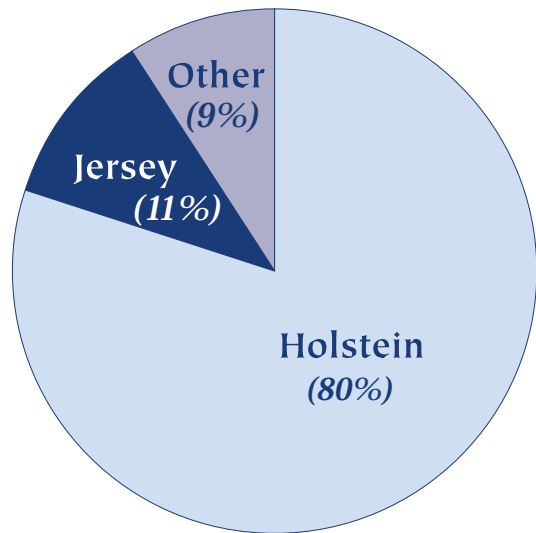
Table 6: Production Averages by Percentage of Artificially Bred Cows in Herds

Percentage of Artificially Bred Cows in Herd	Number of Herds	Production Average		
		Milk litres	Fat kg	Protein kg
< 10	976	4,841	196	160
10-19	319	5,133	211	170
20-29	346	5,093	208	168
30-39	403	5,390	220	177
40-49	488	5,573	225	182
50-59	615	5,604	228	183
60-69	775	5,908	238	193
70-79	842	6,016	241	197
80-89	931	6,035	244	198
> 89	1,281	6,091	246	199
Total	6,976	5,691	230	187

All statistics are based on Australian herd recorded dairy cows in the 1999/2000 year.
Source: ADHIS Pty Ltd

National Benchmark

18% of herds have greater than 89% of the herd 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	664,030	6,065	3.94	239	3.22	195	305
Jersey	91,879	4,318	4.98	215	3.72	161	295
Holstein/Jersey Cross	39,455	5,146	4.41	227	3.44	177	292
Guernsey	4,619	4,676	4.40	206	3.51	164	306
Ayrshire	8,013	4,874	4.13	201	3.33	162	295
Dairy Shorthorn	725	4,476	3.91	175	3.30	148	291
Illawarra	12,621	5,032	4.05	204	3.43	172	303
Unknown Breed	117,053	5,045	4.02	203	3.27	165	293
Simmental	301	5,675	3.96	225	3.25	184	301
Red Poll	50	4,484	4.18	188	3.37	151	265
Meuse-Rhine-Issel	26	5,248	4.39	231	3.46	181	316
Aust Milking Zebu	67	4,498	4.31	194	3.41	154	315
Commercial Dairy	184	6,079	4.03	245	3.34	203	292
Aust Red Breed	5,454	5,288	4.21	222	3.44	182	300
Brown Swiss	2,478	5,027	4.17	210	3.42	172	305
Aust Friesian Sahiwal	149	4,121	3.93	162	3.28	135	302
Total	947,104	5,691	4.05	230	3.28	187	302

Australian Herd Recording Statistics 1999/2000

Table 8: Production Averages by Month of Calving

Month of Calving	Number of Cows	% of Total	Production Averages					Lactation Length days
			Milk litres	Fat %	Fat kg	Protein %	Protein kg	
January	25,777	2.7	5,996	4.06	244	3.27	196	322
February	25,970	2.7	5,994	4.04	242	3.28	197	324
March	44,787	4.7	6,048	4.04	244	3.29	199	326
April	61,292	6.5	6,061	4.03	244	3.28	199	320
May	78,443	8.3	6,005	4.01	241	3.28	197	313
June	86,726	9.2	5,895	4.03	238	3.30	194	304
July	117,885	12.4	5,650	4.07	230	3.30	186	298
August	221,748	23.4	5,581	4.08	228	3.30	184	293
September	165,320	17.5	5,424	4.06	220	3.27	178	289
October	67,570	7.1	5,362	4.04	216	3.23	173	292
November	28,384	3.0	5,528	4.04	223	3.21	177	308
December	23,202	2.4	5,842	4.03	235	3.22	188	318
Australia	947,104	100	5,691	4.05	230	3.28	187	302

National Benchmark

52% of herd recorded cows calve in the months of July, August or September in 1999/2000.

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	0	1	2	5	8	11	15	29	20	7	2	1
New South Wales	8	8	11	9	9	8	9	10	8	7	6	7
Queensland	8	8	11	9	10	10	9	8	7	7	6	7
South Australia	4	3	8	12	11	8	12	14	11	7	5	4
Tasmania	0	0	2	4	3	2	7	37	34	9	2	0
Western Australia	13	10	10	9	8	7	7	7	7	6	6	10
Australia	3	3	5	6	8	9	12	23	17	7	3	2

Victorian regions

Northern	0	0	2	4	3	2	6	36	30	11	3	1
Eastern	0	0	2	4	4	8	21	33	20	6	1	0
Western	0	1	3	8	20	26	20	13	6	2	1	0

All statistics are based on Australian herd recorded dairy cows in the 1999/2000 year. Source: ADHIS Pty Ltd

Australian Herd Recording Statistics 1999/2000

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	116,490	5,179	3.87	200	3.18	165	306
3 Year Old	122,519	5,826	3.92	228	3.23	188	308
Mature Cow	425,021	6,376	3.96	253	3.23	206	303
Total	664,030	6,065	3.94	239	3.22	195	305
Artificially Bred	456,948	6,241	3.92	244	3.21	201	307
Naturally Bred	207,082	5,674	3.98	226	3.24	184	300
Pure Bred	90,119	7,077	3.87	274	3.20	227	327
Grade	573,911	5,906	3.96	234	3.23	191	301
Jersey							
2 Year Old	18,440	3,883	4.83	188	3.60	140	299
3 Year Old	17,623	4,228	4.99	211	3.72	157	297
Mature Cow	55,816	4,490	5.03	226	3.76	169	294
Total	91,879	4,318	4.98	215	3.72	161	295
Artificially Bred	57,531	4,534	4.95	224	3.70	168	298
Naturally Bred	34,348	3,957	5.04	200	3.76	149	291
Pure Bred	20,018	4,634	5.11	237	3.80	176	308
Grade	71,861	4,230	4.95	209	3.70	157	292
Holstein/Jersey Cross							
2 Year Old	7,798	4,396	4.34	191	3.37	148	294
3 Year Old	7,601	4,952	4.43	220	3.47	172	294
Mature Cow	24,056	5,450	4.43	241	3.46	188	292
Total	39,455	5,146	4.41	227	3.44	177	292
Artificially Bred	22,320	5,429	4.38	238	3.43	186	295
Naturally Bred	17,135	4,777	4.45	213	3.46	165	289
Pure Bred	-	-	-	-	-	-	-
Grade	39,455	5,146	4.41	227	3.44	177	292
Guernsey							
2 Year Old	667	4,333	4.33	188	3.39	147	306
3 Year Old	976	4,473	4.41	197	3.51	157	309
Mature Cow	2,976	4,819	4.43	213	3.55	171	305
Total	4,619	4,676	4.40	206	3.51	164	306
Artificially Bred	2,481	4,912	4.36	214	3.47	171	313
Naturally Bred	2,138	4,402	4.45	196	3.56	157	297
Pure Bred	1,455	5,073	4.41	224	3.56	181	326
Grade	3,164	4,493	4.39	197	3.49	157	297
Ayrshire							
2 Year Old	1,135	4,066	4.14	168	3.30	134	295
3 Year Old	1,514	4,584	4.11	189	3.33	153	300
Mature Cow	5,364	5,127	4.13	212	3.34	171	293
Total	8,013	4,874	4.13	201	3.33	162	295
Artificially Bred	4,202	5,070	4.15	210	3.33	169	299
Naturally Bred	3,811	4,659	4.10	191	3.34	156	290
Pure Bred	1,799	5,313	4.14	220	3.32	176	309

All statistics are based on Australian herd recorded dairy cows in the 1999/2000 year. Source: ADHIS Pty Ltd

Australian Herd Recording Statistics 1999/2000

Table 10: (continued)

	Number of Cows	Production Averages					Lactation Length days
		Milk litres	Fat %	Fat kg	Protein %	Protein kg	
Illawarra							
2 Year Old	1,800	4,504	3.98	179	3.36	151	315
3 Year Old	2,652	4,686	4.08	191	3.46	162	308
Mature Cow	8,169	5,261	4.09	215	3.46	182	299
Total	12,621	5,032	4.05	204	3.43	172	303
Artificially Bred	7,190	5,243	3.99	209	3.37	177	308
Naturally Bred	5,431	4,753	4.12	196	3.48	166	298
Pure Bred	5,015	5,505	4.00	220	3.41	188	311
Grade	7,606	4,720	4.08	193	3.43	162	299
Unknown Breed							
2 Year Old	5,672	4,684	4.00	187	3.23	151	306
3 Year Old	14,685	4,793	4.06	194	3.30	158	297
Mature Cow	96,696	5,105	4.01	205	3.27	167	292
Total	117,053	5,045	4.02	203	3.27	165	293
Artificially Bred	1,215	5,539	3.97	220	3.24	180	304
Naturally Bred	115,838	5,040	4.02	203	3.27	165	293
Pure Bred	-	-	-	-	-	-	-
Grade	117,053	5,045	4.02	203	3.27	165	293
Aust. Red Breed							
2 Year Old	1,180	4,537	4.14	188	3.40	154	304
3 Year Old	1,121	5,192	4.20	218	3.48	181	304
Mature Cow	3,153	5,603	4.24	237	3.45	193	298
Total	5,454	5,288	4.21	222	3.44	182	300
Artificially Bred	4,534	5,383	4.21	227	3.44	185	301
Naturally Bred	920	4,820	4.17	201	3.45	167	297
Pure Bred	488	6,802	4.15	282	3.46	236	305
Grade	4,966	5,139	4.21	217	3.44	177	300
Brown Swiss							
2 Year Old	465	4,509	4.07	184	3.31	149	309
3 Year Old	531	4,975	4.18	208	3.44	171	309
Mature Cow	1,482	5,209	4.21	219	3.46	180	302
Total	2,478	5,027	4.17	210	3.42	172	305
Artificially Bred	1,851	5,119	4.18	214	3.42	175	306
Naturally Bred	627	4,757	4.13	197	3.42	163	300
Pure Bred	437	5,453	4.10	224	3.51	192	318
Grade	2,041	4,936	4.19	207	3.41	168	302
Other Breeds							
2 Year Old	190	4,093	3.90	160	3.21	131	297
3 Year Old	269	4,482	4.02	180	3.31	149	308
Mature Cow	1,043	5,144	3.98	205	3.32	171	291
Total	1,502	4,892	3.97	194	3.30	162	295
Artificially Bred	746	5,387	3.98	214	3.31	178	303
Naturally Bred	756	4,404	4.01	177	3.33	147	287
Pure Bred	166	5,072	3.65	185	3.24	164	304
Grade	1,336	4,870	4.03	196	3.33	162	294

All statistics are based on Australian herd recorded dairy cows in the 1999/2000 year. Source: ADHIS Pty Ltd

Australian Herd Recording Statistics 1999/2000

Table 11: Production Averages of Stud Cows

Breed	Number of Cows	Production Averages					Lactation Length days
		Milk litres	Fat %	Fat kg	Protein %	Protein kg	
Holstein	90,119	7,077	3.87	274	3.20	227	327
Jersey	20,018	4,634	5.11	237	3.80	176	308
Guernsey	1,455	5,073	4.41	224	3.56	181	326
Ayrshire	1,799	5,313	4.14	220	3.32	176	309
Illawarra	5,015	5,505	4.00	220	3.41	188	311
Aust Red Breed	488	6,802	4.15	282	3.46	236	305
Brown Swiss	437	5,453	4.10	224	3.51	192	318
Total	119,331	6,543	4.10	264	3.32	215	323

Table 12: Production Averages of Artificially Bred Stud Cows

Breed	Number of Cows	Production Averages					Lactation Length days
		Milk litres	Fat %	Fat kg	Protein %	Protein kg	
Holstein	64,935	7,137	3.86	275	3.20	228	328
Jersey	12,951	4,861	5.05	245	3.76	183	310
Guernsey	1,058	5,211	4.40	229	3.54	185	329
Ayrshire	1,081	5,428	4.13	224	3.29	179	311
Illawarra	2,813	5,693	3.99	227	3.39	193	313
Aust Red Breed	413	6,939	4.17	289	3.48	241	307
Brown Swiss	356	5,595	4.07	228	3.47	194	319
Total	83,607	6,682	4.06	268	3.30	219	324

All statistics are based on Australian herd recorded dairy cows in the 1999/2000 year. Source: ADHIS Pty Ltd



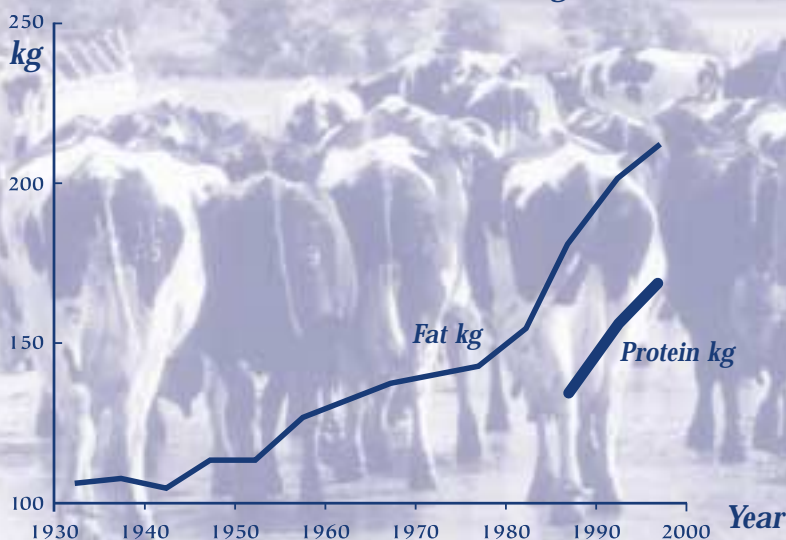
Australian Herd Recording Statistics 1999/2000

Table 13: Victorian Production Averages 1930/1931 - 1999/2000

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

All statistics are based on Australian herd recorded dairy cows in the 1999/2000 year. Source: ADHIS Pty Ltd

Victorian Production Averages



National Benchmark
Protein production per cow increased by 3.2% in 1999/2000 compared to the previous year.

Countdown Downunder: Progress Toward National Goals



Dr Pauline Brightling
Countdown Downunder
National Project Leader
 Level 6, 84 William Street
 Melbourne Victoria 3000
 Phone 03 9600 3506
 Fax 03 9642 8133
 Email Pauline@countdown.org.au
 Web www.countdown.org.au

Australia has made steady progress toward the dairy industry goal of having bulk milk cell counts less than 400,000 cells per mL for all milk supply from dairy farms.

The challenge became evident when an Australia-wide measure of milk quality was calculated for the first time in 1999. The national statistic for the 1997-1998 fiscal year showed that 89% of Herd Milk Cell Counts were below 400,000 cells/mL.

Herd Milk Cell Counts are derived from milk recording cell counts of individual cows (a more detailed explanation is given below).

In the past 3 years the proportion of Herd Milk Cell Counts below 400,000 cells per mL has risen from 89% to 92%.

More Herd Milk Cell Counts are below 400,000 cells per mL

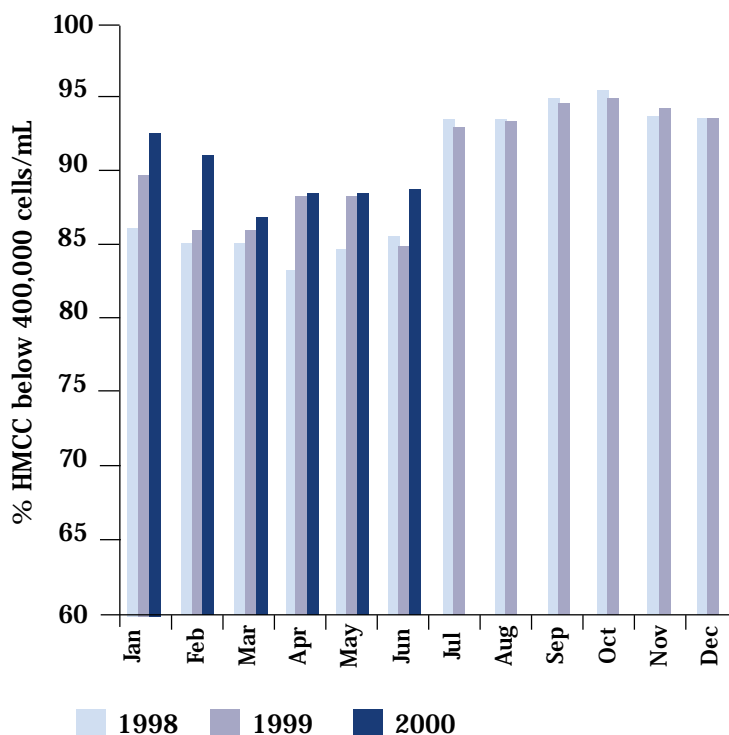
	1997-1998	1998-1999	1999-2000
Proportion of HMCC below 400,000 cells/mL	89%	91%	92%
No. cows tested	940,051	951,413	941,799
No. herds	7,451	7,174	6,972
Average number of herd tests per farm	7.3	7.4	7.3
Proportion of cows in 2nd lactation or greater	76%	77%	77%

Improvement in the national somatic cell count is clear even though a large number (one-third) of the 170 herds that joined milk recording for the first time in 1999-2000 had Herd Milk Cell Counts above 400,000 cells per mL. (Presumably many of these herds started milk recording to improve the management of their cell counts).

Countdown Downunder provides farmers with practical methods of achieving high quality milk. The project was designed to increase farm profitability and lower the cell count in Australia's milk to satisfy domestic and export markets demand for high quality dairy produce.

Progress toward the national cell count goals was especially obvious during the first six months of this year, as the 872 veterinarians, milking machine technicians and dairy advisers who had received information or training from Countdown worked with farmers in their local regions.

Progress toward the national goal from January 1998 to June 2000



We anticipate continued improvement in milk quality and mastitis control over the next 3 years as farmers and their staff participate in training programs and local activities.

About Herd Milk Cell Counts

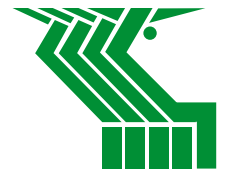
Herd Milk Cell Counts are based on the national milk recording cell counts of individual cows aggregated into volume-weighted herd averages. Cows with healthy udders pass low numbers of cells in their milk throughout their lactation. Although cell counts may be high for the first few days after calving, elevated cell counts at any other time indicate mastitis.

Herd Milk Cell Counts are subject to the same inclusion and exclusion criteria as the Australian Herd Recording statistics and directly relate to the production data summarised in this report.

For more information on Countdown Downunder, contact Dr Pauline Brightling.



A
**DAIRY RESEARCH AND
 DEVELOPMENT CORPORATION**
 Farmer Funded Project



Top Herds Summary

ADHIS has listed the August 2000 National Top 2% Herd Average ABVs based on the ADHIS Australian Selection Index (ASI). The formula for the ASI is:

$$\text{ASI} = 3 \times \text{Protein ABV} + 1 \times \text{Fat ABV} - 0.03 \times \text{Milk ABV}$$

Herds are included in the averages if they have at least 30 current straightbred* cows of the same breed. Current cows are defined as those that commenced a lactation within the 30 months prior to the release of the ABVs on 22 August 2000.

The number of herds used to identify the August 2000 Top 2% Herd Average ABVs and the minimum ASI required to achieve the Top 2% lists are as follows:

Breed	Total eligible herds	Top 2% reported	Herd average ASI required to get into top 2% of herds
Holstein	5,748	124	14
Jersey	875	21	20
Illawarra	137	3	14
Ayrshire	67	2	23
Australian Red Breed	35	2	50
Guernsey	49	2	13
Total	6,911	154	

The lists of the top 2% Herd Average ABVs for these breeds are presented in order of Australian Selection Index. The names of the owners of herds detailed in these lists were supplied by the Milk Recording Centres when production records were provided to ADHIS by 5 July 2000.

The following table gives the National distribution of herd average ABVs based on the ASI.

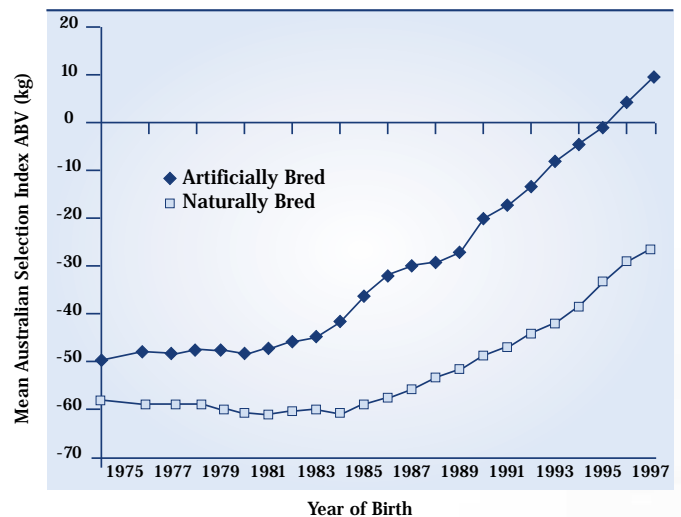
Breed	No. of Herds	Top 50%	Top 40%	Top 30%	Top 20%	Top 10%	Top 5%	Top 2%
Holstein	5,748	-7	-4	-1	1	5	9	14
Jersey	875	-10	-6	-2	2	8	14	20
Illawarra	137	-18	-15	-11	-7	-1	2	14
Ayrshire	67	-4	-3	-1	4	11	21	23
Australian Red Breed	35	31	32	36	43	45	50	50
Guernsey	49	-3	-2	1	5	10	12	13

If a Holstein herd has an average ASI of 5 or better, it is among the top 10% of Holstein herds in Australia for ASI. Likewise, Guernsey herds with an average ASI of 1 or better are in the top 30% of Guernsey herds receiving ABVs.

* Cows were included in the herd average for a breed if they had the same breed of Sire and MGS (if known) and the breed of their Sire was the same breed as all four characters in their breed code (if known). For the red breeds (Illawarra, Ayrshire and Australian Red Breed), the rules were relaxed so that cows were included in the averages if any of the red breeds were Sire and MGS, or appeared in their breed code.



Genetic Trend for Holstein Cows, for ASI, by year of birth, NASIS versus NON-NASIS



Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

Year of Birth

August 2000 Bull Average ABVs™

Ranges, Means, Distributions & Top 1% ABV's August 2000 - All Breeds (Publishable NASIS Bulls born 1985 onwards)
All traits excluding conformation

Breed		ASI	Prot	Prot%	Milk	Fat	Fat%	Milking Speed	Temperament	Likability	Survival
Holstein	Number of Bulls	2551	2551	2551	2551	2551	2551	2098	2098	2098	2329
	Mean	2.1	1.1	-0.011	61.3	0.6	-0.028	90.2	90.4	91.1	4.9
	Stand Dev.	28.9	9.6	0.107	421.8	13.8	0.258	3.1	2.2	2.3	3
	Minimum	-131	-35	-0.49	-1429	-56	-0.87	73	76	79	-8
	Maximum	114	39	0.43	1381	54	0.99	97	95	96	13
	Top 1%	69	24	0.24	1067	34	0.57	95	94	95	11
Jersey	Number of Bulls	364	364	364	364	364	364	282	282	282	312
	Mean	8.2	3	0.02	60.3	1.1	-0.04	90.9	90.3	91	8.8
	Stand Dev.	48.7	14.8	0.169	551.2	20.6	0.399	2.8	2.2	2.6	5.5
	Minimum	-165	-44	-0.64	-1725	-81	-1.05	74	83	78	-13
	Maximum	130	38	0.5	1259	65	1.24	96	96	96	19
	Top 1%	100	32	0.45	1087	39	0.96	95	95	96	19
Illawarra	Number of Bulls	110	110	110	110	110	110	104	104	104	92
	Mean	-8.7	-1.3	0.003	-54.1	-6.4	-0.058	87.1	89.7	87.3	-3.2
	Stand Dev.	45.5	12.7	0.097	518.8	22.6	0.193	4.3	2.3	2.8	4.3
	Minimum	-113	-29	-0.28	-1123	-60	-0.58	72	81	79	-16
	Maximum	96	32	0.29	1200	48	0.45	94	95	94	8
	Top 1%	91	25	0.21	1014	45	0.39	94	94	93	8
Ayrshire	Number of Bulls	63	63	63	63	63	63	33	33	33	42
	Mean	6.2	1.4	-0.015	80.6	4.5	0.016	89.5	88.7	87.4	-1.8
	Stand Dev.	31.8	8.5	0.097	368.9	17.3	0.185	2.6	2.9	2.9	2.6
	Minimum	-55	-15	-0.22	-766	-27	-0.32	83	78	80	-6
	Maximum	74	22	0.21	1042	52	0.72	93	92	92	5
	Top 1%	74	22	0.21	1042	52	0.72	93	92	92	5
Guernsey	Number of Bulls	59	59	59	59	59	59				
	Mean	13.6	3.6	-0.001	125.2	6.5	0.019				
	Stand Dev.	38.4	11.4	0.14	481.5	17.8	0.373				
	Minimum	-131	-39	-0.29	-1405	-56	-0.68				
	Maximum	84	22	0.34	1052	40	1.14				
	Top 1%	84	22	0.34	1052	40	1.14				
Australian Red Breed	Number of Bulls	57	57	57	57	57	57	45	45	45	47
	Mean	47.3	11.4	0.093	239.8	20.4	0.146	90	90	89.1	3
	Stand Dev.	31.2	9	0.107	348.6	15.2	0.218	3.5	2.3	2.6	2.3
	Minimum	-28	-7	-0.13	-540	-20	-0.39	80	84	81	-1
	Maximum	111	32	0.3	1074	55	0.71	95	95	95	9
	Top 1%	111	32	0.3	1074	55	0.71	95	95	95	9
Brown Swiss	Number of Bulls	45	45	45	45	45	45				
	Mean	9.6	2.7	0.012	74.1	4	0.01				
	Stand Dev.	18.4	4.7	0.109	166.9	9	0.163				
	Minimum	-28	-7	-0.27	-322	-17	-0.24				
	Maximum	46	15	0.24	521	24	0.44				
	Top 1%	46	15	0.24	521	24	0.44				

Source: ADHIS Pty. Ltd. (This information for type traits at www.adhis.com.au)

Reasons why cows do not get ABVs™

1. COWS REJECTED - FOR ALL BREEDS

Cow information has to satisfy the following criteria:

- A. Cows must have a unique national I.D
- B. Cows must have a valid date of birth relative to sire and dam.
- C. Cows must have a known sire which has also been given an ABV.
- D. Cow breed must be consistent with sire breed.
- E. If a cow is by an A.I sire then semen must have been available for that sire at the time of conception.

Examples of the above:

- A. Two cows were allocated the same national I.D, the second would be rejected.
- B. Cows date of birth is listed as prior to its sire or dam.
- C. Sire is unknown
- D. Cow is listed as Holstein but its sire is listed as a Jersey.
- E. Cow's sire did not have semen available at the time of conception.

2. LACTATIONS REJECTED

Lactations information has to satisfy the following criteria:

- A. Cow must be less than 20 years old at calving.
- B. Cow must be more than 18 months old at calving
- C. A lactation that is too close to another or overlaps another is rejected.

Examples of the above:

- A. Incorrect date of birth makes the cow appear too old on the system
- B. Incorrect date of birth makes the cow appear too young on the system
- C. Incorrect calving dates make the lactations appear too close together

3. TESTS REJECTED

Test day information has to satisfy the following criteria:

- A. The test date must be valid.
- B. Raw milk test must be less than 80 litres.
- C. Raw test milk must be greater than 1 litre.
- D. Raw test fat must be less than 9%.
- E. Raw test protein must be less than 8%.
- F. The test day exclusion code must not be set.
- G. The first test day must be conducted within the first 100 days of lactation.
- H. The interval between consecutive test days must be greater than 2 days and less than 120 days. All tests for a lactation following such an interval are rejected.
- I. If either milk fat or protein is not present, the test is rejected.
- J. Test days must be between 5 and 305 days to be included in the ABV.

4. OTHER CONDITIONS

- A. A bull will receive an ABV if it is recorded on the NASIS file.
- B. Any animal must have at least two known relatives to receive an ABV.
- C. A natural service sire must be on the ADHIS bull file to receive an ABV.



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.

Traditionally the funds have been raised by a modest levy on the annual dairy farm licences paid by Victorian dairy farmers. The money is then paid to NHIA, the statutory Fund Manager. NHIA works closely with industry representative groups and particularly the United Dairyfarmers of Victoria to ensure targeted cost effective expenditure from the Fund. With the advent of deregulation the traditional source of revenue for the Fund will not continue, however, for at least the next two years approximately 50% of prior revenue will be available through the Geoffrey Gardiner Foundation for projects consistent with previous Fund expenditure.

The DHIF has been responsible for a number of significant R&D projects in recent years. Following an industry workshop at the end of 1995 which identified a number of key requirements to make test day easier on the dairy farm, a number of initiatives were undertaken towards

- * developing an more affordable generic, in-line milk meter, and
- * ensuring the provision of suitable automatic identification systems for cattle which would assist the test day process.

In conjunction with the Milking Research Centre at Ellinbank in Victoria, the development of such a milk meter was commissioned. This development has been highly successful and a contract to commercialise the Ellinbank Milk Meter has been let to Radiometer Pacific Pty Ltd. The new Eli Milk Meter will be available on the Australian market during the early part of 2001. More recently further work has been commissioned which seeks to provide a conductivity facility within the milk meter which has the capacity to profile cows for mastitis. Whilst not complete, this work is showing great promise.



The DHIF funded a comprehensive consultancy review of automatic identification systems that were available world wide with a view to developing an automatic identification system that would be of value to farmers on test day. It is pleasing to report that the market has responded to the extent that there are currently a number of automatic cattle identification systems commercially available. In addition the Victorian Government decided to provide radio frequency identification tags to Victorian producers with a view to enhancing meat quality through an effective trace back system.

Further initiatives are now underway aimed incorporating these tags into existing ID systems with a view to making test day easier and more effective for stakeholders.





With the likely advent of in-line milk metering, the DHIF acknowledged that the existing standards and specifications for herd recording, which

are based on once monthly milk sampling, would require modification for the future. To that extent a project was completed in 1999 which developed a new set of standards and specifications for herd recording under in-line milk metering and constant monitoring conditions. These specifications have been adopted by the Australian herd recording industry and the research paper was recently presented to the International Committee on Animal Recording conference in Bled, Slovenia.

Quality assurance for both laboratories and participants in herd recording has always been a key concern for industry stakeholders. The DHIF provides fat and protein and also somatic cell reference samples, free of charge, to all Victorian herd recording laboratories. This service ensures a consistency in approach with the calibration of electronic analytical machines and also ensures that every laboratory is referencing its machines from milks from the same source.

As a further plank of industry quality assurance the DHIF has developed an Industry Code of Practice. The Code provides the process by which herd improvement providers may be accredited for Semen Production, Semen Distribution, Herd Recording, Artificial Insemination Services and Training, and General Business Practice. The Code was developed by the industry with funding from the DHIF and seeks to fill the vacuum left by the withdrawal of government from industry regulation. The display of the logo by an organisation is the outward demonstration that it has been accredited under the Dairy Herd Improvement Industry's Code of Practice and, demonstrates a HI service provider's commitment to the industry, its customers and quality.

In the AI industry the licensing of inseminators ceased a number of years ago. In response to widespread industry requests, the DHIF, in conjunction with the Dairy Research and Development Corporation and NHIA, has recently developed an accreditation program for professional AI technicians. This program which will be offered commercially across Australia from early 2001 will attest to a participant's theoretical understanding and knowledge of all aspects of professional AI insemination and will also incorporate a stringent practical examination. Graduates of the program will, 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.

This Australian Dairy Herd Improvement Report is a further example of the work of the DHIF. In conjunction with the Australian Dairy Herd Improvement Scheme, this publication provides industry, researchers, educators and international colleagues with a statistical snapshot of performance within the herd improvement industry together with much valuable information on herd improvement in Australia.



August 2000 Bull ABVs

TOP 40 PUBLISHABLE HOLSTEIN

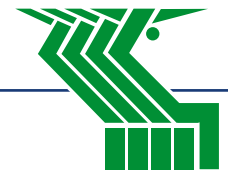
"To be included in this section, bulls must have semen available and have publishable ABV's for production, workability and type."

	Bull ID	Bull Name	Defect Codes	ABVs					Rel	No. Dtrs	No. Herds
				ASI	Prot	Prot%	Milk	Fat			
1	DONOR	ELITE MOUNTAIN DONOR IMP (E.T)		114	39	0.07	1308	36	-0.29	87	59
2	RAMESES	LOCHAVON RAMESES	TC	110	34	0.03	1193	44	-0.10	85	77
3	CAREY	MARION DALE CAREY		103	34	0.04	1173	36	-0.20	90	133
4	SOUBEAU	CLIVEDALE SOUTHWIND BEAU	TL	94	27	0.01	980	42	0.00	79	48
5	TOLEDO	RENGAW MANHATTAN TOLEDO-ET		88	29	0.03	1016	31	-0.18	74	36
6	NLDCASH	EASTLAND CASH	TL	83	26	0.15	677	25	-0.06	95	178
7	MATEMAN	LOCHAVON MATEMAN		83	23	-0.10	1052	46	0.02	82	62
8	TOPS	ELITE KAI BRILLIANT - ET		81	24	0.14	608	27	0.02	84	69
9	ARCADE	RENGAW BELLWOOD ARCADE		79	27	0.01	973	27	-0.21	84	73
10	REFRESH	BIG RIVER REFRESH		78	25	0.18	568	20	-0.06	93	200
11	TRUMAN	PARWAN PARK LEADING TRUMAN IMP ET		75	19	0.18	351	29	0.20	89	116
12	DOYEN	ELITE MOUNTAIN DOYEN IMP (E.T)		72	21	0.00	780	32	-0.02	89	79
13	ALLORA	HILL VALLEY MASCOT ASTRONAUT ET		72	20	0.11	532	28	0.08	92	165
14	VOLCANO	ELMAR MISSION	TC	72	20	0.08	590	30	0.07	89	119
15	11H3409	LOOSLEA BLACKSTAR MARCEL - ET	RC	72	20	-0.01	764	35	0.03	97	466
16	GRID	JO-WAL PRELUDE MATRIX - ET		71	18	-0.04	742	39	0.11	92	104
17	NUCLEAR	ELITE MASCOT DYNAMIC-ET		69	22	0.06	690	24	-0.08	82	63
18	ZIRCON	PEN-COL CELCIUS DEWAN-IMP ET		69	19	0.06	593	30	0.07	90	124
19	SHOTIME	SHOREMAR PERFECT STAR (ET)		68	17	-0.03	689	38	0.12	99	28388
20	PINACLE	JERANG SECRET PERRY	TLRC	68	17	0.22	205	23	0.21	92	157
21	KONGWALK	BUNDALONG LUKE GENESIS		66	25	-0.17	1256	29	-0.35	80	53
22	GRANSEC	ELMAR GRAND SECRET	TCTL	65	17	0.07	485	29	0.12	90	129
23	FORMOST	CLYDEVALE MASCOT FORMOST - ET	TCTL	64	19	0.08	550	23	-0.01	94	240
24	PRETEXT	EUREKA PRETEXT IMP ET		63	21	-0.13	1033	31	-0.19	82	64
25	BIGGUN	ADAMS-DREAM-RW COLONEL - ET		63	20	0.01	718	25	-0.08	95	224
26	JOWARS	ELMAR JOWAR ET	CN	63	15	0.23	103	21	0.24	99	8315
27	SEMTECH	ELITE MASCOT DYNAMITE - ET		62	20	0.05	650	21	-0.10	86	83
28	LAMPOON	ELITE MOUNTAIN KID IMP (E.T.)		62	19	0.02	672	25	-0.05	84	70
29	SOAPBOX	GLOMAR HARDTAC SOAPBOX - ET	TL	62	9	0.13	86	38	0.50	88	101
30	LICENSE	PARWAN PARK LICENSE		61	23	-0.17	1182	27	-0.34	86	88
31	FUTURES	ELITE BELLMAN DOW-JONES-IMP-ET		61	17	0.01	618	29	0.04	87	75
32	GRANLAD	COOLIATTA GRAND LAD		61	14	-0.05	612	37	0.16	90	127
33	CLIBEAU	CLIVEDALE INSPIRATION BEAU (T)		61	9	0.21	-81	32	0.51	99	2152
34	SHOWBIZ	WESTDAMA STAR TARZAN		61	2	0.24	-403	43	0.87	94	238
35	VAL	ELITE VALE IJON		60	21	-0.07	917	25	-0.20	99	12559
36	WINLUKE	STRATHAIRE SOUTHWIND LUKE - ET	RCTL	60	17	0.12	404	21	0.05	99	11300
37	ONAWIN	EUREKA ONAWIN IMP ET		60	15	0.17	224	22	0.18	87	86
38	DICKY	JERANG DICK		59	15	0.10	357	25	0.14	86	86
39	BLIZARD	KENRON JACK FROST	CN	59	13	0.11	265	28	0.24	99	2915
40	BELLPRO	BEACHLAWN BELL PRO TOBEY		58	30	-0.14	1381	9	-0.72	88	72

TOP 12 PUBLISHABLE JERSEYS

"To be included in this section, bulls must have semen available and have publishable ABV's for production, workability and type."

	Bull ID	Bull Name	ABVs					Rel	No. Dtrs	No. Herds	
			ASI	Prot	Prot%	Milk	Fat				Fat%
1	TARANAK	ROYALS GREEN ELMO	115	26	0.16	547	53	0.45	89	89	49
2	NOORAT	GLENPAR PHANTOM - ET	106	38	0.04	1059	24	-0.62	84	72	36
3	FAXALL	ALL LYNNS BERRETTA FELIX	97	32	-0.23	1259	39	-0.54	83	64	29
4	BIESTAR	BIE BISTAR ET IMP	96	29	-0.03	901	36	-0.24	79	51	25
5	TANDEM	TABLE TOP ALFS FAMOUS AI - ET	96	25	0.21	456	35	0.20	90	118	47
6	ASTOUND	MOLLY BROOK BERRETTA FABULOUS	92	30	-0.12	1049	33	-0.44	90	95	47
7	11J0627	MOLLY BROOK BERRETTA FAIR - ET	85	30	0.07	789	19	-0.44	86	55	25
8	PONTIFY	WHITE STAR PONTIFY	85	23	0.12	513	31	0.06	87	94	52
9	1J382	COMFORT ROYAL ALF (E.T.)	83	24	0.20	431	24	0.02	99	1655	320
10	1J306	ALTHEAS AEROSTAR	83	23	0.07	578	31	0.00	98	499	129
11	MARINA	PHILMAR LESTER MAGNET ET	81	21	0.17	380	29	0.16	86	82	48
12	PYRAMID	PYRAMID DOWNUNDER	80	28	-0.11	975	25	-0.52	96	325	143



No. Herds	RIP%	Over Type	Mam Syst	Milk Rel	Spd	Temp	Like	Rel	Surv	Source
30	25	0.9	0.8	79	95	94	95	68	10	RAB
53	9	0.7	0.4	84	95	93	96	79		GAC
66	9	0.0	0.0	84	92	92	95	85	9	GAC
17	14	0.4	0.4	78	94	92	94	62	5	AGR
15	11	0.2	0.1	72	92	93	94	63	8	RAB
63	16	0.6	0.6	92	96	94	96	84		ABS/BOS
30	4	0.5	0.5	79	91	93	94	72	9	GAC
42	4	0.5	0.5	77	93	87	91	73	7	RAB
25	12	0.0	0.1	74	88	90	90	70		RAB
114	20	0.9	1.0	79	91	92	93	87	8	GAC
72	6	1.0	0.9	76	93	89	92	77	7	GAC
46	12	0.8	0.8	82	92	91	93	76	9	RAB
86	7	1.7	1.6	85	93	94	94	81	8	GAC
76	10	0.5	0.7	69	91	93	93	81	7	GAC
170	18	1.2	0.9	90	86	92	93	88	7	ALT
49	3	0.2	0.2	84	94	92	95	71	7	RAB
40	4	1.5	1.3	78	93	93	93	68	9	RAB
72	22	0.7	0.8	81	92	93	93	86		GAC
3651	11	1.7	1.8	99	94	89	94	99	8	GAC
88	8	0.7	0.7	84	90	88	92	87	7	GAC
30	5	1.2	1.1	71	94	94	95	71		RAB
72	15	0.6	0.6	80	94	94	96	77	7	GAC
121	37	0.8	0.6	89	94	94	95	80	9	GAC
42	9	2.1	2.1	72	89	94	95	75		GAC
86	3	0.4	0.2	92	94	93	95	84	9	RAB
1679	7	-0.1	-0.1	98	91	92	94	99	11	GAC
49	4	0.4	0.1	82	95	92	95	77	8	RAB
32	14	0.6	0.8	80	95	93	95	63	7	RAB
57	21	1.1	1.0	83	93	90	94	82	7	GAC
51	15	1.6	1.6	73	92	91	93	81	7	GAC
39	1	0.6	0.6	78	89	91	91	73	7	RAB
75	8	1.0	1.0	80	92	89	93	78	8	GAC
486	12	1.0	1.1	92	93	88	92	95	7	AGR
78	21	0.9	1.0	89	94	92	93	87	8	AGR
2323	4	0.7	0.4	98	87	93	94	99	7	RAB
2158	16	1.2	1.0	99	92	92	94	99	6	GAC
40	13	0.4	0.5	74	93	91	94	76		GAC
40	23	1.4	1.3	75	91	91	93	76	9	RAB
674	15	0.4	0.6	97	91	90	93	97	6	RAB
28	2	1.6	1.5	71	92	91	93	71	4	HIM

RIP%	Over Type	Mam Syst	Milk Rel	Spd	Temp	Like	Rel	Surv	Source
6	0.6	0.5	70	93	91	94	76	12	GAC
19	1.3	1.0	70	87	91	93	72		RAB
10	0.7	1.0	79	95	93	94	76		WAS
7	2.4	2.5	66	94	93	96	63	15	WAS
16	-0.9	-0.6	78	88	90	91	84		RAB
7	2.5	3.2	74	89	96	95	78	14	GAC
7	2.2	2.3	67	89	91	94	67		ALTA
13	0.4	0.5	79	89	88	93	83		GAC
11	1.3	1.1	96	92	93	94	97	17	AGR
14	0.8	-0.2	86	90	90	92	75		AGR
2	1.2	1.8	72	95	93	95	80	15	GAC
12	1.8	1.3	80	93	95	96	87	15	GAC

Key

Source of Bulls

GAC	GENETICS AUSTRALIA
RAB	RAB AUSTRALIA
ABS	ABS AUSTRALIA/BOS TRADING
WWS	WORLD WIDE SIRES AUSTRALIA
AGR	AGRI-GENE
HIA	HERD IMPROVERS AUSTRALIA
WAS	WOODLANDS AGRICULTURAL SERVICES
ALTA	ALTA GENETICS
SEM	SEMEX AUSTRALIA

A publishable ABV is defined as a minimum 63% reliability with daughters in at least 15 Australian herds.

$$ASI = 3 \times \text{Protein ABV} + 1 \times \text{Fat ABV} - 0.03 \times \text{Milk ABV}$$

Production Base Updated for the Year 2000

ABVs are expressed relative to each other using a base 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.

The ABV production base was updated in February 2000.

The new base is the average ABV of cows born in 1995. Cows included must also have an AB (NASIS) sire and be straightbred (e.g., breedcode of FFFF for Holsteins and JJJJ for Jerseys) and have had at least one lactation used in their ABV calculation.

Important: Please remember that updating the base does not rerank bulls or cows in any way. All are affected to exactly the same degree.

ADHIS Pty Ltd accepts no responsibility for any errors or omissions in this publication, whether negligent or otherwise.