Australian Dairy Herd Improvement Report 2009

Australian Dairy Herd Improvement Scheme

NATIONAL HERD IMPROVEMENT ASSOCIATION OF AUSTRALIA INC. NHIA

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NHIA Chairman's report

By Gordon Stewart
NHIA Chairman

The correct and permanent identification of a dairy heifer calf and linking that calf to a known sire and an identified dam is one of the major building blocks of the dairy industry.

This simple process is the foundation of all dairy data. Without it, this report could not be produced because without proper identification there can be no herd testing. Without herd testing, there would be no Australian Breeding Values (ABVs). Without ABVs, and the genetic improvement that they bring, there would not be a functional, productive dairy industry in Australia.

Australian dairy farmers should be rightly proud of the enormous improvement in the productivity of their dairy cows in recent years. Looking through these pages, the statistics in this report make for interesting reading. Take, for example, the table of Victorian production averages going back to 1930-35. Basically, milk production per cow has more than doubled since 1980 – as has herd size.

An average Australian dairy farmer is today milking twice as many cows, which produce double the amount of milk per cow than he was 30 years ago. How is that for productivity?

But the fact remains that productivity needs to be measured. And the way this is done is through herd testing cows with your local herd test service provider. The more cows that we collect and measure data from, the stronger and more reliable will be the results of our ABVs.

Herd test survey

The NHIA recently surveyed herd test service providers and one of the main issues highlighted in the final report was the critical lack of investment in research and development (R&D) in the herd testing sector.

While it must be acknowledged that there has been considerable dairy industry investment in the field of genomics in recent years, which has led to significant progress in this field, there has been much less emphasis on R&D in herd testing. This present gap in herd improvement research funding is a major issue, not just for service providers in the sector, but also for, the entire dairy industry. The lack of R&D in herd improvement will inevitably affect the productivity of the dairy farm sector in Australia.

This issue was highlighted in the recent report for Dairy Australia co-authored by Mark Paine and John Penry "Farmer decision-making for the selection of genetics in Australian dairy herds – integrating farm and advisory perspectives."

One of the key recommendations of this report involved funding research into new technologies to increase the uptake of herd testing among dairy farmers. The priority must be for industry to find the resources to innovate and encourage the adoption of new technology that will make herd testing quicker and easier for dairy farmers.

Dairy data

The NHIA is committed to working with industry partners to find ways that dairy data can flow more easily between farmers and industry partners and back. This was identified as an industry priority at the NHIA Members Forum earlier this year and a Working Group has been set up to progress the matter further.

This is a highly sensitive and important issue for the industry, but we look forward to further developments that will have industry support following a substantial collaborative process.

ADHIS Chairman's report

ADHIS strives to maximise the opportunity for dairy farmers to profit from independent, world-leading dairy genetic improvement services. Each time a farmer collects a milk sample for a herd test or scores a heifer for milking speed, the science of genetic improvement can then take place. When combined with the support and advice of industry, this science is the powerful foundation for the genetic evaluation, data service and extension functions provided by ADHIS.

In the past year ADHIS has been focusing on delivering key initiatives to the dairy industry. Early in the year, ADHIS co-hosted a national herd improvement conference with the NHIA and Holstein Australia. The conference agenda highlighted key areas of ADHIS's activity in line with its strategic plan, including genomics, the APR review and the introduction of Selectabull.

The inclusion of genomics into ADHIS's national genetic evaluation system and the use of this technology by industry are imminent. Using DNA data to predict an animal's genetic merit provides new opportunities in the breeding of cattle and is another step in the ever-evolving development of genetic evaluation. The first public release of ABVs including genomic information (to be known as ABV(g)s) is expected in August 2010.

Another key ADHIS initiative this year was the review of the Australian Profit Ranking (APR). This review has provided an opportunity to take stock of the future needs of dairy herds in this country. Throughout this past year, the ADHIS Board, along with its research and industry stakeholders, has carefully considered the economic trends and drivers of profit in order to refine and improve the national breeding objective.

Farmers continue to be confronted by new technology and an ever-growing supply of information. ADHIS understands this challenge and is responding with additional extension initiatives designed to help farmers make the most of genetic improvement. A major achievement has been the release of the web-based sire selection tool Selectabull. I encourage you to use Selectabull when determining a long-term breeding objective and finding sires that will assist in achieving this goal.

I would like to take the opportunity to thank out-going chairman Allan Burgess for his leadership and input into ADHIS's direction over the past six years. I would also like to thank the ADHIS staff and stakeholder organisations for their input and assistance over the past year.

Next year will provide many challenges and opportunities. The ADHIS Board continues to develop the business in order to provide farmers not just with leading-edge genetic evaluation services, but also with information, education and extension messages that will increase the understanding and utilisation of breeding values for your ultimate benefit.

By Wes Judd
ADHIS Chairman

NHIA activities

By Carol Millar
NHIA General Manager

Dairy farmers today rely on current information more than ever. Current information on which to base critical management decisions every day can be the difference between profit and loss in these volatile times. And if these extraordinary times have proved anything, it is that dairy farmers need to be able to focus on the things they can control, such as cow nutrition levels, cow environment and cow selection, and not spend valuable time worrying about the things they cannot control so easily.

Herd testing is a vital tool

The best way for dairy farmers to understand exactly what is happening on their farm is to herd test regularly. Each test is a benchmarking opportunity to work out which cows are making a profit and which are not and then to be able to do something about it. It is the best and most effective way of managing individual cow cell counts and identifying those cows that are contributing most to high bulk milk cell count (BMCC), which may be preventing the farm from receiving premium milk prices. It is an opportunity to understand how crucial decisions of the past, such as which bulls were used for the AI program three years ago, have had the biggest impact on production now.

This year, 2009, saw the first-ever Herd Test Service Provider Survey carried out in Australia. It provided an opportunity for the herd test sector to benchmark its own performance against each other, as well as providing important signposts for the direction ahead. In the same way that a farmer benefits from having more information for decision making, so too will this survey benefit service providers.

Herd 09 success

In April 2009, NHIA worked with its valued industry partners, ADHIS and Holstein Australia, to present the Herd 09 Conference, which provided the herd improvement sector with a valuable opportunity to exchange information and ideas with more than 200 of their industry colleagues.

Lucy Andrews from Holstein UK was the highlight speaker of the conference and pulled no punches as she urged the audience to challenge themselves

NHIA and NCDEA offer AI training.

to manage dairy data better in order to serve their farmer customers.

Jay Mattison from the National Dairy Herd Information Association (NDHIA) in the USA gave us valuable insights into how herd testing works in that country and how growing herd sizes are increasing the opportunities for service providers if they respond to market signals.

An extremely interesting session about genomics brought us up to date on the latest developments in the field thanks to the panel of speakers made up of Pierre Laliberte from Canada, along with Ray Johnson and Gert Nieuwhof.

Top-notch Australian speakers, such as Prof. Mike Goddard on the APR review and Chris Kendall on how to manage AI synchronisation programs, among others, all played their part in what was one of the most interesting industry events in years.

Industry education and training

In taking up the challenge to deliver training courses in artificial insemination, NHIA, together with the National Centre for Dairy Education Australia (NCDEA), has developed an effective, hands-on practical, three-day course that has delivered training to Victorian farmers in both autumn and spring. The next stage will be to roll this successful training course out to other states in Australia.

A further new development in 2009 was the development of semen and embryo handling courses for herd improvement staff and following the pilot program, we expect further development in 2010.

The next challenge to be tackled will be the development of training courses to assist herd test service providers in staff training, which will encourage higher standards across the board in herd test.

The delivery of high-quality education and training programs remains one of the main priorities for NHIA in the future.

ADHIS activity report

By Daniel Abernethy, ADHIS General Manager

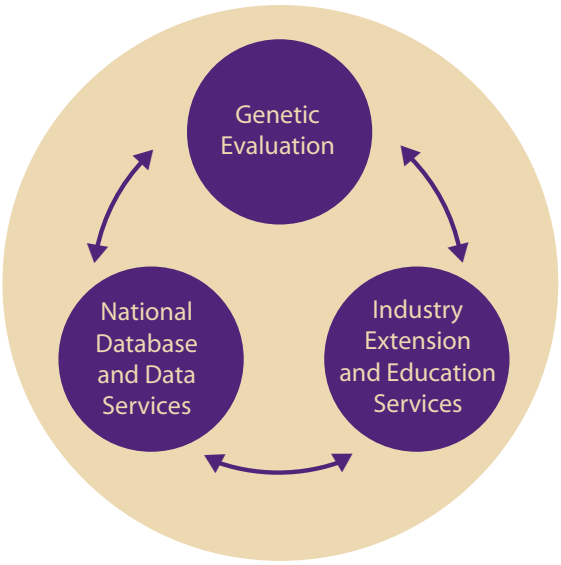
ADHIS is charged with the task of maximising the opportunity for Australian dairy farmers to profit through independent world-leading dairy genetic improvement services.

The 2008-2013 ADHIS Strategic Plan focuses work in three key areas, namely:

- improving genetic evaluation systems;
- providing efficient management of Australia's herd improvement data system and services; and
- maximising the understanding and use of ABVs.

ADHIS projects and activities aimed at achieving each of these goals are described in this report.

ADHIS Strategic Plan



Staff updates

In January 2009, ADHIS announced the appointment of Adam Daniel to the newly created position of Project Officer – Genetics Learning Package.

Adam is an experienced breeding adviser who is broadly skilled within the herd improvement industry, including wholesale and retail semen sales, herd recording and related on-farm services. Over his 15-year career in the herd improvement industry, Adam has held positions with BOS Trading, ABS Australia and Western Herd Improvement.

As the inaugural Young Dairyfarmer Development Program officer in Gippsland, Adam developed a broader interest in helping young dairy farmers improve their skills and build networks within the dairy industry. He has been a significant contributor to the organisation of the National All Dairy Breeds Youth Camp.

In his new position, Adam supports the implementation of ADHIS's extension and education activities.

Genetic evaluation

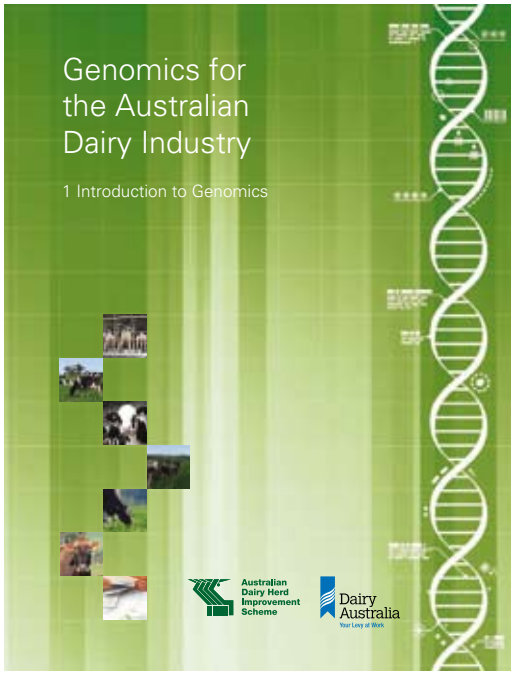
2009 ABV releases

ADHIS released Australian Breeding Values (ABVs) in April and August 2009 to help dairy farmers make objective decisions about which sires to use over their herds. Interbull ABV(i)s were published in January, April and August. ADHIS published an ABV summary flyer following each ABV release. The August edition was distributed to all farmers in *The Australian Dairyfarmer* magazine in September 2009. The August ABVs are included from page 23.

Genomics

Genomics is a new technology that uses DNA data to assist in the calculation of ABVs for cows and bulls. This technology is a significant development in genetic evaluation and is starting to be used in countries all around the world.

Researchers have used the ADHIS database to identify differences in DNA (gene markers) that are linked to the genes affecting traits of economic importance, such as production and fertility. By testing for the presence of these gene markers, the genetic merit (ABVs) of an animal can be estimated.



Genomics is explained in ADHIS publications

Genomic selection provides the opportunity to make faster genetic progress by using younger bulls with greater confidence. Initially, genomic selection will be used by AB companies to screen young bulls destined for progeny testing. In time, genomic selection is expected to fast-track genetic gain in dairy herds as farmers begin using the best bulls for their breeding objective at a younger age.

Australia is at the leading edge of genomics. Research has been underway for several years now and its implementation has already begun. Since 2007, many young sires have been pre-selected based on gene marker testing. The Department of Primary Industries – Victoria, the CRC for Innovative Dairy Products, Dairy Australia, ADHIS and Genetics Australia have commenced the genomics implementation project in Australia. This project aims to combine the knowledge and experience of each group to finalise and incorporate genomics into the Australian genetic evaluation system.

ADHIS is taking a step-wise approach to this implementation, with ABVs based on this new technology expected for public release from 2010. As part of this process ADHIS has commenced a communication strategy to provide information to the dairy industry as it becomes available.

What will genomics look like?

From 2010, bulls with pedigree and genomic information will attain breeding values. If insufficient daughter information is available to achieve 'proven' status, they will be published as ABV(g). This is similar to the publication of ABV(i)s for bulls for which pedigree and overseas performance daughter is available.

Once sufficient daughter information is available in Australia, bulls with an ABV(g) will move to an ABV.

All ABVs, whether they be for proven, overseas or genomically selected bulls, will be published through the ADHIS website and its printed summaries.

APR review

Australian Breeding Values (ABVs) express a sire's genetic potential for a single trait, such as milk protein content or milking speed. But most dairy farmers want to improve more than one trait in their herd at once.

A breeding index reflects a sire's genetic potential for a combination of several traits, making it easier for dairy farmers to compare the suitability of different sires for their herd.

The Australian Profit Ranking (APR) is currently the main breeding index published by ADHIS. The APR is a single index that reflects nine traits that influence

Sample ABV Publication, including genomic information

August 2010 ABVs - Active Publishable Holstein bulls - Top 5 APR - Proven in Australia

to be listed, a bull must be actively marketed and have a publishable production, workability and type ABV. Official ABVs for all top bulls can be found on t

Rank	Bull ID	Bull Name	Genetic Codes	Genomic Codes	APR $	Rel	ASI $	Prot kg	Prot %	Milk L	Fat kg	Fat %	Rel	No. Dtrs
1	ALPHA	ALPHA		g	**147**	69	117	33	0.16	910	41	0.03	73	42
2	BETA	BETA	TVTL	g	**134**	85	136	31	0.34	482	46	0.36	93	205
3	GAMMA	GAMMA	TVTL	g	**128**	97	97	40	-0.05	1598	23	-0.66	99	1158
4	DELTA	DELTA	CV		**127**	92	116	29	0.28	512	34	0.18	98	1120
5	EPSILON	EPSILON		g	**123**	75	90	32	-0.08	1321	37	-0.28	81	62

August 2010 ABV(i)s - Active Holstein bulls - Top 5 APR - Proven Overseas

to be listed, a bull must be actively marketed and have a publishable production ABV(i). Official ABVs for all top bulls can be found on the ADHIS website

Rank	Bull ID	Bull Name	Genetic Codes	Genomic Codes	APR $	Rel	ASI $	Prot kg	Prot %	Milk L	Fat kg	Fat %	Rel	No. Dtrs
1	ZETA	ZETA			**122**	74	105	27	0.25	504	31	0.13	80	57
2	ETA	ETA	TVTL		**122**	64	91	27	0.23	543	15	-0.12	70	31
3	THETA	THETA	CV		**122**	85	59	23	-0.12	1069	27	-0.27	91	114
4	IOTA	IOTA			**120**	75	99	30	0.14	837	29	-0.09	80	60
5	KAPPA	KAPPA			**119**	92	92	19	0.32	87	25	0.31	97	359

August 2010 ABV(g)s - Active Holstein bulls - Top 5 APR - Genomically Tested

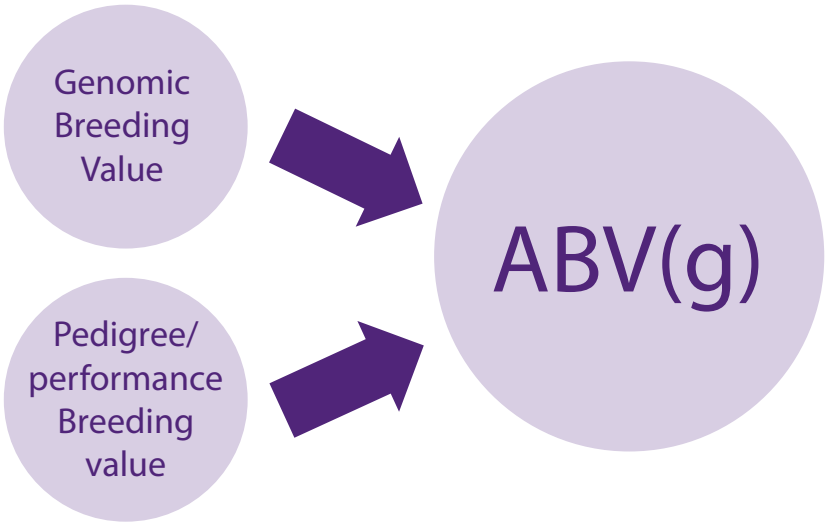
to be listed, a bull must be actively marketed and have a publishable production ABV(g). Official ABVs for all top bulls can be found on the ADHIS website

Rank	Bull ID	Bull Name	Genetic Codes	Genomic Codes	APR $	Rel	ASI $	Prot kg	Prot %	Milk L	Fat kg	Fat %	Rel	No. Dtrs
1	LAMBDA	LAMBDA		g	**205**		77	24	0.11	654	21	-0.10	60	3
2	MU	MU		g	**204**		107	26	0.16	662	43	0.22	60	0
3	NU	NU		g	**203**		107	26	0.16	662	43	0.22	60	1
4	XI	XI		g	**202**		107	26	0.16	662	43	0.22	60	0
5	OMICRON	OMICRON	TVTL	g	**201**		107	26	0.16	662	43	0.22	60	0

net farm profitability, including production (milk, fat and protein yields) and non-production traits. Non-production traits include survival (longevity), fertility, somatic cell count, liveweight (as an indicator of efficiency), temperament and milking speed. The contribution of each trait towards the final APR value is 'weighted' according to its relative contribution to profitability and the relationship that exists between traits.

Since its introduction in 2001, the APR has proven to be an accurate and reliable index of a sire's potential genetic contribution to dairy farm profitability.

A significant review of the APR that updates the economic parameters has occurred over the past two years. The research has been communicated by ADHIS in a wide range of stakeholder, regional and industry forums, along with smaller group and individual meetings. Further information has been provided in the media and through the ADHIS newsletter *Genemail*. Feedback has been collated and researchers have responded by investigating further approaches. ADHIS will consider the results of this process in the short-term with an updated APR planned to be released in 2010.



Improved capabilities allow the publication of ABV(g)s from genomic, pedigree and performance information.

Cow ABVs

The Australian Breeding Values (ABVs) for bulls is the most common service provided by ADHIS. However, farmers can improve their breeding decisions by developing a better understanding of cow ABVs – the genetic merit of a cow based on pedigree, her own performance and the performance of her known relatives. Cow ABVs are a prediction of the genetic merit of the cow and can be used to estimate how the future progeny of an animal will perform compared with all other animals of that breed throughout Australia. Until now, cow ABVs have been limited to production traits. Due to recent developments of the ADHIS genetic evaluation system, it will soon have the ability to produce cow ABVs for all traits. Further announcements are expected as the implementation of this development is finalised.

National Database and Data Services

Genomics Database Project

The primary objective of the Genomics Database Project is to build a system that is able to incorporate genotype information into ABVs. The project, which is due for completion in early 2010, will be capable of storing genotype data, as well as using the latest genetic models to calculate breeding values. As part of a continuous improvement process, quality assurance systems associated with breeding value calculations have also been further enhanced.

Web-based NASIS services

To facilitate the unique national identification of bulls, ADHIS manages the National Artificial Sire Identification Scheme (NASIS). NASIS is a register of bulls for use in artificial insemination that is used by semen marketers throughout Australia to provide the common identification of AI sires. ADHIS provides this file to herd improvement centres around Australia for use in pedigree and performance recording.

The aim of the electronic NASIS service, which is to be launched early in 2010, will be to improve the speed and accuracy of NASIS data entry.

Improving data

Improving data has a positive impact on the reliability of breeding values, accuracy of production statistics and data supplied to research programs. This has long-term benefits for both farmers and the dairy industry. As the manager of the national genetic evaluation database, ADHIS is committed to improving both the quality and quantity of data collected and used in its various activities.

To help industry understanding data issues, ADHIS has been active in discussing them with a range of stakeholders, publishing documents to improve understanding of the current data flows and providing specific feedback to organisations through which improvements in data collection can be made. Industry's appetite for data continues to strengthen, making this an area of ongoing strategic importance for ADHIS.

Education and extension

Genemail

Genemail, ADHIS's e-mail newsletter, was launched November 2008 to improve stakeholder communication. This monthly newsletter addresses current issues, project updates and common myths, as well as publicising coming events.

Joining the *Genemail* distribution list is free and it can be accessed by registering on the ADHIS website or contacting ADHIS.

Herd 09

Genomics, improving data collection and a review of the Australian Profit Ranking (APR) were top of mind at Bendigo in April when 180 dairy service providers, farmers and researchers met for Herd 09. This conference was jointly hosted by ADHIS, the National Herd Improvement Association (NHIA) and Holstein Australia, with invited speakers coming from Canada, the USA, United Kingdom and Australia.

From the conference presentations and discussion, some general themes emerged:

1. Data is critical to on-farm management decisions, genetic evaluations and industry research. Co-operation by industry and farmers is needed to improve the quality and quantity of data.
2. Genomics allows the use of DNA marker information to more accurately select young bulls for progeny testing.
3. The Australian Profit Ranking has undergone a review that includes new economic modelling to more effectively account for input costs.

Each of these key themes is strongly linked to the ADHIS Strategic Plan and so has formed active areas of ADHIS's work during 2009 and will continue to be progressed in the coming period.

Selectabull

Selectabull, a new web-based tool to simplify bull selection, is now available on the ADHIS website, www.adhis.com.au. Selectabull offers dairy farmers the capacity to easily access bull ABVs so to find the best available bulls for their farm. This free tool is available for use by dairy farmers and herd improvement organisations.

Selectabull focuses on two tasks, namely:

1. Develop a strategic breeding objective – a 'wizard' tool asks a short series of questions to develop a list of desirable traits that become the user's breeding objective.
2. Find bulls that meet the breeding objective using ABVs – this can be achieved using either a quick search or customised index. A short list of bulls that meet the input criteria is reported.

Herd 09 provided a forum to introduce Selectabull to the dairy industry. Since this time, the tool has been tested and refined with farmers and herd improvement service providers and it was launched before to the Spring 2009 mating season.

SELECTABULL
An Australian Dairy Herd Improvement Scheme Tool

ADHIS supported Selectabull's launch to the industry through a number of activities, including:

- An official launch at the Cobden AB Bull Night in Dixie, south-west Victoria.
- Workshops and presentations for farmers.
- Service provider presentations.
- One-on-one support.
- Industry awareness through the ADHIS website, *Genemail* and industry media.

DEC partnership

Consultation with the Dairy Extension Centre (DEC) has resulted in it providing support for the ADHIS genetics extension project since 1 July 2009.

Within the DEC Animal Performance business area, the project involves the active participation of DPI-V Extension Officers in a bull selection extension initiative for farmers over the next three years. The project includes a capacity building component to boost the capability of DPI-V Extension Officers in the area of genetic improvement.

International genetic evaluation – Interbull

ADHIS is a member of Interbull, a sub-committee of the International Committee for Animal Recording (ICAR). Interbull is a world-wide network providing genetic information services for the improvement of livestock.

In 2009, Interbull developed and released its Strategic Plan. Within this Plan, the following long-term objectives were identified:

- establish enhanced international genetic evaluation, including genomic information, by 2011;
- achieve ISO certification by 2011;
- establish an international beef cattle evaluation service by 2011;
- create a world genetic monitoring information service by 2012; and
- offer international evaluations for livestock in currently non-participating countries on a research basis by 2013.

ADHIS contributed to the 2009 Interbull genomics workshop, where member countries discussed the approach Interbull should develop to accommodate this new area of research and maintain international evaluations for the benefit of dairy farmers.

Interbull has successfully concluded a project that will enable the genetic evaluation of two workability traits, milking speed and temperament. ADHIS has participated in this pilot study and is currently considering the implementation of ABV(i)s for these traits.

Support for other research and development projects

Over the past 12 months ADHIS has continued to support dairy research projects, including the national mastitis and fertility extension programs Countdown Downunder and InCalf.

Each year ADHIS produces reports for Countdown Downunder about national, state and regional data on cell counts, as well as data relating to herd size, production levels and other variables. ADHIS also conducts an analysis of the national database used by Countdown Downunder for the annual Milk Quality Awards.

As in previous years, ADHIS continued to assist InCalf with the calculation of the national fertility statistics report known as NATSCAN. The NATSCAN analysis utilises the national dataset stored on the ADHIS database to access the fertility performance of the Australian population, including breakdowns by region, herd size, production level and other variables.

ADHIS Board and Committees

ADHIS Pty Ltd Board of Management

The Board met four times during the year to progress ADHIS's Strategic Plan, including the review of the Australian Profit Ranking, the implementation of genomics, and the implementation of extension and education activities.

Members: Wes Judd (Chairman from August 2009), Allan Burgess (Chairman until August 2009), Peter Aldridge, John Harlock, Stewart McRae, Stuart Tweddle, Ian Carkeek, Ivan Jones and Daniel Abernethy (General Manager and Board Secretary).

ADHIS Staff

Daniel Abernethy, ADHIS General Manager
Sally Bernardo, Executive Assistant

Genetic Evaluation
National Data and Database Service

Gert Nieuwhof, Geneticist and Team Leader

Kon Konstantinov, Statistician

Judith Schweitzer, Information Scientist

Paul Koh, Data and Services Manager

Erica Jewell, Data and Services Manager

Education and Extension

Michelle Axford, Project Leader

Adam Daniel, Project Officer

Industry Consultation

Annual Stakeholder Meeting

Effective industry consultation is an underpinning element of the ADHIS Strategic Plan. ADHIS achieves industry consultation across its activity areas through its committees, specific meetings with individuals and organisations, conferences such as Herd 09 and the annual ADHIS stakeholder meeting.

The annual stakeholder meeting gathers a larger stakeholder group to provide strategic advice and input to the ADHIS Board. This year's stakeholder meeting was held in October 2009, and representatives of AB companies, data processing centres, semen resellers, state dairy organisations, farmers and the ADHIS Board were invited to discuss the ADHIS Strategic Plan, the review of the Australian Profit Ranking (APR) and new technology, namely the introduction of genomics from 2010.

Genetics Committee

This committee met in March and September 2009 to review genetic developments within ADHIS, namely the incorporation of genomic data into the calculation of Australian Breeding Values and the outcomes of the APR review project. Supporting discussions by the Genetics Committee were Gerhard Moser, Herman Raadsma, Jennie Pryce, Phil Bowman and Ben Hayes.

Members: Mike Goddard (Chairman, University of Melbourne), Julius Van der Werf (University of New England), Bruce Tier (University of New England), Rob Woolaston (consultant), Mekonnen Haile-Mariam (University of Melbourne), Kevin Beard (ADHIS Consultant) and ADHIS Staff.

Records Standards Committee

This committee met in mid-2009 to discuss data issues relating to herd improvement records and the development stage of the genomics program, as well as standardised lactation and production index (PI) calculations.

Members: Ivan Jones (ADHIS, Chairman), John Stevenson (Dairy Express), Peter Nish (Tasherd), Frank Treasure (HISWA and CHISWA), Mike Larcombe (Mistro Group), David Parkinson (AUSherd) and ADHIS staff.

Type Assessment Committee

In 2009, meetings were held with Holstein Australia and Jersey Australia, two breed societies that provide linear type data to ADHIS. Linear type evaluations for the coming year were reviewed, with improvements made to the organisational aspects of data collection that should improve the amount collected.

Education and Extension Reference Group

This committee met three times during 2009 to discuss the development and implementation of extension and education activities.

Members: Ian Carkeek (ADHIS, Chairman), Stewart McRae (ADHIS), Stuart Tweddle (ADHIS), David Nation (Dairy Australia), Peter Thurn (Genetics Australia), Bruce Ronalds (ABS Australia), Carol Millar (NHIA), Daryl Hoey (ADF), John Penry (Rural Innovation Research Group), Joanne Campbell (ADHIS consultant), Tracey Marsden (NCDEA), Ann McDowell (DEC), Darold Klindworth (DEC), Matt Shaffer (Holstein Australia) and ADHIS staff.

Well-grown heifers

Big Girls XL

This year's ADHIS national data shows that on many farms heifers are not realising their full potential for milk production and are starting their reproductive life later.

Because heifers are so important to a herd's reproductive performance, productivity and profitability, early this year InCalf produced a resource package, *Heifers: Big Girls XL*, to remind dairy farmers and advisers of the benefits of growing well-framed, heavier heifers.

The results below show there are gains to be made from planning heifer rearing and achieving target growth weights.

Heifers are older at first calving

The age at first calving influences the lifetime profitability of the cow. Ideally heifers calve between 22 and 27 months of age. The age at first calving could be decreased in the majority of heifers given that the average age is currently 26 months for Holsteins and 25 months for Jerseys (Figure 1).

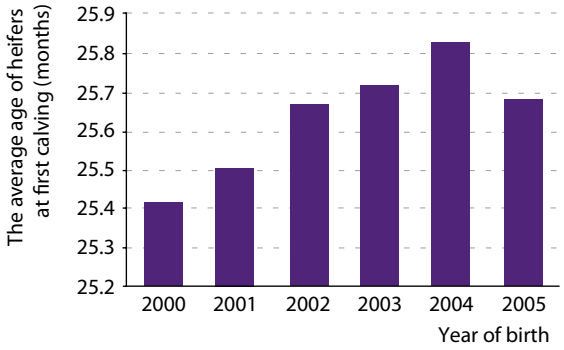


Figure 1: Heifers are older at first calving than they were five years ago (Holsteins)

Benefits of well-grown heifers

- Get in calf easier the first time
- Need less help calving
- Produce more milk in their first lactation
- Cope better with herd competition
- Get back in calf sooner for their second lactation
- Are less likely to leave the herd before their second calving

By Barry Zimmermann
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mobile: 0418 124 809

Milk production is below potential

There is a huge potential to increase the milk production of heifers, with the heifers on most farms producing less than the target ratio of 83% of mature cow production (Table 1).

Many nutritionists regard this target as conservative and would argue heifers are capable of producing 90-100% of the mature cow production.

The factors most likely to influence milk production are genetics, quality and quantity of feed, the size of the heifers at calving, and the number of days in milk.

Table 1: Most farms are not achieving their potential milk production.

First calver milk production compared with mature cows	Median (half of farms are below this value and half are above)		Top achievers (Top 12% of farms)	
	2003	2008	2003	2008
Milk production of heifers	78%	79%	85%	86%

Note: To achieve a three-star rating on an InCalf Fertility Focus Report the milk production of heifers must be 77% of mature cows (older than four years), and for five stars it must be at least 83% of mature cow production.

Overall

These results show that most farms are not realising the full potential for heifer milk production and, on average, heifers are not calving before 26 months of age. In most cases, the size of the heifers is the factor likely to be limiting milk production.

In most dairying regions of Australia, heifers need to be fed high-quality supplements for at least six months of the year to achieve their target weights: especially after weaning and when there is a shortage of quality pasture. Table 2 shows the heifer growth target weights.

The InCalf initiative *Heifers: Big Girls XL* provides resources to farmers and advisers to help realise the benefits of well-grown heifers. These can be obtained from www.incalf.com.au.

Table 2: Heifer growth target weight (kg).

Age (months)	Holstein-Friesians	Jerseys
3	100	80
4	120	95
5	140	110
6	160	125
7	180	140
8	200	155
9	220	170
10	240	185
11	260	200
12	280	215
13	300	230
14	320	245
15	340	260

Heifers need high-quality supplements for at least six months of the year

Table 1: National and state totals and production averages											
	Herds and cows recorded					Production averages					
State	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	2,313	340,177	138,435	478,612	206.9	6,458	4.1	266	3.4	218	312
New South Wales	529	78,689	24,512	103,201	195.1	7,255	4.0	287	3.3	237	340
Queensland	325	29,252	18,045	47,297	145.5	6,125	4.2	259	3.5	213	330
South Australia	259	45,578	9,246	54,824	211.7	7,275	3.9	285	3.3	238	333
Tasmania	219	44,288	12,834	57,122	260.8	6,165	4.1	252	3.4	212	294
Western Australia	134	28,045	3,622	31,667	236.3	7,475	3.8	281	3.2	236	333
Australia	3,779	566,029	206,694	772,723	204.5	6,645	4.1	270	3.4	223	318
Victorian regions											
Northern	872	113,015	47,049	160,064	183.6	6,662	4.2	278	3.4	224	318
Eastern	848	131,622	47,470	179,092	211.2	6,242	4.1	257	3.4	211	308
Western	593	95,540	43,916	139,456	235.2	6,515	4.1	266	3.4	221	309

Table 1a: National totals and production averages 1999 to 2009.											
	Herds and cows recorded					Production averages					
Year	Number of herds	Included in averages	Excluded from averages	Total cows	Herd size	Milk litres	Fat %	Fat kg	Protein %	Protein kg	Lactation length days
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
2003/2004	5,704	722,074	298,727	1,020,801	179	6,048	4.0	242	3.3	201	310
2004/2005	5,080	725,374	224,352	949,726	187	6,257	4.0	251	3.3	207	314
2005/2006	4,746	701,852	208,536	910,388	191.8	6,402	4.0	255	3.3	212	316
2006/2007	4,462	655,212	222,592	877,804	196.7	6,452	4.0	257	3.3	216	312
2007/2008	3,966	578,263	207,199	785,462	198	6,596	4.0	264	3.3	220	321
2008/2009	3,779	566,029	206,694	772,723	204.5	6,645	4.1	270	3.4	223	318

Table 2: Number of herds in fat production categories by region.											
	Total herds	Average fat production (kg per cow)									
State		< 125	125-149	150-174	175-199	200-224	225-249	250-274	275-299	300-324	> 324
Victoria	2,313	54	68	92	136	207	329	360	315	222	163
New South Wales	529	12	8	23	19	59	51	78	90	62	71
Queensland	325	3	3	8	25	31	42	29	19	15	17
South Australia	259	0	8	8	9	21	26	42	53	44	34
Tasmania	219	3	5	9	20	36	35	23	15	19	21
Western Australia	134	0	0	4	2	8	12	21	34	25	18
Australia	3,779	72	92	144	211	362	495	553	526	387	324
Victorian regions											
Northern	872	16	26	21	33	59	86	139	120	93	82
Eastern	848	18	19	43	61	90	150	138	122	80	36
Western	593	20	23	28	42	58	93	83	73	49	45

Table 3: Number of herds in protein production categories by region.											
	Total herds	Average protein production (kg per cow)									
State		< 100	100-124	125-149	150-174	175-199	200-224	225-249	250-274	275-299	> 299
Victoria	2,313	55	83	136	233	363	394	355	186	90	51
New South Wales	529	11	14	25	41	77	85	93	64	46	17
Queensland	325	4	2	15	25	50	46	25	12	7	6
South Australia	259	0	11	8	21	28	46	60	41	20	10
Tasmania	219	4	7	15	33	43	25	14	12	21	12
Western Australia	134	0	0	6	3	17	21	38	23	13	3
Australia	3,779	74	117	205	356	578	617	585	338	197	99
Victorian regions											
Northern	872	15	31	38	62	115	154	129	69	34	28
Eastern	848	19	27	59	100	163	147	142	64	24	12
Western	593	21	25	39	71	85	93	84	53	32	11

Table 4: Production averages by age group.							
Age group	Number of cows	Milk litres	Production averages				
			Fat %	Fat kg	Protein %	Protein kg	Lactation length days
2-year-old	97,378	5,882	4.01	236	3.35	197	323
3-year-old	101,372	6,478	4.05	262	3.38	219	321
Mature cow	367,279	6,893	4.08	282	3.35	231	316
Total	566,029	6,645	4.07	270	3.35	223	318

Table 5: Production averages by age group and mating type.					
		Average fat (kg)		Average protein (kg)	
Age group	Number of cows	Artificially bred stock	Naturally bred stock	Artificially bred stock	Naturally bred stock
2-year-old	97,378	241	220	202	182
3-year-old	101,372	271	243	228	201
Mature cow	367,279	295	262	242	214
Total	566,029	279	254	231	208

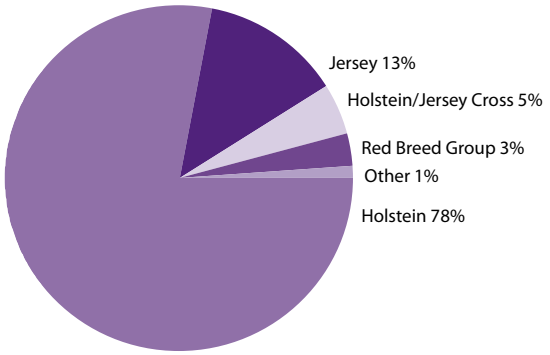
Table 6: Production averages by percentage of artificially bred cows in herds.				
Percentage of artificially bred cows in herd	Number of herds	Production averages		
		Milk litres	Fat kg	Protein kg
< 10	521	5,685	234	193
10-19	179	6,060	246	202
20-29	203	6,137	248	204
30-39	200	6,016	247	201
40-49	248	6,479	266	217
50-59	348	6,796	274	226
60-69	400	6,916	278	232
70-79	450	6,954	279	232
80-89	536	6,974	282	233
> 89	694	6,888	282	232
Total	3,779	6,645	270	223

Table 7 : Production averages by breed.

Breed	Number of cows	Production averages					
		Milk litres	Fat %	Fat kg	Protein %	Protein kg	Lactation length days
Holstein	381,337	7,080	3.94	279	3.29	233	322
Jersey	63,235	5,123	4.88	250	3.74	192	306
Holstein/Jersey Cross	23,143	6,079	4.44	270	3.54	215	305
Guernsey	1,485	5,309	4.34	230	3.43	182	315
Ayrshire	2,806	5,393	4.13	223	3.35	181	308
Dairy Shorthorn	295	4,535	3.86	175	3.21	145	295
Illawarra	5,399	6,189	4.02	249	3.32	206	319
Unknown Breed	77,759	6,141	4.07	250	3.35	206	312
Aust Red Breed	6,958	5,650	4.15	234	3.47	196	303
Brown Swiss	3,428	6,146	4.23	260	3.49	214	327
Other	184	4,687	4.89	235	4.16	184	298
Total	566,029	6,645	4.07	270	3.35	223	318

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 before July 1.
2. A cow is only counted once where:
   - the same data Is supplied for the cow in more than one herd; or
   - 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 that 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; or
   - 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;
   - a heifer calved at less than 18 months of age; or
   - 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.



Distribution of breeds

Table 8: Production averages by breed, age group, mating type and registration.

Breed	Age	Number of cows	Production Averages					
			Milk litres	Fat %	Fat kg	Protein %	Protein kg	Lactation length days
Holstein	2-year-old	72,227	6,193	3.88	241	3.30	204	326
	3-year-old	73,318	6,862	3.92	269	3.33	228	324
	Mature cow	235,792	7,420	3.96	294	3.28	243	320
	Total	381,337	7,080	3.94	279	3.29	233	322
	Artifically bred	277,652	7,261	3.93	285	3.29	239	324
	Naturally bred	103,685	6,597	3.97	262	3.30	217	316
	Pure bred	63,169	8,005	3.84	308	3.22	258	346
	Grade	318,168	6,897	3.96	273	3.31	228	317
Jersey	2-year-old	12,262	4,599	4.85	223	3.69	170	314
	3-year-old	11,477	4,992	4.88	244	3.75	187	307
	Mature cow	39,496	5,324	4.89	260	3.75	200	304
	Total	63,235	5,123	4.88	250	3.74	192	306
	Artifically bred	43,425	5,247	4.88	256	3.74	196	308
	Naturally bred	19,810	4,853	4.87	236	3.72	181	303
	Pure bred	14,702	5,554	4.93	274	3.75	208	323
	Grade	48,533	4,993	4.87	243	3.73	186	302
Holstein/Jersey Cross	2-year-old	3,909	5,332	4.36	232	3.49	186	312
	3-year-old	4,057	5,832	4.47	261	3.58	209	307
	Mature cow	15,177	6,337	4.45	282	3.54	224	302
	Total	23,143	6,079	4.44	270	3.54	215	305
	Artifically bred	12,069	6,259	4.44	278	3.55	222	305
	Naturally bred	11,074	5,883	4.44	261	3.52	207	304
	Pure bred	0	0	0	0	0	0	0
	Grade	23,143	6,079	4.44	270	3.54	215	305
Guernsey	2-year-old	235	4,691	4.36	204	3.42	161	321
	3-year-old	320	4,929	4.54	224	3.60	177	316
	Mature cow	930	5,597	4.27	239	3.38	189	313
	Total	1,485	5,309	4.34	230	3.43	182	315
	Artifically bred	783	5,608	4.31	242	3.38	190	320
	Naturally bred	702	4,977	4.35	217	3.48	173	310
	Pure bred	318	5,317	4.26	226	3.36	179	331
	Grade	1,167	5,307	4.37	232	3.46	183	311
Ayrshire	2-year-old	494	4,708	4.25	200	3.41	160	319
	3-year-old	580	5,049	4.18	211	3.36	170	309
	Mature cow	1,732	5,704	4.08	233	3.34	191	304
	Total	2,806	5,393	4.13	223	3.35	181	308
	Artifically bred	1,531	5,628	4.13	233	3.36	189	312
	Naturally bred	1,275	5,112	4.12	211	3.34	171	302
	Pure bred	693	5,846	4.11	240	3.31	194	325
	Grade	2,113	5,245	4.14	217	3.37	177	302

Table 8: Production averages by breed, age group, mating type and registration. (continued)

Breed	Age	Number of cows	Production Averages					
			Milk litres	Fat %	Fat kg	Protein %	Protein kg	Lactation length days
Illawarra	2-year-old	705	5,412	4.06	219	3.33	180	328
	3-year-old	1,122	5,834	4.06	237	3.37	196	329
	Mature cow	3,572	6,453	4.00	258	3.32	214	314
	Total	5,399	6,189	4.02	249	3.32	206	319
	Artifically bred	2,836	6,516	3.97	259	3.29	214	322
	Naturally bred	2,563	5,827	4.04	236	3.35	195	316
	Pure bred	2,294	6,538	3.97	259	3.27	214	323
	Grade	3,105	5,930	4.05	240	3.36	199	316
Unknown Breed	2-year-old	5,101	5,540	4.00	221	3.35	186	320
	3-year-old	8,205	5,949	4.02	239	3.35	199	322
	Mature cow	64,453	6,213	4.08	253	3.35	208	310
	Total	77,759	6,141	4.07	250	3.35	206	312
	Artifically bred	1,444	6,799	3.99	272	3.37	229	328
	Naturally bred	76,315	6,128	4.07	249	3.35	205	312
	Pure bred	0	0	0	0	0	0	0
	Grade	77,759	6,141	4.07	250	3.35	206	312
Aust. Red Breed	2-year-old	1,871	5,217	4.18	218	3.45	180	308
	3-year-old	1,505	5,621	4.15	233	3.50	197	305
	Mature cow	3,582	5,889	4.15	244	3.48	205	298
	Total	6,958	5,650	4.15	234	3.47	196	303
	Artifically bred	5,941	5,681	4.15	236	3.47	197	303
	Naturally bred	1,017	5,470	4.13	226	3.45	189	300
	Pure bred	844	6,929	3.97	275	3.48	241	320
	Grade	6,114	5,474	4.18	229	3.47	190	300
Brown Swiss	2-year-old	515	5,310	4.20	223	3.46	184	329
	3-year-old	685	5,604	4.24	238	3.55	199	329
	Mature cow	2,228	6,506	4.24	276	3.49	227	327
	Total	3,428	6,146	4.23	260	3.49	214	327
	Artifically bred	2,149	6,274	4.20	264	3.47	218	329
	Naturally bred	1,279	5,932	4.26	252	3.51	208	325
	Pure bred	1,036	6,864	4.18	287	3.43	236	348
	Grade	2,392	5,836	4.21	246	3.48	203	319
Other Breeds	2-year-old	59	4,471	4.05	181	3.33	149	305
	3-year-old	103	4,205	4.26	179	3.45	145	304
	Mature cow	317	4,743	4.21	200	3.48	165	290
	Total	479	4,594	4.53	196	3.61	159	295
	Artifically bred	186	5,517	3.87	213	3.31	183	304
	Naturally bred	293	4,008	4.47	179	3.56	143	289
	Pure bred	87	3,684	4.00	147	3.39	125	291
	Grade	392	4,796	4.23	203	3.47	166	296

Table 9: 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	15,343	2.7	6,808	4.04	275	3.32	226	340
February	24,875	4.4	7,127	4.00	285	3.33	237	339
March	47,593	8.4	7,165	4.02	288	3.35	240	336
April	49,477	8.7	7,101	4.03	286	3.35	238	330
May	48,837	8.6	6,936	4.03	279	3.35	233	324
June	45,906	8.1	6,662	4.03	268	3.37	225	314
July	66,748	11.8	6,388	4.10	262	3.40	217	310
August	110,058	19.4	6,342	4.14	263	3.41	216	302
September	86,778	15.3	6,461	4.08	264	3.33	215	311
October	40,261	7.1	6,428	4.06	261	3.28	211	318
November	17,696	3.1	6,517	4.01	261	3.26	213	330
December	12,457	2.2	6,700	4.01	268	3.26	219	339
Australia	566,029	100	6,645	4.07	270	3.35	223	318

Table 10: Distribution of calvings by month and region.												
	Percentage of cows that calved each month											
State	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Victoria	1	2	7	9	9	10	14	22	16	6	2	1
New South Wales	7	9	11	9	9	7	9	10	9	8	6	5
Queensland	8	9	11	10	10	9	8	8	8	7	6	6
South Australia	5	8	11	9	8	6	8	11	15	10	6	4
Tasmania	1	2	5	5	3	1	7	37	27	9	1	1
Western Australia	6	10	13	11	8	7	7	9	10	8	6	5
Australia	3	4	8	9	9	8	12	19	15	7	3	2
Victorian regions												
Northern	1	2	9	10	6	3	7	26	23	9	3	1
Eastern	0	2	6	7	7	8	20	27	16	5	1	0
Western	2	4	7	10	17	19	15	12	9	4	1	1

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	63,169	8,005	3.84	308	3.22	258	346
Jersey	14,702	5,554	4.93	274	3.75	208	323
Guernsey	318	5,317	4.26	226	3.36	179	331
Ayrshire	693	5,846	4.11	240	3.31	194	325
Illawarra	2,294	6,538	3.97	259	3.27	214	323
Aust Red Breed	844	6,929	3.97	275	3.48	241	320
Brown Swiss	1,036	6,864	4.18	287	3.43	236	348
Total	83,056	7,477	4.05	299	3.32	247	341

Table 12: Production averages of artificially bred stud cows.

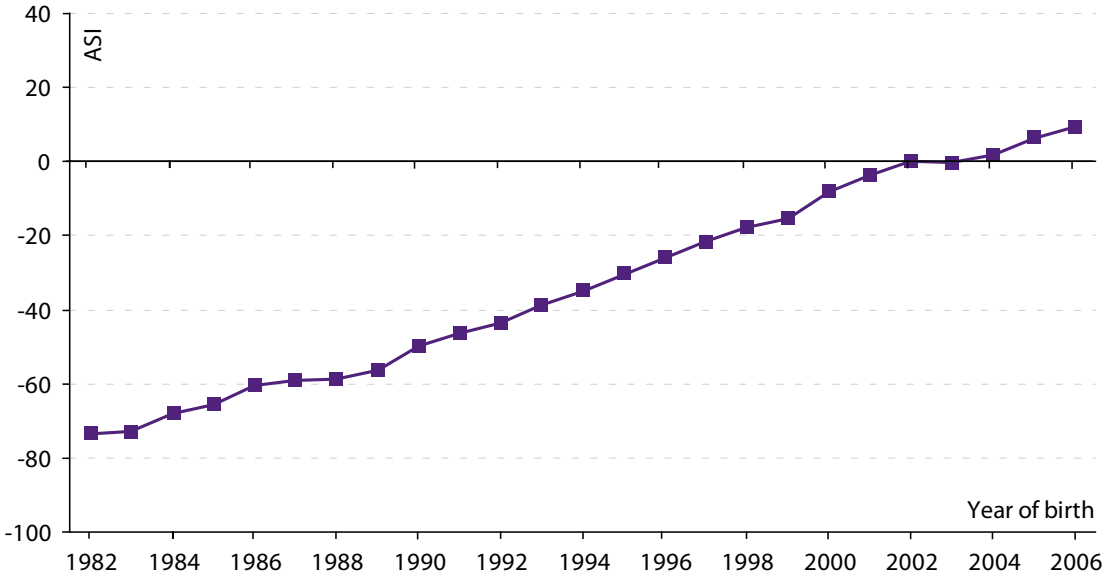
Breed	Number of cows	Production averages					
		Milk litres	Fat %	Fat kg	Protein %	Protein kg	Lactation length days
Holstein	50,078	8,086	3.85	311	3.22	261	347
Jersey	11,659	5,656	4.91	278	3.75	212	323
Guernsey	192	5,571	4.25	237	3.34	186	327
Ayrshire	383	6,196	4.02	249	3.30	205	331
Illawarra	1,212	6,907	3.93	271	3.23	223	326
Aust Red Breed	795	6,981	3.97	277	3.48	243	322
Brown Swiss	680	6,820	4.21	287	3.45	235	348
Total	64,999	7,583	4.05	303	3.32	250	342

Table 13: Victorian production averages, 1930/1931 – 2008/2009.

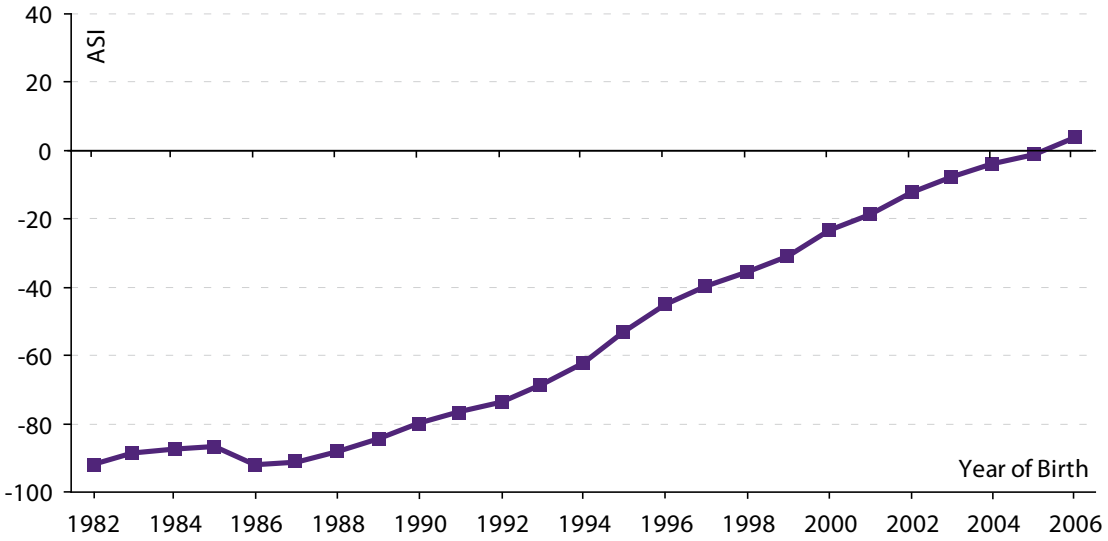
Year	Total herds	Total cows	Herd size	Production averages				
				Milk litres	Fat %	Fat kg	Protein %	Protein kg
1930/1935	2,984	91,328	31	2,295	4.7	107		
1935/1940	2,324	80,883	35	2,210	4.9	108		
1940/1945	1,082	39,368	36	2,154	4.9	105		
1945/1950	2,329	90,015	39	2,301	5.0	114		
1950/1955	3,192	141,387	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
2003/2004	3,414	624,002	183	5,841	4.0	236	3.3	194
2004/2005	3,079	586,566	191	6,083	4.0	245	3.3	202
2005/2006	2,933	572,906	195	6,205	4.0	248	3.3	206
2006/2007	2,775	554,136	200	6,245	4.0	250	3.4	209
2007/2008	2,431	484,030	199	6,423	4.0	259	3.3	215
2008/2009	2,313	478,612	207	6,458	4.1	266	3.4	218

2009 Australian Breeding Values

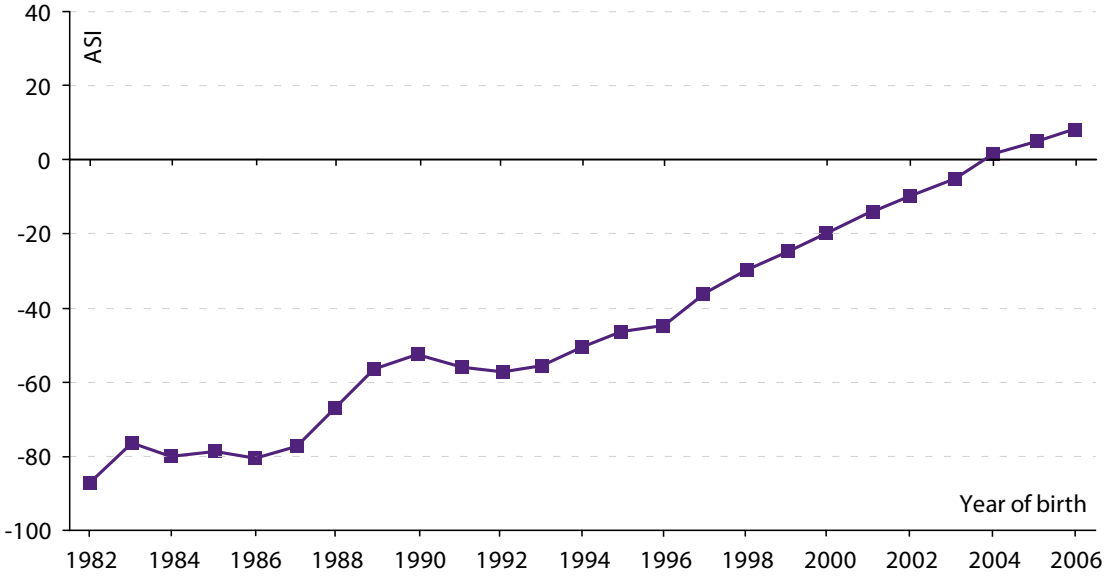
Genetic Trend for AI-bred Holstein Cows (ASI)



Genetic Trend for AI-bred Jersey Cows (ASI)



Genetic Trend for AI-bred Red Breed Group Cows (ASI)



Data for other breeds available from ADHIS

August 2009 ABVs – Active Publishable Holstein bulls – Top 50 APR™ – Proven in Australia

To be listed, a bull must be actively marketed and have a publishable production, workability and type ABV. Official ABVs for all top bulls can be found on the ADHIS website.

Rank*	Bull ID	Bull Name	Genetic Codes	Profit indexes			Production Traits									Non-Production Traits																		
				APR $	Rel	ASI $	Prot kg	Prot %	Milk L	Fat kg	Fat %	Rel	No. Dtrs	No. Herds	RIP %	Surv	Rel	Over Type	Mam Syst	Rel	Milk Spd	Temp	Like	Rel	Dtr Fert	Rel	CC	Rel	Lwt	Calving Ease	Rel	Source
1	**ORANA**	BUSHLEA WAVES FABULON		**147**	69	117	33	0.16	910	41	0.03	73	42	20	30	**104**	64	109	108	70	104	102	102	72			127	58	102			GAC
2	**GOLDSMITH**	TOPSPEED H POTTER	TVTL	**134**	85	136	31	0.34	482	46	0.36	93	205	77	51	**101**	67	99	95	73	104	101	103	84	100	58	69	84	101	103	94	GAC
3	**JOCKO**	JOCKO BESN	TVTL	**128**	97	97	40	-0.05	1598	23	-0.66	99	1158	279	17	**107**	94	107	108	96	103	104	104	96	100	90	101	98	101	100	90	AGR
4	**ALTACOLIN**	BARKLY DONOR COLIN	CV	**127**	92	116	29	0.28	512	34	0.18	98	1120	245	25	**102**	76	105	104	89	104	102	102	95	98	83	111	93	103	101	90	21st
5	**FARAWAY**	CARENDA FARAWAY		**123**	75	90	32	-0.08	1321	37	-0.28	81	62	26	24	**104**	64	105	105	73	102	102	103	78			141	68	102			GAC
6	**SOLVIT**	KIRK ANDREWS FORCEFUL		**122**	74	105	27	0.25	504	31	0.13	80	57	34	14	**104**	64	108	105	68	102	101	103	77			103	65	100			GAC
7	**JACKAROO**	KIRK ANDREWS TALENTED JACKSON		**122**	64	91	27	0.23	543	15	-0.12	70	31	16	22	**107**	55	112	111	63	105	103	105	67			107	57	103			ABS
8	**SHOTTLE**	PICSTON SHOTTLE		**122**	85	59	23	-0.12	1069	27	-0.27	91	114	52	14	**111**	76	113	110	89	102	105	105	78			164	91	106	98	84	ABS
9	**WILLCOY**	MANNA FARM DECOY		**120**	75	99	30	0.14	837	29	-0.09	80	60	33	10	**103**	70	111	107	75	103	103	103	76			116	64	104			GAC
10	**PIERRE**	TOP DECK KO PIERRE		**119**	92	92	19	0.32	87	25	0.31	97	359	89	16	**105**	81	104	105	90	105	104	104	90	103	74	62	95	96	101	79	BOS
11	**WISEPOINT**	KIRK ANDREWS JACKADINO	RC	**119**	80	77	24	0.11	654	21	-0.10	85	86	35	13	**109**	72	112	115	81	103	102	103	81			126	71	101			GAC
12	**LUCKYDIME**	HAVERDALE LUCKY DIME		**117**	82	107	26	0.16	662	43	0.22	89	90	38	30	**101**	69	102	97	85	103	103	102	76			113	73	100			ABS
13	**GRAZER**	CARENDA GRAZER	TC	**117**	76	103	31	0.19	784	24	-0.13	83	74	41	21	**105**	64	109	108	69	105	100	102	80			89	69	103			GAC
14	**DONOR**	ELITE MOUNTAIN DONOR IMP (E.T.)	TV	**116**	99	98	35	0.11	1072	20	-0.37	99	34602	2848	15	**104**	99	105	103	99	104	101	103	99	100	99	117	99	106	96	98	ABS
15	**DALEK**	MANNA FARM DONOR DALEM	TLTCTV	**116**	91	73	23	0.13	580	16	-0.13	97	483	122	16	**104**	75	103	105	86	104	102	103	93	105	76	137	90	100	96	92	GAC
16	**DONLOTTO**	KAARMONA DON LOTTO		**113**	77	102	18	0.23	229	48	0.55	83	64	23	28	**101**	75	102	106	80	104	101	102	75			122	59	103			ABS
17	**LANCELOT**	LANCELOT		**112**	95	104	30	0.18	749	30	-0.03	98	668	139	10	**105**	89	105	104	96	103	99	101	95	99	80	87	97	103	100	81	21st
18	**PONTIFF**	ILLAWAMBRA DONOR MYSTERY		**112**	73	94	21	0.17	452	38	0.27	81	51	28	17	**102**	55	105	103	64	105	102	102	72			114	70	100	100	70	ABS
19	**WHITLAM**	FAIRSTAR GOLD LEMON-TWIN	TCTV	**111**	73	95	17	0.27	76	40	0.53	79	55	31	18	**102**	60	104	106	68	103	101	103	77			110	64	101			GAC
20	**YOURSHOUT**	HILL VALLEY SCOTCH MATINI	TV	**109**	73	111	35	0.02	1266	43	-0.16	80	59	34	15	**101**	59	106	109	65	103	102	103	75			93	67	103			GAC
21	**DANZALI**	KREZANDA DAN	TC	**109**	72	101	28	0.17	692	32	0.03	77	48	30	14	**101**	66	110	110	71	101	101	101	73			122	61	104			GAC
22	**YUKON**	CARENDA YUKON	TV	**107**	70	113	23	0.18	504	55	0.48	79	49	24	26	**101**	52	109	106	61	103	102	103	70			69	66	103	96	62	GAC
23	**DUNTROON**	WINDORLEE DONOR TYCOON		**107**	77	97	23	0.30	282	24	0.17	86	76	30	19	**102**	57	100	99	63	99	103	103	78			145	77	107			ABS
24	**CAREY**	MARION DALE CAREY	XI	**107**	99	83	29	0.04	1003	24	-0.28	99	4259	729	11	**102**	98	94	93	97	100	102	103	99	103	98	114	99	97	103	89	GAC
25	**FAIRDEAL**	BUNKERS HILL NINEFOLD DYNAMO		**107**	75	78	26	0.11	733	18	-0.19	81	63	29	7	**105**	63	104	104	70	103	102	102	80			105	65	97			GAC
26	**LEONGATHA**	HILL VALLEY AVALON		**106**	63	107	31	0.16	826	34	-0.02	68	30	16	40	**102**	57	103	102	64	104	99	103	65			75	55	99			21st
27	**MIKADON**	KELLAWAY JOURDAIN		**106**	71	99	28	-0.01	1039	50	0.08	77	50	26	14	**102**	57	108	111	64	104	100	101	76			114	65	103			GAC
28	**ALTADECEPT**	ELMAR DECEPT		**106**	78	91	29	0.05	968	30	-0.16	87	82	38	19	**101**	60	102	102	69	101	102	102	70			118	78	102			21st
29	**ALTABREAKOUT**	IJSSELVLIEDT 135 BREAKOUT		**106**	93	86	13	0.19	107	45	0.58	97	543	115	24	**103**	85	101	102	92	100	101	101	91	106	71	90	95	98	99	80	21st
30	**VACUM**	AULDREEKIE ADDISON VACUM		**106**	86	76	24	0.14	607	16	-0.14	93	186	51	39	**104**	73	103	100	81	104	105	104	84	99	64	113	86	99	104	82	ABS
31	**DONANTE**	HILL VALLEY DON ANDANTE ET	TV	**105**	87	82	30	-0.06	1230	31	-0.31	95	307	89	54	**106**	69	111	112	78	103	101	102	87	96	61	121	87	102	95	97	GAC
32	**NINEFOLD**	KEYMER NINA WINLUKE	TL	**104**	99	77	23	0.06	741	27	-0.06	99	9766	1194	14	**105**	98	105	103	99	100	103	103	99	103	99	100	99	99	97	97	GAC
33	**FULLHOUSE**	JOYLEY 9 10 JACK		**102**	72	77	20	0.06	603	36	0.14	80	58	35	15	**104**	56	108	102	62	103	103	102	75			106	67	101			GAC
34	**STARSKY**	CALLAWAY JB STARSKY		**102**	78	76	32	-0.14	1480	27	-0.52	84	64	32	25	**104**	73	106	106	81	103	104	105	73			113	63	99			ABS
35	**DICAST**	DAMAR LEON	TV	**102**	77	75	22	0.07	679	26	-0.04	83	76	35	14	**105**	66	106	102	76	101	103	104	77			101	68	101			GAC
36	**NINESCAPE**	GLEN JURISTAN NINEFOLD ESCAPE		**102**	80	66	17	0.07	485	28	0.10	87	92	42	21	**103**	64	108	106	75	104	102	102	83			128	78	94			GAC
37	**PLAYFAIR**	KIRK ANDREWS FAIRPLAY		**100**	76	88	24	0.23	455	20	0.00	82	69	36	33	**100**	69	111	108	74	102	103	103	78			130	65	103			GAC
38	**NZGMILLER**	GLENMEAD MILLER		**100**	76	70	13	0.28	-69	19	0.32	84	48	18	31	**102**	62	99	100	78	102	101	100	65			134	80	97			LIC
39	**ALTADYNASTY**	DE CROB DYNASTY	CV	**95**	94	90	27	0.20	605	19	-0.09	98	775	150	17	**99**	85	98	103	87	99	102	102	93	99	82	104	95	95	96	79	21st
40	**ALANDONOR**	ALANDALE DONOR CASHIN 3RD		**95**	73	75	19	0.10	514	30	0.12	83	65	23	9	**104**	52	103	108	58	103	104	104	75			91	73	102			AGR
41	**ABSTENNYSON**	BURLANE TENNYSON		**94**	81	65	26	-0.11	1196	25	-0.38	88	64	25	10	**105**	69	105	104	83	102	102	103	75			130	79	102	98	76	ABS
42	**MYLUCK**	JOAX MYLUCK		**92**	77	96	21	0.25	292	34	0.31	84	74	41	35	**101**	64	112	104	78	104	103	102	76			66	73	101			ABS
43	**GIBBON**	GIBBON	TV	**92**	99	66	26	0.10	751	5	-0.40	99	3134	567	17	**102**	98	101	97	97	100	103	102	99	102	97	148	99	103	98	89	AGR
44	**VEE**	AULDREEKIE WEBSTER VEE	TV	**90**	86	118	37	0.11	1172	36	-0.21	92	135	44	19	**99**	74	101	100	83	101	103	101	83	90	63	53	85	99	102	73	ABS
45	**ALTAJUSTIFY**	DIRIGO JUSTIFY-ET		**88**	92	69	21	0.07	663	22	-0.09	97	362	114	16	**103**	85	100	100	88	103	102	102	88	97	78	97	91	93			21st
46	**ALTABINGO**	DE CROB BINGO		**88**	96	58	17	0.08	463	19	0.00	98	881	219	15	**106**	90	102	98	93	104	103	103	95	98	86	113	96	100	101	85	21st
47	**GOBETWEEN**	HILL VALLEY DON GOULBURN	TV	**87**	92	74	20	0.13	505	23	0.02	98	732	178	14	**101**	74	107	101	87	104	101	102	95	97	80	147	91	105	98	86	GAC
48	**MAXIMIZER**	CRYSTAL RIDGE GORDON MAXIMIZER		**87**	78	57	17	0.01	617	24	-0.03	85	80	29	15	**105**	64	114	110	77	104	102	103	77			124	74	103			ABS
49	**BULLBAR**	GLOMAR BULLBAR RB	TVRB	**87**	85	57	14	0.16	195	15	0.10	95	361	110	66	**103**	63	108	104	71	99	102	103	80	102	60	137	85	100	103	97	GAC
50	**BELLTOWER**	HILL VALLEY DON ALLWYN	TV	**83**	93	55	18	0.13	413	6	-0.17	98	755	174	13	**105**	77	103	101	89	104	102	102	96	102	84	99	92	98	102	87	GAC

August 2009 Interbull ABV(i)s – Active Holstein bulls – Top 50 APR™ – Proven Overseas

To be listed, a bull must be actively marketed and have a publishable production ABV(i). Official ABVs for all top bulls can be found on the ADHIS website.

Rank*	Bull ID	Bull Name	Genetic Codes	Profit Indexes			Production Traits								Non-Production Traits										Source
				APR $	Rel	ASI $	Prot kg	Prot %	Milk L	Fat kg	Fat %	Rel	1st Ctry	1st Dtrs	Surv	Rel	Over Type	Mam Syst	Rel	CC	Rel	Lwt	Calving Ease	Rel	
1	**7H6417**	O-BEE MANFRED JUSTICE		163	80	102	31	0.08	978	36	-0.08	87	USA	36679	**108**	75	100	101	85	167*	96	103	105	75	WWS
2	**NLDRAFAEL**	HOLIM RAFAEL	CV	141	75	101	33	0.09	1033	30	-0.21	76	NLD	11239	**106**	70	100	103	74	136*	89	105	101*	77	BOS
3	**BILSROW**	BILSROW JOCK	TVTL	138	60	106	32	0.07	1032	40	-0.06	71	GBR	93	**104**	50	103	100	61	134	67	100			21st
4	**NZGMINTED**	FAIRMOUNT MINT-EDITION		136	57	106	25	0.29	378	31	0.22	66	NZL	76	**104**	39	104	104	58	96	68	96			LIC
5	**NZGHOSANNA**	VALDEN HI APPLAUSE S2F		131	52	103	19	0.34	47	37	0.50	66	NZL	69	**103**	33	89	91	54	114	73	90			LIC
6	**29HO10947**	ABS RIVIERA		131	62	95	34	0.08	1089	21	-0.37	72	GBR	128	**104**	54	103	103	67	149	75	102			ABS
7	**GGJARDIN**	JARDIN		128	58	119	37	0.24	901	25	-0.20	65	DEU	772	**104**	53	109	105	64	82	76	101	102	65	ABS
8		UFM-DUBS ALTAESQUIRE-ET		127	36	114	31	0.04	1079	53	0.09	58	USA	67						139	48		100	60	21st
9	**29HO11932**	MORNINGVIEW LEGEND		124	49	101	29	0.19	698	28	-0.03	61	USA	118	**105**	43	106	103	58	144	55	107	96	57	ABS
10	**STOLJOC**	STOL JOC		123	60	88	34	0.01	1240	20	-0.48	71	FRA	95	**106**	49	109	104	59	128	72	105	100	65	AGR
11	**NZGPASTURE**	LAKESIDE S D MEADOWS		122	65	94	24	0.25	401	26	0.12	75	NZL	15714	**103**	51	100	96	64	136	94	103			LIC
12	**ROUMARE**	ROUMARE		122	59	88	28	0.09	863	26	-0.16	69	FRA	60	**108**	48	116	111	57	131	69	108	98	64	21st
13	**ROSEO**	ROSEO JOC		120	70	79	28	0.04	973	20	-0.31	76	FRA	1897	**103**	61	99	104	65	159*	82	99	103	66	AGR
14	**ALTACROCKETT**	CROCKETT-ACRES OTTO	TVTL	118	51	89	31	-0.01	1154	31	-0.26	61	USA	104	**104**	52	103	102	59	156	53	104	102	57	21st
15	**NZGROCKSOLID**	SRC GLENMEAD ROCKSOLID		118	57	88	18	0.24	188	32	0.35	68	NZL	73	**103**	41	95	94	56	115	72	95			LIC
16		VIA THELO		116	51	103	32	0.08	1013	35	-0.12	63	FRA	46	**101**	47	102	100	53	140	60	102	105	49	AGR
17	**BOSMEGASTUD**	AMBZED P MEGASTUD		115	53	103	24	0.26	364	34	0.26	64	NZL	65	**104**	35	103	104	56	46	66	96			BOS
18	**GGJANCKER**	JANCKER		115	61	97	26	0.17	646	30	0.04	70	DEU	749	**101**	53	103	103	66	128	79	99			ABS
19	**NZGSQUALL**	SRB NEILSENS STORMLINE		115	60	88	17	0.21	206	37	0.41	72	NZL	285	**103**	42	94	93	56	110	73	96			LIC
20	**93FFW21**	WIZZARD		112	58	97	21	0.01	756	59	0.38	65	DEU	629	**102**	53	103	103	65	115	74	97			21st
21	**NEWLOOK**	NEWLOOK	TV	110	72	79	22	0.19	454	18	-0.02	76	FRA	7056	**102***	68	100	98	66	147*	84	101	100	59	AGR
22	**NZGCLOUT**	REILLYS MIGHT S1F		110	57	68	12	0.17	105	30	0.37	70	NZL	247	**104**	41	91	93	57	115	77	89			LIC
23	**AMBFLUKE**	SRB NGAIO HUGO FLUKE		109	58	82	13	0.26	-31	35	0.52	71	NZL	173	**104***	42				102	79				BOS
24	**NZGROCKFEST**	SRC GLENMEAD ROCKFEST		109	60	75	11	0.23	-32	34	0.50	71	NZL	235	**104**	40	99	98	58	111	78	96			LIC
25	**29HO13053**	GRAN-J OMAN MCCORMIC		108	51	73	16	0.12	360	32	0.24	61	USA	117	**106**	51	108	108	58	152	54	102	101	59	ABS
26	**HOACRESEIGHT**	CROCKETT-ACRES EIGHT		107	53	73	22	0.11	602	21	-0.07	68	CAN	90	**105**	42	100	101	59	162	61	103	103	30	SEM
27	**14H4956**	TOMLU OMAN DOTSON-ET		106	48	92	37	-0.12	1603	33	-0.50	60	USA	92	**105**	43	107	101	58	122	53	108	101	56	GAC
28		VOUSTER		106	54	90	24	0.17	558	30	0.09	68	FRA	78	**102**	47	101	100	53	141	66	103	104	50	AGR
29		VAUCLUSE		106	51	80	25	0.04	849	28	-0.12	63	FRA	46	**104**	48	103	103	54	151	61	103	104	49	21st
30	**JOBERT**	JOBERT	TVTL	104	58	96	34	-0.03	1324	32	-0.36	65	DEU	587	**106**	53	112	113	64	60	74	103	100	65	GAC
31		VOSAC MAN		104	52	69	23	0.12	628	12	-0.21	66	FRA	62	**107**	41	106	106	56	155	64	104	102	49	AGR
32	**NZGGLENMEAD**	GLENMEAD KR WINDMILL		103	64	93	10	0.37	-360	42	0.83	73	NZL	348	**102**	48	97	94	60	105	86	98			LIC
33		DELTA FIDELITY		103	54	92	23	0.22	421	27	0.13	68	NLD	153	**101**	39	104	106	58	121	76	101	103	54	BOS
34	**DNKEATON**	V EATON		103*	89	60*	14	0.27	-8	5	0.08	95	DFS	9952	**107***	78	107	108	77	150*	95	104	99	71	BOS
35	**94FFW12**	RADICAL	TV	102	70	77	25	0.01	911	28	-0.16	78	FRA	3303	**104**	60	106	107	72	111	85	101	102	62	AGR
36	**NZGGLENRUSH**	SRC GLENMEAD RUSH		102	52	65	8	0.22	-153	32	0.56	67	NZL	74	**103**	34	92	93	55	153	74	93			LIC
37	**BOSFLAMBO**	MAIRE PIERRE FLAMBOYANT		101	57	95	20	0.27	222	32	0.32	68	NZL	91	**102**	39	106	104	57	63	75	101			BOS
38	**NZGEARLYTIME**	BUCHANANS EARLYTIME S2F		101	58	88	28	0.23	572	12	-0.18	69	NZL	104	**102**	41	94	95	58	84	77	94			LIC
39	**7H8081**	ENSENADA TABOO PLANET ETTR	TVTL	101	50	68	29	-0.14	1348	25	-0.47	59	USA	69	**105**	45	110	108	55	134	52	102	103	63	GAC
40	**GGMASCOL**	MASCOL	TV	101	68	65	17	0.17	285	16	0.06	79	DEU	3922	**106**	60	102	106	75	144	86	101			ABS
41	**SUBURN**	SUBURN		99	59	75	25	0.05	837	21	-0.21	70	FRA	70	**106**	48	111	108	57	121	69	107	95	60	AGR
42	**AMBFAVOUR**	AURORA-DONOR FAVOUR		98	76	86	30	0.04	1038	23	-0.31	75	NZL	5222	**104***	70	112*	108*	85	93*	94	107*	97*	80	BOS
43	**29HO11942**	WA-DEL JUNCTION		97	51	78	23	-0.01	871	37	0.00	62	USA	130			106	105	59	126	55	102	105	57	ABS
44	**NZGSURETHING**	MAIRE PIERRE GUARANTEE		97	59	63	18	0.09	489	20	-0.02	68	NZL	97	**104**	41	102	100	58	109	72	98			LIC
45	**NLDCANVAS**	DELTA CANVAS	RC	96	74	90	34	-0.14	1537	39	-0.39	82	NLD	5741	**104**	68	96	99	77			99			BOS
46	**29HO12477**	KOEPON LANDSLIDE		96	57	89	31	-0.09	1333	37	-0.28	68	GBR	54			100	101	57	106	52	104			ABS
47	**USONETFIN**	USONET FIN		96	57	84	35	-0.12	1534	28	-0.55	70	FRA	101	**104**	46	108	104	58	114	70	106	102	52	AGR
48	**NLDBEVERLAKE**	BEVERLAKE LOUSON	TLTV	96*	89	84*	30	0.21	692	5	-0.35	96	NLD	11092	**100***	71	107	110	74	143*	92	105	143*	92	BOS
49	**GGSTYLIST**	STYLIST		95	51	86	26	0.19	577	17	-0.12	62	DEU	138	**103**	43	110	108	57	96	70	99			ABS
50	**NZGKILMORY**	SRC BAGWORTH KILMORY		95	65	84	16	0.18	246	39	0.41	75	NZL	16507	**101**	51	93	91	65	82	94	97			LIC

* ABVs contain Australian data, all other traits are ABV(i)s.

August 2009 ABVs – Active Publishable Jersey bulls – Top 20 APR™ – Proven in Australia

To be listed, a bull must be actively marketed and have a publishable production, workability and type ABV. Official ABVs for all top bulls can be found on the ADHIS website.

Rank*	Bull ID	Bull Name	Profit Indexes			Production Traits									Non-Production Traits												Source
			APR $	Rel	ASI $	Prot kg	Prot %	Milk L	Fat kg	Fat %	Rel	No. Dtrs	No. Herds	RIP %	Surv	Rel	Over Type	Mam Syst	Rel	Milk Spd	Temp	Like	Rel	Dtr Fert	Rel	CC	Rel	Lwt	
1	**VALERIAN**	KAARMONA VALERIAN	**147**	80	119	29	0.29	464	34	0.17	89	91	44	12	**106**	61	109	105	68	102	104	103	79	103	59	96	80	103	GAC
2	**AMBMANHATTEN**	OKURA MANHATTEN-ET SJ3	**134**	94	122	26	0.42	191	36	0.48	98	728	126	19	**103**	81	105	98	93	103	102	102	95	102	76	104	97	106	BOS
3	**LARFALOT**	LIGHTWOOD LUCRATIVE	**132**	77	100	20	0.33	136	35	0.53	83	79	40	24	**105**	65	114	108	73	101	103	103	81			131	70	104	GAC
4	**ELTON**	CAIRNBRAE JACES ELTON	**118**	75	87	14	0.26	62	40	0.70	80	68	26	36	**104**	69	107	109	78	104	106	104	77			126	66	105	ABS
5	**TAILBOARD**	NOWELL TARSAN	**113**	89	100	18	0.33	72	41	0.69	96	362	108	19	**101**	69	112	105	79	102	102	101	92	99	69	121	89	101	GAC
6	**SPIRITUAL**	RIVERSIDE SPIRIT	**100**	68	63	19	0.23	247	3	-0.20	76	41	19	4	**108**	52	115	111	61	103	103	105	65			114	63	103	AGR
7	**BADGER**	BEULAH TARANAK BADGER	**94**	93	68	14	0.01	404	38	0.31	98	804	196	27	**105**	78	113	106	90	100	103	103	96	99	81	134	92	104	GAC
8	**NZGBANGA**	LOXLEA ACL OSWALD	**92**	80	92	9	0.64	-619	33	1.25	87	59	18	18	**99**	64	94	98	78	103	102	100	75			98	82	102	LIC
9	**BARTPOWER**	DARAWAY FLOWERPOWER SATIRA	**87**	83	55	16	0.07	393	13	-0.16	90	124	54	16	**105**	66	118	117	77	101	101	102	86	101	59	131	82	99	GAC
10	**FLOWERPOWER**	CLAYDON PARK FLOWER POWER	**84**	99	74	22	0.06	573	19	-0.22	99	5999	766	16	**104**	98	114	114	98	102	103	104	99	98	98	76	99	100	ABS
11	**BETAHEAD**	KINGS VILLE OUTDO	**84**	75	68	12	0.20	81	30	0.48	81	66	33	18	**105**	65	113	103	72	100	101	102	81			107	67	100	GAC
12	**FARMSTEAD**	BUSHLEA ETTA FY HALLMARK	**81**	78	60	16	0.11	320	16	-0.02	87	91	45	24	**104**	59	107	104	67	103	103	104	79			97	77	99	GAC
13	**SHEPPARTON**	LOXLEIGH SHEPPARTON	**80**	73	61	19	0.02	542	15	-0.26	78	53	23	28	**104**	66	112	115	78	102	105	104	72			97	63	99	21st
14	**DOUBLED**	DOUBLE D JACE VIKING	**80**	77	61	4	0.40	-445	29	1.00	82	72	29	18	**104**	71	106	103	80	99	99	101	77			135	68	104	21st
15	**OUTINFRONT**	LIGHTWOOD LEDA	**79**	97	74	23	0.03	642	19	-0.30	99	1899	326	16	**105**	93	115	106	95	94	101	102	98	96	94	117	98	103	GAC
16	**PASSIVE**	BERCAR PASSIVE	**79**	94	68	8	0.31	-198	32	0.81	98	792	173	21	**105**	85	106	104	91	102	101	101	96	97	85	98	95	102	GAC
17	**JURACE**	KAARMONA JURACE	**77**	66	41	13	-0.18	636	25	-0.18	72	38	15	26	**106**	56	106	105	64	106	105	107	66			129	56	107	WWS
18	**FUTUREARM**	DARAWAY ARMADA FUTURA	**74**	77	70	20	-0.13	759	35	-0.11	86	78	38	24	**100**	57	103	102	64	102	103	104	81			107	75	103	GAC
19	**NZGPERO**	ARDACHIE CHAD PERO	**72**	78	69	8	0.27	-129	36	0.81	86	51	16	15	**100**	62	92	94	77	102	102	100	71			98	82	103	LIC
20	**MEDIATOR**	SILHOUETTE MEDIATOR	**72**	90	65	2	0.67	-862	19	1.24	96	429	117	22	**102**	73	113	104	84	100	101	101	93	101	72	123	89	107	GAC

August 2009 Interbull ABV(i)s – Active Jersey bulls – Top 20 APR™ – Proven Overseas

To be listed, a bull must be actively marketed and have a publishable production ABV(i). Official ABVs for all top bulls can be found on the ADHIS website.

Rank*	Bull ID	Bull Name	Profit Indexes			Production Traits								Non-Production Traits								Source
			APR $	Rel	ASI $	Prot kg	Prot %	Milk L	Fat kg	Fat %	Rel	1st Ctry	1st Dtrs	Surv	Rel	Over Type	Mam Syst	Rel	CC	Rel	Lwt	
1	**NZGPANLINK**	WILLIAMS PAN LINK	**124**	59	114	12	0.62	-486	50	1.45	71	NZL	122	**102**	40	89	93	54	119	75	104	LIC
2	**35JJV24**	TAWA GROVE MAUNGA ET S3J	**123**	64	112	15	0.46	-204	52	1.20	76	NZL	5202	**102**	44	101	99	60	110	94	102	BOS
3	**NZGLYNTRADE**	LYNBROOK TRADEMARK S3J	**119**	55	124	26	0.36	280	42	0.51	67	NZL	75	**100**	34	98	93	53	100	67	108	LIC
4	**NZGCAPSTAN**	SOUTH LAND CAPSTAN SJ3	**118**	57	111	10	0.67	-619	47	1.53	69	NZL	83	**101**	36	91	95	50	110	77	101	LIC
5		WHITIMORE MAN ZEALOT ET	**111**	50	109	27	0.24	469	33	0.14	66	NZL	72	**104**	32	107	102	52	80	67	103	BOS
6	**NZGJAUNT**	HEDGELANDS SAFARI	**111**	55	104	10	0.60	-519	44	1.36	67	NZL	58	**101**	35	96	98	47	122	71	104	LIC
7	**TBONE**	RICHIES JACE TBONE A364	**110**	58	85	16	0.20	185	38	0.54	68	USA	788	**106**	52	120	112	63	117	60	106	AGR
8	**AMBKONUI**	KONUI GLEN ELMOS BOWIE	**103**	68	89	13	0.50	-307	28	0.84	76	NZL	4370	**103**	48	105	102	60	122	93	106	BOS
9		CAL-MART JACE SIMBA	**102**	39	91	24	-0.01	710	40	0.04	62	USA	82						130	50		ABS
10	**NZGEDIFY**	DONALDS EDIFY	**101**	56	85	9	0.51	-419	33	1.05	68	NZL	76	**103**	35	96	98	49	96	74	101	LIC
11		OKURA LFB IVINS ET	**100**	52	88	17	0.19	243	38	0.48	68	NZL	106	**103**	30	104	103	50	109	74	102	LIC
12	**NZGNOONTIME**	SHEPHERDS NOONTIME	**98**	64	81	11	0.38	-190	33	0.81	76	NZL	14030	**104**	44	93	97	57	118	94	103	LIC
13	**NZGNEVVY**	NOAKES NEVVY SJ2	**94**	60	95	13	0.45	-241	40	1.01	75	NZL	19114	**100**	39	97	97	57	105	94	102	LIC
14	**NZGDODDY**	MAGHERACANON DODDY GR	**93***	83	87*	12	0.47	-292	31	0.89	94	NZL	18491	**100**	57	103	102	60	118*	95	108	LIC
15	**ALTAAHLEM**	AHLEM LEMVIG ABE	**91**	64	72	16	0.09	338	32	0.27	71	USA	3201	**105**	59	110	102	64			102	21st
16	**NZGOKURAICE**	OKURA DE ICE	**86**	53	82	7	0.51	-493	35	1.17	67	NZL	86	**103**	31	93	97	52	72	70	103	LIC
17	**NZLLIKABULL**	MITCHELLS LIKABULL SJ3	**83***	87	89*	15	0.45	-163	26	0.65	96	NZL	70490	**97**	62	97	98	59	110*	96	103	LIC
18	**NZGHAWTHORN**	HAWTHORN GROVE ZEUS	**82**	52	57	5	0.18	-119	38	0.83	67	NZL	75	**103**	30	102	103	49	153	73	102	LIC
19		KIRKS RI CHARISMA ET GR	**79**	53	76	12	0.31	-71	30	0.64	69	NZL	75	**99**	34	92	96	50	111	74	99	LIC
20	**DNKIMPULS**	Q IMPULS	**79**	73	67	11	0.29	-80	24	0.54	83	DFS	8523	**102**	61	104	98	77	122	91	103	BOS

** ABVs contain Australian data, all other traits are ABV(i)s.*

August 2009 ABVs – Active Publishable Red Breed bulls – Top APR™ – Proven in Australia

To be listed, a bull must be actively marketed and have a publishable production ABV. Official ABVs for all top bulls can be found on the ADHIS website.

Rank*	Bull ID	Bull Name	Profit Indexes			Production Traits									Non-Production Traits													Source
			APR $	Rel	ASI $	Prot kg	Prot %	Milk L	Fat kg	Fat %	Rel	No. Dtrs	No. Herds	RIP %	Surv	Rel	Over Type	Mam Syst	Rel	Milk Spd	Temp	Like	Rel	Dtr Fert	Rel	CC	Rel	Lwt	
1	**ARBBOBDOWN**	LODEN BOB	**147**	75	126	32	0.33	544	34	0.15	81	67	31	26	**103**	66	108	105	69	103	102	103	79	100	32	106	64	100	GAC
2	**NZLCHALLENGE**	KILFENNAN CHALLENGE	**124**	86	88	18	0.22	230	35	0.36	95	248	42	30	**107**	59				105	101	104	88	103	60	106	93		LIC
3	**PETERSLUND**	PETERSLUND 1213	**114**	90	73	16	0.16	260	28	0.25	96	385	63	23	**108**	81				104	99	103	89	105	68	123	92		ARG
4	**BOTANS3829**	BOTANS 3829	**109**	91	75	20	0.14	484	24	0.05	97	357	62	18	**105**	82				103	99	101	87	97	71	141	92	1	ARG
5	**ASCONA**	R ASCONA	**102**	73	58	15	-0.03	607	34	0.12	84	46	15	34						104	100	105	54			177	83		ARG
6	**REDVIKING**	TREETON LETHAL	**101**	69	97	26	0.02	942	46	0.09	81	57	25	19	**103**	46	106	102	52	102	102	104	64	95	39	105	69	102	GAC
7	**TORP882**	TORPANE 882	**100**	95	45	7	0.06	142	29	0.33	98	641	136	11	**106**	92	100	101	86	105	101	102	93	105	89	145	96	97	ARG
8	**BJURIST1011**	B JURIST ET 1011	**98**	91	56	13	0.14	194	18	0.14	96	307	49	21	**107**	85				106	101	104	88	105	76	112	92		ARG
9	**ARBJIM**	BEAULANDS JIM	**93**	83	65	17	0.03	593	30	0.07	92	190	82	30	**103**	62	94	101	70	102	101	103	85	99	53	131	84	95	GAC
10	**ARBCOLLINS**	BOSGOWAN COLLINS	**90**	65	49	16	0.00	604	18	-0.12	84	86	37	26						103	103	104	81	104	30	141	69		GAC

August 2009 Interbull ABV(i)s – Active Red Breed bulls – Top APR™ – Proven Overseas

To be listed, a bull must be actively marketed and have a publishable production ABV(i). Official ABVs for all top bulls can be found on the ADHIS website.

Rank*	Bull ID	Bull Name	Profit Indexes			Production Traits								Non-Production Traits								Source
			APR $	Rel	ASI $	Prot kg	Prot %	Milk L	Fat kg	Fat %	Rel	1st Ctry	1st Dtrs	Surv	Rel	Over Type	Mam Syst	Rel	CC	Rel	Lwt	
1	**GGDRAGOMIR**	DRAGOMIR	**127**	52	99	26	0.09	770	43	0.15	65	DEU	78	**107**	41	111	111	47	129	71	104	ABS
2	**JUBY1617**	JUBY VALOR 1617 ET	**122**	69	74	19	0.07	558	33	0.13	78	DFS	1236	**106**	62	103	99	55	156	80	101	ARG
3	**GGDIDOLUM**	DIDOLUM	**121**	55	101	18	0.14	414	57	0.56	65	DEU	82	**106**	44	113	109	48	106	70	104	ABS
4	**NZGBRODY**	CARMELGLEN BRODY	**120**	48	90	22	0.11	578	40	0.22	67	NZL	71						93	71		LIC
5	**OBROLIN1804**	O BROLIN 1804	**118**	58	81	20	0.18	385	27	0.15	70	DFS	3496	**111**	54	102	104	54	114	73	102	ARG

August 2009 ABVs – Active Publishable Guernsey bulls – Top APR™ – Proven in Australia

To be listed, a bull must be actively marketed and have a publishable production ABV. Official ABVs for all top bulls can be found on the ADHIS website.

Rank*	Bull ID	Bull Name	Profit Indexes			Production Traits									Non-Production Traits													Source
			APR $	Rel	ASI $	Prot kg	Prot %	Milk L	Fat kg	Fat %	Rel	No. Dtrs	No. Herds	RIP %	Surv	Rel	Over Type	Mam Syst	Rel	Milk Spd	Temp	Like	Rel	Drt Fert	Rel	CC	Rel	Lwt	
1	**GUJULIUS**	ACCELERATED GOLDEN GENETICS JULIUS ET	**95**	70	95	22	-0.04	798	55	0.44	83	70	24	10	**100**	47	106	110	55	101	101	103	54			103	72	100	SEM
2	**AUSFAYSBOO**	Kookaburra Fays Boo	**59**	65	39	15	0	518	7	-0.39	81	56	23	8	**106**	40	102	100	17	101	102	103	44	96	38	109	73		WAS
3	**USADIVIDEND**	OLD HOMESTEAD DIVIDEND	**24**	77	36	18	-0.33	1097	21	-0.69	90	99	31	17	**100**	64	110	104	78					92	37	113	79	103	AGR

August 2009 ABVs – Active Publishable Brown Swiss bulls – Top 5 APR™ – Proven in Australia

To be listed, a bull must be actively marketed and have a publishable production ABV. Official ABVs for all top bulls can be found on the ADHIS website.

Rank*	Bull ID	Bull Name	Profit Indexes			Production Traits									Non-Production Traits										Source
			APR $	Rel	ASI $	Prot kg	Prot %	Milk L	Fat kg	Fat %	Rel	1st Ctry	1st Dtrs		Surv	Rel	Over Type	Mam Syst	Rel	CC	Rel	Lwt	
1	**GGEVENT**	EVENT	**74**	63	49	12	0.19	194	15	0.13	79	44	17	15	**102**	32	105	101	103	63	101	35	127	69	ABS
2	**76B0900**	VICTORY ACRES SIMON EVEN	**61**	69	32	9	0.12	180	6	-0.07	84	60	30	15	**101**	49	105	101	104	49	97	42	165	87	AGR
3	**ALTADENMARK**	R HART TC DENMARK ET	**47**	88	12	3	0.10	-11	1	0.03	97	374	123	12	**104**	81	93	99	98	89	108	81	156	96	21st
4	**SWISSEDGE**	ELM PARK JUPITERS EDGE	**38**	79	26	2	0.15	-63	15	0.41	94	235	61	17	**96**	49	102	98	100	84	104	62	155	87	GAC
5	**ALTATANGELO**	MIL NEU DENMARK TANGELO	**33**	69	11	6	0.00	182	-3	-0.25	85	69	24	11	**102**	47	100	100	100	57	100	46	143	75	21st

Look Up Charts

Requirements for Official Publishable ABV status

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.

	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
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

Australian Profit Ranking (APR)

+ 3.8 x Protein ABV
+ 0.9 x Fat ABV
-0.048 x Milk ABV
+3.276 x (Survival ABV - 100)
+1.090 x (Milking Speed ABV - 100)
+1.806 x (Temperament ABV - 100)
+0.340 x (Cell Count ABV - 100)
-1.248 x (Liveweight ABV - 100)
+1.671 x (Daughter Fertility ABV - 100)

The APR is reported as dollars net profit per cow per year compared to the average.

Genetic Codes for Holstein bulls

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

Source of bulls

21st	21st Century Genetics
ABS	ABS Australia
AGR	Agri-Gene
ARG	AUSRED Genetics
BOS	BOS Trading
GAC	Genetics Australia
LIC	Livestock Improvement
SEM	Semex Australia
WAS	Woodlands Agricultural Services
WWS	World Wide Sires
TBA	To Be Advised

Definition of Active Publishable Bull

Bull breeding companies acknowledge that the bulls listed are available and actively marketed in Australia. The bull must be either alive and well, producing viable semen in Australia or have at least:

- 1000 doses of semen in storage for Holstein
- 500 doses of semen in storage for other breeds

* Order of Bull Ranking

Bulls are sorted by APR followed by ASI and Protein kg.

Published by ADHIS Pty Ltd.

2009 Australian Breeding Values

National Herd ID	Owner Name	Address	Post code	No. of cows on file	No. of current cows	ASI ABV	Prot. ABV	Prot % ABV	Milk ABV	Fat ABV	Fat % ABV	ASI Rank
Holstein – Top 2% Herd Average ABVs based on ASI in August 2009												
W00248F	KITCHEN J M SONS	BOYANUP	6237	1528	428	50	13	0.07	359	18	0.05	1
CF0597Q	COCHRANE W & K	ROCHESTER	3561	87	66	47	14	0.01	508	19	-0.04	2
2B0043B	MCRAE SA & NM	NAMBROK	3847	565	267	45	13	0.05	374	16	-0.01	3
540597R	ANDERSON WR & BL	KONGWAK	3951	1077	263	44	14	0.03	460	15	-0.06	4
540624E	PERRETT RJ & HE	KONGWAK	3951	488	217	43	17	-0.01	664	11	-0.25	5
T63SWAA	Sehwag Pty Ltd G	WINNALEAH	7265	3070	220	43	13	0.02	439	18	-0.02	5
C00155U	HOGG, A & J	BIGGARA	3707	767	173	42	10	0.09	187	15	0.10	7
240108T	HENRY TW & TC	TINAMBA	3859	1887	523	40	12	0.06	320	12	-0.03	8
540565I	GLASGOW PW	BENA	3946	807	162	39	12	0.02	412	13	-0.07	9
840377M	COATES JD	ALLESTREE	3305	993	230	37	12	0.02	402	13	-0.06	10
840404W	WALDER RG & CA	HEATHMERE	3305	745	159	37	11	0.05	298	13	0.00	10
N00544Q	PARRISH TJ & LR	BARRENGARRY	2577	1039	208	37	9	0.07	201	14	0.08	10
240025J	KENNEDY R & M	SALE	3850	1299	188	36	12	0.03	378	12	-0.07	13
4A1373N	FLEMMING GM & PE	TOCUMWAL	2714	1051	297	36	11	0.03	353	13	-0.03	13
540564F	GLASGOW DC & EJ	BENA	3946	473	126	36	12	0.02	386	12	-0.06	13
C00276F	COOK, R.J. & J.P.	WANGARATTA	3678	1488	502	36	10	0.04	298	13	0.00	13
C00857B	AULT G.K. & J.M.	ROCHESTER	3561	576	156	35	10	0.01	357	15	-0.01	17
240024G	JOHNSTON RSN & LJ	BUNDALAGUAH	3851	1590	667	34	10	0.03	324	12	-0.03	18
650274B	J.W. & J.C. LAMBALK.,	TIMBOON	3268	1048	383	34	10	0.06	245	9	-0.02	18
B20571E	WOODBINE HOLDINGS PTY LTD	LANCASTER	3620	1941	592	34	11	0.04	320	10	-0.05	18
C00691E	NICHOLLS RJ & HJ	STANHOPE	3623	685	134	34	9	0.04	246	13	0.03	18
540139F	MACQUEEN AD & GL	YANAKIE	3960	1098	259	32	9	0.04	264	10	-0.02	22
650421Q	WHITE, R.P. & L.J.	TIMBOON	3268	237	65	32	9	0.05	227	12	0.03	22
540184S	LIA TO & PM PTY LTD	NILMA NORTH	3821	551	213	31	10	-0.03	424	16	-0.03	24
981306Q	COSTER B & M	RIPPLEBROOK	3818	1443	744	31	8	0.06	186	11	0.04	24
240851B	HEYWOOD, BO & LD	YARRAGON	3823	855	186	30	9	0.06	226	7	-0.03	26
W00088D	HUTTON TF AND SONS	CAPEL	6271	1610	482	30	6	0.09	50	9	0.10	26
240308C	NAMBROK PASTORAL COMPANY	MORWELL	3840	934	204	29	6	0.06	126	12	0.10	28
5C0049C	WELLER W & J	LONGWARRY	3816	1222	781	29	7	0.04	190	11	0.04	28
650188L	D.P. & J. GALE,	TIMBOON	3268	2482	548	29	10	0.02	310	8	-0.07	28
850530T	WILSON NF	WEERITE VIC	3260	401	86	29	10	0.01	353	10	-0.08	28
981317U	DEPPELER EL & AM	YINNAR SOUTH	3869	333	70	29	7	0.04	172	13	0.09	28
240214L	RURAL OPERATIONS GROUP	NEWBOROUGH	3825	1537	284	28	9	0.03	254	9	-0.02	33
4A1330A	PRICE IH & SW	SANDY CREEK	3695	823	313	28	8	0.04	205	10	0.02	33
4A2101S	DOUGLAS JW & VL	LEITCHVILLE	3567	1713	543	28	9	0.03	255	9	-0.02	33
4A2159B	FEHRING B.N. NO 2.	COHUNA	3568	860	160	28	7	0.05	164	11	0.05	33
540284V	COMBEN NR & EF	YANAKIE	3960	262	72	28	7	0.05	156	11	0.06	33
540300E	MOSCRIPT JB ME CJ & JM	LEONGATHA SOUTH	3953	701	192	28	11	-0.02	448	10	-0.13	33
840351P	BURNS KN & WA	GORAE WEST	3305	605	74	28	7	0.05	175	10	0.03	33

National Herd ID	Owner Name	Address	Post code	No. of cows on file	No. of current cows	ASI ABV	Prot. ABV	Prot % ABV	Milk ABV	Fat ABV	Fat % ABV	ASI Rank
842120F	RYAN BJ & PM	GRASMERE	3281	1134	310	28	9	0.01	304	10	-0.04	33
C00412Q	HALL, R.O.	KATUNGA	3640	521	92	28	5	0.09	1	11	0.15	33
C00455G	KERRINS FAMILY TRUST	KATUNGA	3640	625	105	28	8	0.00	291	14	0.03	33
T14CBBM	BATTY CG, CJ & MC	SMITHTON	7330	993	318	28	7	0.04	164	11	0.06	33
240726K	HENDRIKSE C	DRIFFIELD	3840	1027	118	27	7	0.06	144	9	0.04	45
850441U	B J & J L DICKSON	TERANG	3264	2247	603	27	9	0.02	297	7	-0.08	45
850550V	PEKIN JF, A & JG	TERANG	3264	933	199	27	7	0.03	214	11	0.02	45
S00199G	STILLERE FARMING TRUST	BIRDWOOD	5234	575	104	27	7	0.04	190	11	0.03	45
4A1759S	WILLETTE FARMS	TOCUMWAL	2714	1557	464	26	7	0.02	229	10	0.01	49
540451P	MABIN GF & ME	WONTHAGGI	3995	929	260	26	7	0.01	261	12	0.01	49
540605F	WHITE KL & DM & RL	LEONGATHA SOUTH	3953	1044	349	26	7	0.03	209	10	0.02	49
540748V	MATTHIES DJ & HM	MARDAN	3953	570	118	26	8	0.02	261	8	-0.05	49
541139G	KENNY, J.M. & G.B. & SONS	CORONOOKE	3254	1207	271	26	8	0.02	246	9	-0.02	49
650360O	LOCK, I.J. & A.E.	TIMBOON	3268	1842	373	26	7	0.02	217	12	0.04	49
840391T	UEBERGANG IS & JA	GORAE WEST	3305	249	55	26	10	0.02	329	6	-0.12	49
841874T	MEADE JF & MB	CUDGEE	3265	699	168	26	9	-0.02	362	12	-0.05	49
850989R	ROWANVALE PTY LTD	CAMPERDOWN	3260	1067	281	26	8	0.01	284	9	-0.04	49
N00606V	JERANG PTY LTD	BEGA	2550	1395	362	26	7	0.05	137	9	0.04	49
T42MVBA	HINGSTON BW & MV	CHUDLEIGH	7304	581	112	26	5	0.06	57	12	0.13	49
Jersey												
240699A	HOEY DM & L	KATUNGA	3640	887	265	49	9	0.18	20	17	0.31	1
850588C	GLENNEN & CO C	TERANG	3264	2197	476	45	6	0.22	-132	18	0.48	2
4A1307S	MILLBROOK ELLIS & CO	TALLANDOON	3701	638	30	42	11	0.06	239	12	-0.01	3
C00935T	MC MANUS, B.T.& C.A.	BAMAWM	3561	600	110	34	5	0.18	-99	12	0.32	4
C00993T	WORBOYS R. & A.	KOTTA	3564	959	243	34	5	0.15	-55	12	0.29	4
740064P	HESTER, R.J.	WOOL WOOL	3249	704	153	27	1	0.24	-311	10	0.51	6
4A1466B	PINEGROVE PARK TRUST	KATAMATITE	3649	552	56	25	6	0.06	85	9	0.08	7
650265D	D.J. & M.A. TRIGG,	TIMBOON	3268	529	37	25	3	0.16	-147	9	0.32	7
C00927B	VANDENBOSCH, J.H. & C.A.	LOCKINGTON	3563	342	48	23	2	0.18	-182	8	0.33	9
C00637Q	AKERS R & H & G	TALLYGAROOPNA	3634	1029	352	22	4	0.10	-18	6	0.14	10
S00167U	THORN G C & S J	WILLUNGA	5172	656	138	22	6	0.04	133	5	-0.04	10
Red Breed												
Ayrshire												
C00402P	NGW FARMS PTY LTD	COBRAM	3643	107	98	-23	-6	-0.04	-158	-7	-0.01	1
Illawarra												
Q01283M	BLUE RANGE PASTORAL CO	ALLORA	4362	182	90	3	2	-0.05	174	4	-0.05	1
4A1868T	WILLIAMS G P & R C	MENINGIE	5264	924	299	-2	0	0.00	-4	-2	-0.03	2
AussieRed												
N00555U	GRAHAM RW & BC	NUMBAA	2540	778	353	43	11	0.08	246	16	0.08	1
Guernsey												
460005P	GALLUS MR I	STRATHMERTON	3641	503	131	2	-2	0.08	-189	1	0.22	1