

Australian Dairy Herd Improvement Scheme

New services to support uptake of breeding value results

Daniel Abernethy

Michelle Axford



National Statistics

- Total Dairy Farms 7,924 (48% herd recorded)
- Total Dairy Cows 1.7 million (46% herd recorded)
- Average Herd Size: 202 cows

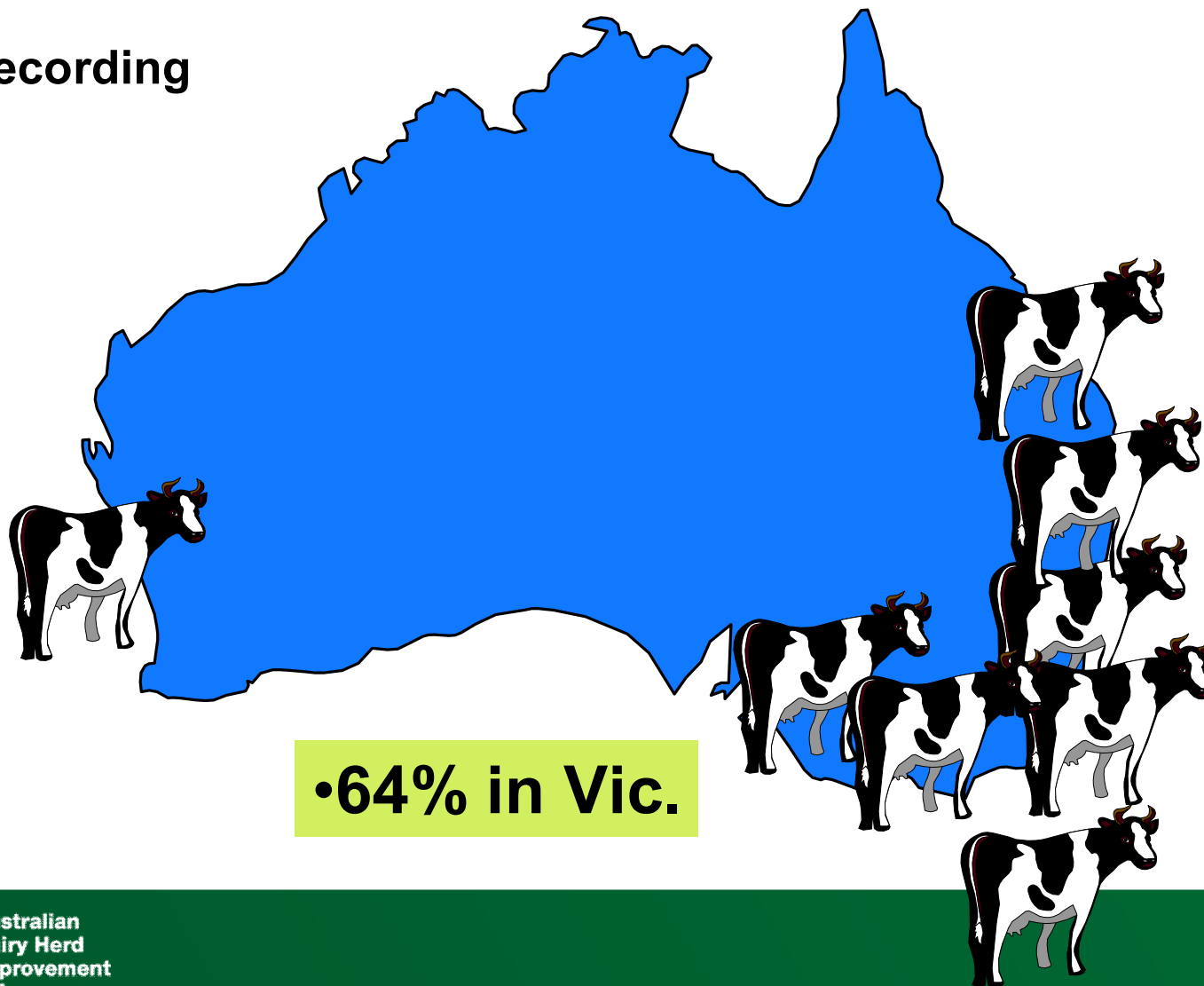
(Source: Dairy Australia, 2009 and ADHIS, 2009)



Australian
Dairy Herd
Improvement
Scheme

Distribution of dairies

- 12 herd recording centres.



Australian
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ADHIS

Australian Dairy Herd Improvement Scheme is

- Australia's independent genetic evaluation service.
- An initiative of the Australian Dairy Farmers (ADF) – subsidiary company
- Funded support from Dairy Australia (dairyfarmer levies)
- A member of Interbull since 1997

ADHIS' Vision & Mission

Our Vision

- All dairy farmers understanding and using Australian Breeding Values (ABVs) to drive their genetic gain.

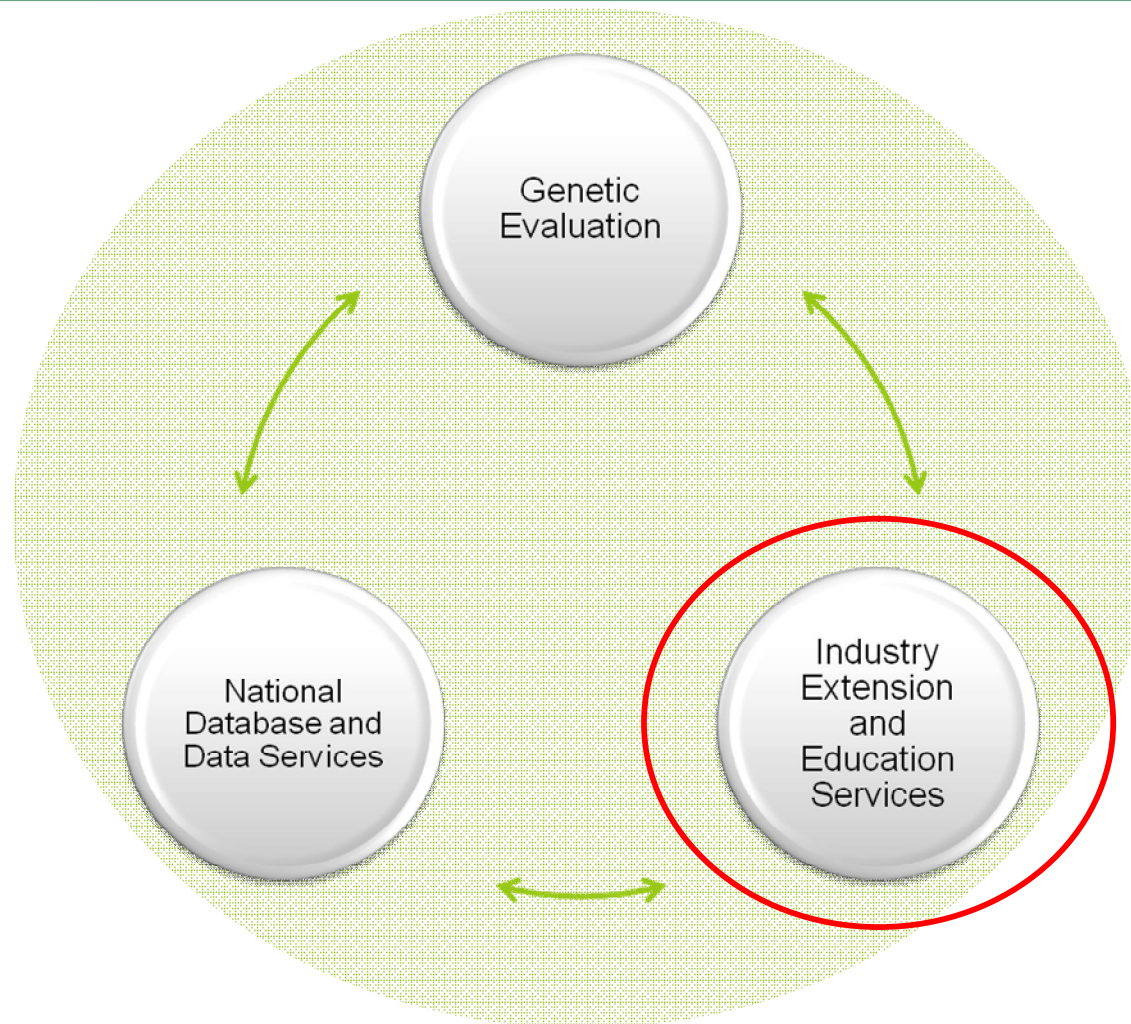
Our Mission (Our Purpose)

- To maximise the opportunity for Australian dairy farmers to profit through independent world leading dairy genetic improvement services.

Social Research

- Paine and Alexander (2008) analysed farmer decision making for genetic selection using focus groups and farmer survey.
 - System is based on good scientific knowledge and 'it works'.
 - Farmers are seeking a simplified ABV system.
 - Farmers are heavily reliant on advisers to make breeding decisions.
 - Hard to find independent advice.

ADHIS Strategic Plan



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Genetics Learning Package

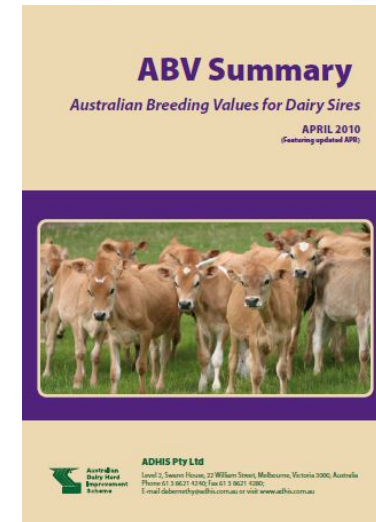
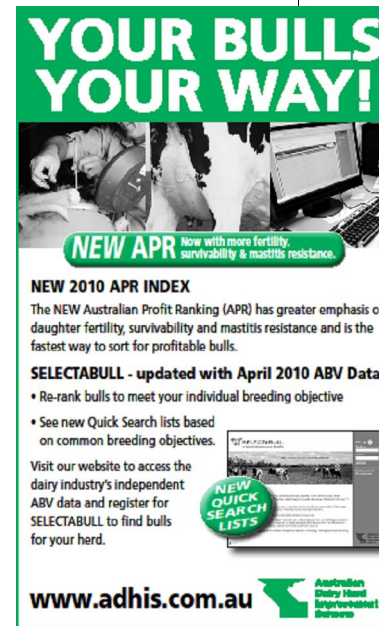
The goal of the Genetics Learning Package is

Australian dairy farmers have increased their rate of genetic gain for profit, based on a greater understanding and use of ABVs.

Communication, Education and Extension
activities and tools

Activity Areas

- Communication
- Tools
- Training
- New Activities



Newsletter Grab from ADHIS
(the Australian Dairy Herd Improvement Scheme)

For immediate release: January 2009
(word count short version: 250 words; full version 430)



Communication



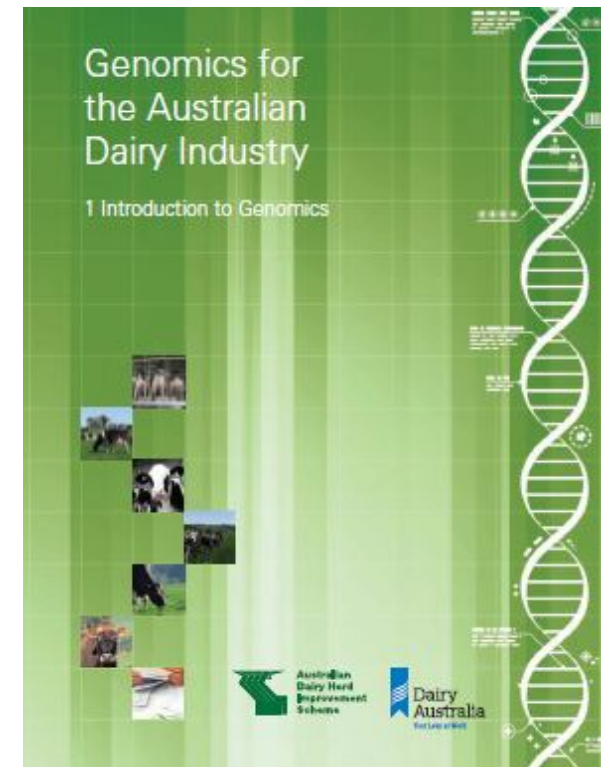
Genemail

- Electronic newsletter
 - ADHIS issues, updates
- Published monthly since November '08
- Quick information on topics of interest
- Subscribe by registering on ADHIS website



Genomics communication

- Genomics brochures
 - 1. Introduction to Genomics
 - 2. Publication of genomic breeding values
 - 3. Implementation
- Australian dairyfarmer article featuring farmer articles



Other Communication Activities



Better genes means more money

TREVOR and Tracy Henry have always said that breeding cows with better genetics is a profitable strategy. Throughout the years their selection decisions have been focused on breeding cows with high genetic merit, with their herd now ranked 11th in the country based on its Australian Selection Index (ASI).

The Henrys milk a 500-cow, split-calving herd on their property, Wilara, in Victoria's Macalister Irrigation District.

As chairman of the nearby Macalister Demonstration Farm (MDF), Mr Henry was particularly interested in the results from a recent analysis of MDF herd records, which looked at the link between genetics and profit.

Cows in the MDF herd were grouped according to their genetic merit based on their individual ASI.

An analysis of production records for four lactations showed that cows in the high genetic merit group generated about \$310* more income per lactation than those in the lower genetic merit group. They also milked 704 days (about two lactations) longer in their lifetime.

Mr Henry said he was not surprised by the results, but he was encouraged to hear that they confirmed that the breeding strategy



Australian Dairy Herd Improvement Report 2009



Australian
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Tools





Welcome to the Australian Dairy Herd Improvement Scheme

The dairy industry's independent genetic evaluation service.

News

Updates to 2005 ABVs

Daniel Abernethy - 9 June 2008

In 2005 a number of improvements to the ABV system have been implemented. They include the rolling of the base for all ABVs, improvement to the calvi

Vision 2004 Conference

Daniel Abernethy - 9 June 2008

On Wednesday 4th August ADHIS held its 'Vision 2004' Conference. Participants from every aspect of the dairy industry were represented. To view/downl

Selecting bulls the easy way

Michelle Axford - 16 July 2009

Finding the best bulls available for your breeding program is easier than ever with the release of the web-based Selectabull tool on the ADHIS website...

Events

Release of Daughter Progress Reports and Provisional Breeding Values

Judith Schweitzer - 16 December 2009

Release of Daughter Progress Reports and Provisional Breeding Values...

Release of Daughter Progress Reports and Provisional Breeding Values

Judith Schweitzer - 16 December 2009

Release of Daughter Progress Reports and Provisional Breeding Values...

Display a Bull



DISPLAYABULL

Selectabull



SELECTABULL

An Australian Dairy Herd Improvement Scheme Tool

Selectabull



Welcome to Selectabull

Genetics is an important contributor to farm profit. Make genetic improvement work for you by using Selectabull to build your breeding objective and simplify bull selection.

What is ADHIS?



The Australian Dairy Herd Improvement Scheme (ADHIS) owns and manages Australia's national independent dairy genetic evaluation database on behalf of dairyfarmers.

[Find out more](#)

How can Selectabull Help Me?



Simplify bull selection with Selectabull. This tool helps farmers build a breeding objective that suits individual conditions and find bulls that are likely to achieve the objective. You can print, save and export your search results.

[Find out more](#)

Breeding for Success



The genetic merit of a herd is a permanent resource that compounds year on year, regardless of what the season brings.

[Find out more](#)

Breeding Objective

Quick Search

Comprehensive Search

Results

User Details



EMA DS Test

Eye Media Australia Pty Ltd
Camberwell, Vic



Comprehensive Search

This search function allows you to build a customised index which meets the needs of your farm.

Select your priority traits by ticking the box beside each trait name. Then, decide how important the trait is to you on a scale of -10 to +10. More than 0 means more of a trait (ie taller stature). Less than 0 means less of a trait (ie shorter stature).

If you want to review your breeding objective or move to the quick search, simply select from the menu on the left of the screen.



Prepared by: Eye Media Australia Pty Ltd
Breeding Objective: Breeding Objective #1
Last Updated: Tuesday 21st of April 2009 08:40:16 AM

Australian Breeding Values (ABV)

Production

☒ ASI		5.000	☐ Milk L			☐ Protein kg		
☐ Protein %			☐ Fat kg			☐ Fat %		

Non-Production Management

☐ Milking Speed			☐ Temperament			☐ Likability		
☒ Survival		5	☐ Cell Count			☐ Liveweight		
☒ Daughter Fertility		5	☐ Calving Ease					

Non-Production Type

☒ Overall Type		10.000	☐ Mamm System			☐ Stature		
☐ Udder Texture			☐ Bone Quality			☐ Angularity		

Breeding Objective

Quick Search

Comprehensive Search

Results

Home

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EMA DS Test

Eye Media Australia Pty Ltd
Camberwell, Vic

Search Results

Your search criteria have produced the following bull list. Different report styles are available by clicking the tabs along the top of the list.



Now it's time to speak to your local semen supplier to finalise your selections from this short list.

Prepared by: Eye Media Australia Pty Ltd
Breeding Objective: Breeding Objective #1
Last Updated: Tuesday 21st of April 2009 08:40:16 AM

Results Listing

Bull ID

ABV Summary

ABV All Traits

Bull ID	Bull Name	Bull Owner Code
JACKAROO	KIRK ANDREWS TALENTED JACKSON	ABS
ORANA	BUSHLEA WAVES FABULON	GAC
HOGOLDWYN	BRAEDALE GOLDWYN	SEM
YUKON	CARENDA YUKON	GAC
GOLDSMITH	TOPSPEED H POTTER	GAC
WILLCOY	MANNA FARM DECOY	GAC
DONANTE	HILL VALLEY DON ANDANTE ET	GAC
INFORMER	HILL VALLEY BASAR ACME	GAC
MYLUCK	JOAX MYLUCK	ABS
JOCKO	JOCKO BESN	AGR
SOLVIT	KIRK ANDREWS FORCEFUL	GAC

Breeding Objective

Quick Search

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EMA DS Test

Eye Media Australia Pty Ltd
Camberwell, Vic

Genetics = Profit DVD

- DVD resource that strengthens the link between genetics and profit
- Distribution initially targeted to non-herd improvement service providers
- Move benefits of genetics from the theoretical to the concrete. What is the real benefit of genetics on my farm (or my client's farm)?
- Based on interviews with key advocates



A photograph of two black and white cows grazing in a lush green field. The cow in the foreground is facing right, with its head down eating grass. A thin wire is attached to its ear. Another cow is partially visible behind it. The background features rolling green hills under a clear blue sky, with some trees and a small white building visible in the distance.

Training

Herd '09 Conference

- In conjunction with NHIA and Holstein Australia, ADHIS is a partner in Herd '09
 - An environment for active stakeholder interaction
- Professional development and networking
- Update with latest information, including genomics
- 180 attendees representing AB companies, resellers, researchers, extension and education staff, farmers



Technotes and Factsheets

- Technotes – targeted at breeding adviser group
- Factsheets – targeted at farmers

Technote No. 11

Production Index (PI)

Key Messages

- A PI allows you to compare the performance of cows within a herd, based on current lactation information.
- A cow's PI and ABVs (including ASI) cannot be compared.
- Use PI as a tool to cull animals, use ABVs as a tool to breed replacements.

What is a PI?

The Production Index (PI) is a measure of the merit of a cow based on her performance in the current lactation, compared to other cows of the same breed in the same herd. It is an estimate based solely on the cow's own performance. It is not a genetic measure – it does not predict the performance of her progeny.

The value of the PI is to identify the under-performing cows as candidates for culling. This is to help improve the profitability of the herd in the short term – the current year and maybe next year.

The PI is designed to allow you to compare cows of a given breed that may be of different age or at a different stage of lactation. It is based on comparisons of individual test day yields, which are then pooled throughout the lactation, as they become available.

The PI relies on knowledge of how a typical cow performs throughout lactation – this is sometimes called the shape of the lactation curve. We expect the cow to begin lactation at a reasonably high level, reach a peak after a few weeks and then gradually decline over the next few months. The PI also relies on knowing how age affects yield. We know a typical two-year-old produces less than a three-year-old, which produces less than a mature cow. We take advantage of the mathematical relationships between stage of lactation and yield, and between age and yield.

Calculating PI

The first step in the calculation of the PI is the adjustment of the daily yield of each cow to what we expect her to produce if she was at day 150 of lactation and if she was seven years old. All cows are put on an equal footing.

The next step is to compare these adjusted yields with the average of all other cows milking in that herd on that test day. This is what is called the test day index and it is an important part of the PI. Under Australia's pasture-



based production system, the daily yield move up and down quite substantially by – or even between days quite close together – comparisons within test days, this variation accounted for and removed from the PI. The final step is to combine all test day in cow to produce her publishable PI. This is a formula that takes account of the number of test days that the cow has and the accuracy of lactation yield from that number of test days. The PI is a measure of the merit of a cow based on her performance in the current lactation, compared to other cows of the same breed in the same herd. It is an estimate based solely on the cow's own performance. It is not a genetic measure – it does not predict the performance of her progeny.

The PI may be based on milk yield only, fat yield only, protein yield only, or a combination of these traits. In time, herd test centres will move to calculating the PI based on the Australian Selection Index (ASI) formula, as this will reflect how dairy farmers are paid for milk.

May 2009

Version 1

Page 1



Technote No. 10

Improving Data

Key messages

- Data accuracy and completeness is important to the Australian Breeding Value (ABV) system.
- Australian Breeding Values (ABVs) are relied upon to make genetic selection decisions.
- Farmers, herd recording centres and the Australian Dairy Herd Improvement Scheme (ADHIS) are responsible for ensuring the accuracy and completeness of the data.

Data – a national resource

The Australian dairy industry uses the Australian Breeding Value (ABV) system to provide advice to farmers and herd recording centres. Farmers, herd recording centres and the Australian Dairy Herd Improvement Scheme (ADHIS) are responsible for ensuring the accuracy and completeness of the data.

BREEDING PLAN WORKSHEET

YOUR BREEDING OBJECTIVE identifies the traits you require to improve the profitability of your herd. Your objective will stay relatively constant over a number of years. However, there are still decisions that need to be made on an annual basis. This worksheet will help you apply your breeding objective to an annual breeding plan.

A BREEDING PLAN is an annual record of the practical tasks you need to complete to achieve your breeding objective. An effective breeding plan is practical, cost-effective and achievable.

■ Technote Latest Topics

- Production Index (PI)
- Breeding for Survival (Longevity)
- APR – Updated Formula

■ Factsheet Latest Topics

- Develop a Breeding Objective
- Develop a Breeding Plan

CONTROLLING HERD IMPROVEMENT AND AI COSTS

February 2009

Genetics underpins profit

Genetic improvement is a significant contributor to improved productivity and is permanent and compounding. Similarly, a herd can take a long time to recover from poor genetic decisions. No matter what the reason brings, the genetic value of an animal stays constant. As a group, the higher genetic merit animals within your herd contribute the most to the net profit of the farm business.

High genetic merit bulls produce profit

For example, bulls that have an API of 100 are \$10 more profitable per year than bulls with an API of 50. Genetic gain is permanent and compounds over time.

AI and herd test costs

AI and herd test costs are a significant part of the breeding budget. However, the benefits of genetic improvement far outweigh the costs. By paying more money, you are not always getting a more profitable bull, as shown in Figure 2 (see next page). High genetic merit bulls are readily available throughout the price range. Bulls can be readily compared using their ABVs. For important traits such as API, genetic merit, and fat yield, as well as survival, type, fertility and culling rates.

AI doesn't need to cost a fortune

- There were more than 250 different proven Friesian bulls sold in 2008. This is in addition to more than 50 bulls of other breeds.
- Australian Profit Rankings of these bulls ranged from \$1 to \$150 (1 means \$1 less profit per cow per year than average; 150 meaning \$150 more profit per cow per year than the average).
- The price per dose of proven semen ranged from \$1.2 to \$1.20 but most bulls were sold for \$10 to \$20.
- By paying more money, you are not always getting a more profitable bull, as shown in Figure 2 (see next page). High genetic merit bulls are readily available throughout the price range. Bulls can be readily compared using their ABVs. For important traits such as API, genetic merit, and fat yield, as well as survival, type, fertility and culling rates.



Australian Dairy Herd Improvement Scheme

Planned Training Opportunities

Breeding Advisor Training

Supporting clients in developing a breeding objective and use ABVs to find bulls to meet objective?

Selectabull workshops (DEC)

Half day 'in practice' workshop
Supports Selectabull

Develop breeding objective in the context of the farm management environment.
Focus on the practice of bull selection.

Manage Dairy Breeding (NCDEA)

Competency based training and assessment program

Develop understanding of genetic principles.
Apply in the development and implementation of a breeding objective & plan

Student Training (NCDEA)

Competency based training and assessment program

First introduction to dairy cattle breeding

Provide training tools on ADHIS website

Accompanying training and assessment program offered through NCDEA



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New Activities



Top Bull Lists

- Focuses attention on the top group of bulls
- Re-ranks top bulls by common breeding objectives
 - Type
 - Production
 - Survival (Longevity)
 - Mastitis Resistance

YOUR BULLS YOUR WAY!

NEW APR Now with more fertility, survivability & mastitis resistance.

NEW 2010 APR INDEX
The NEW Australian Profit Ranking (APR) has greater emphasis on daughter fertility, survivability and mastitis resistance and is the fastest way to sort for profitable bulls.

SELECTABULL - updated with April 2010 ABV Data

- Re-rank bulls to meet your individual breeding objective
- See new Quick Search lists based on common breeding objectives.

Visit our website to access the dairy industry's independent ABV data and register for SELECTABULL to find bulls for your herd.

NEW QUICK SEARCH LISTS

www.adhis.com.au Australian Dairy Herd Improvement Scheme

Good Bull Guide

- Define “top” group of bulls
- Re-rank this list (top bull list) by common breeding objectives
 - Type
 - Production
 - Survival (Longevity)
 - Mastitis Resistance
 - ???

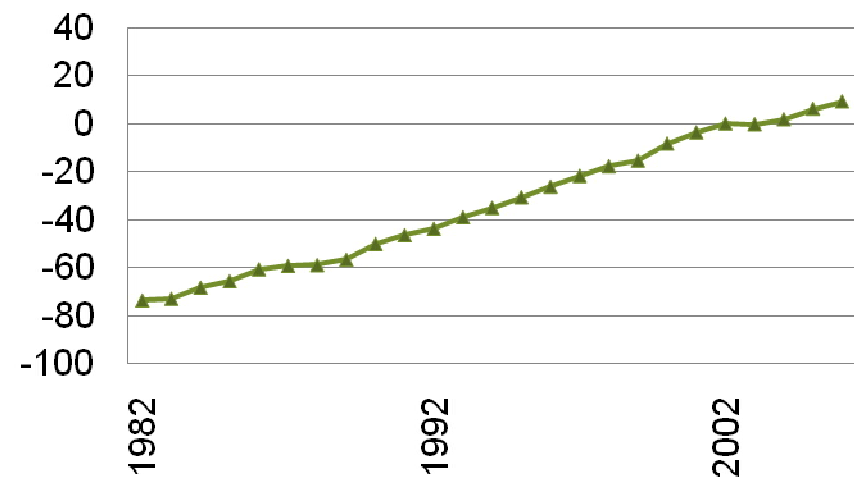
*“Pick from
the Guide”*



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Tracking Genetic Gain – Farmer Tool

- Tracking national population
- Bringing it back to the Farm
 - Genetic Gain at farm level
 - Comparison to national trend
 - Review of sires used
 - ‘Benchmarking’



Fertility Focus 00/01: Seasonal

Trevor & Yvonne Jones
Back Bourke Road
The Sticks
9873

Report date: 20/06/01

Herd ID: 654321

No of cows included: 272

These cows calved between: 27/06/00 and 02/01/01

Mating start & stop date:
(estimated from AI or rectal
pregnancy test data) 04/11/00 - 05/04/01

Planned start of calving: 13/08/01



1 Overall herd reproductive performance

6-week in-calf rate
Percentage of cows pregnant in the first 6 weeks of mating

Your herd 61% (59-64%)

☆☆☆

Aim above 71%

Not-in-calf rate
Percentage of cows not pregnant after 22 weeks of mating

Your herd 14% (13-16%)

☆

Aim below 8%



2 Drivers of the 6-week in-calf rate

3-week submission rate
% of cows that were inseminated in the first 3 weeks of mating

Your herd 77%

☆☆☆

Aim above 86%

Non-return rate
% of inseminations that were not followed by a return to heat

Your herd

Aim above

Conception rate
% of inseminations that resulted in a confirmed pregnancy

Your herd 52%

☆☆☆

Aim above 53%



Mastitis Focus Report

MACALISTER RESEARCH FARM
PO BOX 87

MAFFRA, 3860



Report period: 01.08.08 - 30.07.09

Total calvings: 291

Herd test cell count: 216

Herd ID: 703293

Printed: 30.07.2009

YOUR HERD ANNUAL PERFORMANCE SUMMARY

Clinical Case Rates

Calving

Your Herd
1 cases per 100 cows calved

Trigger >5

Lactation

1 cases per 100 cows in milk per month

>2

New Infection Rate

Subclinical & Clinical

Your Herd
5 cases per 100 cows in milk per month

Trigger >5

Herd Milk Cell Counts

Average cell count at the 4 most recent tests

07.05.09 216
09.03.09 136
06.01.09 173
12.12.08 165

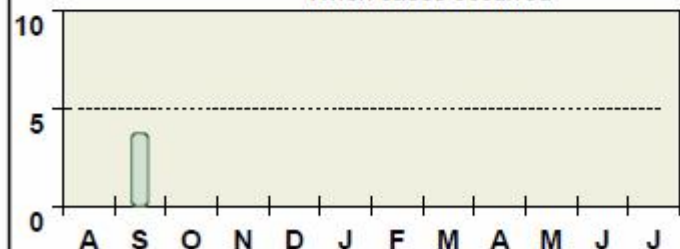
KEY MANAGEMENT AREAS IN FOCUS

Your calving system



Monthly clinical case rate at calving (all cows)

When cases occurred



Trigger
5 cases per 100 cows calved

First calver clinical case rate

Your Herd
0 cases per 100 first calvers

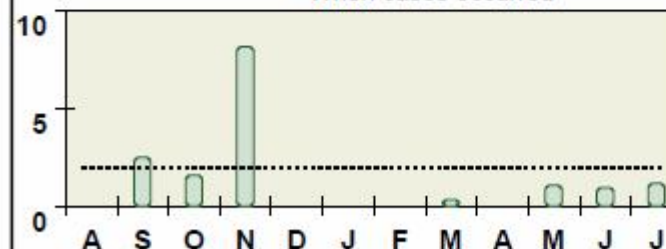
Trigger >5

Clinical mastitis



Monthly clinical case rate in lactation (all cows)

When cases occurred



Trigger
2 cases per 100 cows in milk

Total clinical cases

Your Herd
45 cases

Treatment failure

Cases with an extended treatment
Your Herd
0%

Trigger >20%



Genetics Focus Report

MACALISTER RESEARCH FARM
PO BOX 87

MAFFRA, 3860



Report period: 01.08.08 - 30.07.09

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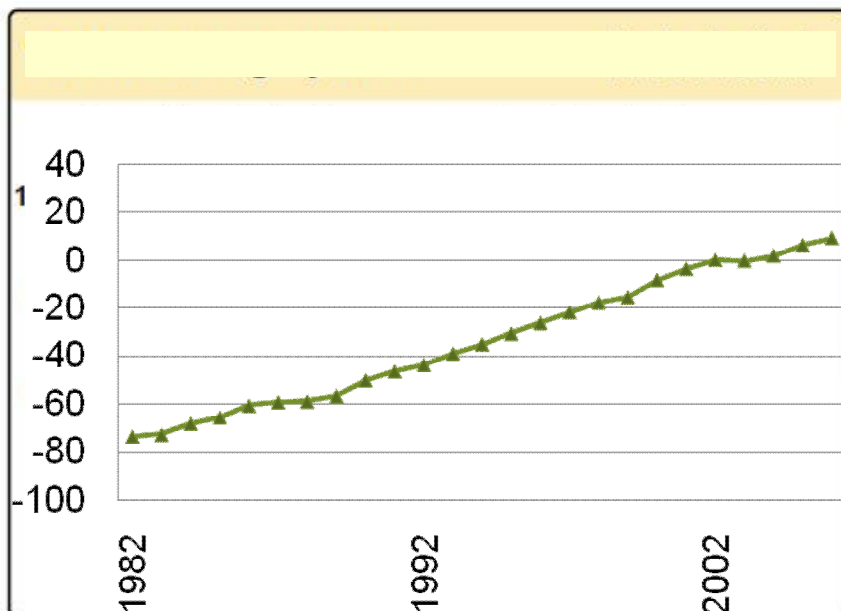
Herd ID: 703293

Printed: 30.07.2009

YOUR HERD ANNUAL PERFORMANCE SUMMARY

Breeding Objective

KEY MANAGEMENT AREAS IN FOCUS



	No. of bulls
Bulls used in Good Bulls Guide	8
Bulls used not in Good Bulls Guide	2
Progeny Test Bulls used	4

Industry Partners



The challenge is still ahead

Questions



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