

ABV Release

APRIL 2013

FACT SHEET



KEY MESSAGES

- Fertility ABVs are now more reliable and robust than ever before thanks to an updated ABV model and participation in Interbull evaluations
- ADHIS is now participating in Interbull workability evaluations which means overseas proven bulls can now have ABV(i)s for temperament and milking speed.
- The Good Bulls Guide now contains five times more bulls with Fertility ABVs or ABV(i)s and a dedicated list of bulls sorted on their Fertility ABVs making it easier than ever to select bulls for improved fertility

Australian Breeding Values (ABVs) have evolved throughout their 30 year history. Better information, smarter thinking and new technology mean that ABVs continue to develop as the most reliable source of information for breeding cows in Australia. In April 2013, the latest research has resulted in updates that will enable farmers and their advisers to make better genetic choices. Here are the changes, an explanation of why we are making them and the impact they have on ABVs.

More reliable Fertility ABV

You now have more choice when it comes to breeding for improved fertility. A greater number of bulls in the Good Bulls Guide have fertility ABVs and the reliability of ABVs has improved.

A new 'multi-trait' fertility ABV has moved from using two types of fertility data to five types, namely: calving interval, lactation length, days to first mating, pregnancy rate and first service non-return rate. The additional information is more readily available for younger bulls and better accounts for cows that never re-calve. The new model has increased the average reliability for this trait for young bulls by 6-10% depending on the breed. The number of bulls with publishable fertility ABVs has doubled to over 7000 bulls with a fertility ABV(i) data available for a further 55,000 overseas bulls. Farmers have more bulls to choose from when breeding for fertility.

Fertility is a complex trait with lower heritability but there is genetic variation and herd reproductive performance can improve over time by selecting higher Fertility ABV bulls from the Good Bulls Guide. In 2012, Dairy Australia's InCalf Fertility Data project reported that **cows with higher fertility ABV sires (≥ 105) had much better reproductive performance than lower fertility ABV sires (< 97).** In fact, the difference was about 14% greater 6-week in-calf rate. However, a relatively small number of

bulls had publishable fertility ABVs that could be used in making genetic choices.

The introduction of new information to the genetic evaluation of fertility generates a more reliable fertility ABV and is expected to be more robust between proof runs. It also means you can expect to see some changes in bull ABVs compared to August 2012.

The range between the best and worst groups of bulls has widened (for example the range in Holstein bulls has increased 6%).

Fertility is a trait of economic importance and is included in the APR. Bulls will re-rank with a change in fertility ABV. **For every 1% increase in fertility ABV, APR will increase by \$4.38.**

If fertility is a breeding priority, farmers are encouraged to select bulls from the Good Bulls Guide with higher fertility ABVs.

This new model is the result of research conducted by ADHIS, the Dairy Futures CRC and DPI-Vic.

Interbull Workability and Fertility ABV(i)s

Interbull calculates ABV(i)s for bulls proven overseas so that farmers can compare them to bulls proven or genotyped in Australia.

In September 2012 and January 2013 ADHIS participated in the Interbull test evaluations for milking speed, temperament and fertility and was successful in passing the Interbull Quality Assurance tests. As a result ABV(i)s for these three traits will be available for bulls proven overseas (with no or few Australian daughters) from April 2013. This means farmers will be able to better compare bulls from around the world for these traits.

The ranking of bulls will change as the impact is not the same for every bull. Milking speed, temperament and fertility are all traits of economic importance and are therefore included in the APR.

- For every 1% change in Milking Speed ABV, APR will go up or down by \$1.63.
- For every 1% change in Temperament ABV, APR will go up or down by \$4.28.
- For every 1% change in Fertility ABV, APR will go up or down by \$4.38.

This change means that farmers and their advisers can more fairly compare proven bulls from overseas for milking speed, temperament and fertility.

Parent Average Regression for Holstein ABV(g)s

Since their introduction in 2011, the reliability and use of genomic based breeding values (ABV(g)s) have seen tremendous gains. From April 2013, a change to the use of parent average for the Holstein breed will be implemented.

An analysis of Holstein bulls has shown that the parent average for yield traits tends to overestimate actual genetic merit. Parent average contributes to the final ABV(g) for young sires and as a result the parent average used in calculating the ABV(g) for young sires will be regressed (brought back closer to the average) for bulls with less than 10 daughters and for heifers.

The impact of this regression is that the range of parent average ABVs is reduced. Bulls which have very high parent average ABVs relative to their genomic information will fall whilst bulls with very low parent average ABVs relative to their genomic information will increase. The result is improved accuracy of early predictions of a bull's genetic merit. This regression was applied in the Jersey breed prior to the August 2012 release and therefore only Holsteins are affected.

No more logins for Selectabull

Selectabull is now even easier to use. Logins are now optional so you can do a quick search without having to remember your password! But don't worry, farmers who prefer to login and save their data will still be able to choose this option.

Selectabull is a web based tool that uses ABVs to help farmers and their advisers select bulls based on their own customised breeding objective. It is freely available – and logins are now optional.

DIF Formats

New DIF formats will be available with this release. These include:

- DIF 202: Cow ABV file including APR
- DIF 105: Bull pedigree record including bull common names and 3 letter genetic codes.

Previous DIF formats will remain available during the transition period.

New features for the Good Bulls Guide

The highly recognised Good Bulls Guide is now in its sixth edition and will include some new features with this release.

- A dedicated listing of bulls ranked on fertility for Holsteins, Jerseys and Red Breeds. This means it will now be even easier to select bulls for improved fertility while still using bulls that are above average for Profit (APR).
- Slightly higher minimum criteria for profit (APR).
- Breed codes to more easily identify Aussie Red, Ayrshire, Illawarra and Dairy Shorthorn bulls

Base Change

Every year, the Australian herd continues to make genetic improvements. It is important that ABVs remain relevant to the cows we are milking, today. This is why there is a small change in the base group against which animals are compared to ensure we are comparing animals against today's average cows. Sometimes, this is described as 'rolling the base'. In Australia, this happens every April and results in a small change to the ABVs for all traits for every bull and cow.

For example, if no other data changed in a bull's proof, a Holstein bull will have an APR that is \$8 less than it was in August 2012. In the case of Jerseys, the effect is \$8 less. In the case of Red Breeds, the effect is \$11 less.

The base change does not impact on the ranking of any animal as it is applied across all bulls and cows.

A breakdown of the base change for all traits is available from the www.adhis.com.au.

New Performance Data

As usual with every ABV run ADHIS receives new herd test, conformation and genomic data of animals around the country. New data influences the ABVs of all bulls, as it has for almost thirty years. The impact of new data affects bulls differently and therefore will alter the ranking of bulls.

More information

Go to Noticeboard at www.adhis.com.au to find

- Dairy Australia InCalf Fertility Data Project Report
- More detailed explanations of the April 2013 base change
- Updated fertility ABV model and Interbull workability data

For more information, contact ADHIS by phone 03 8621 4240 or e-mail abv@adhis.com.au.