

Australian Profit Ranking (APR): Updated formula

Key Messages

- The APR is calculated with an updated formula which places more emphasis on daughter fertility, survival and mastitis resistance compared to the previous APR.
- The updated formula follows extensive industry consultation and modelling research.
- Ultimately the APR brings the most profitable group of bulls to the top of the list.

Breeding indexes

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.

Australian Profit Ranking (APR)

The Australian Profit Ranking (APR) is the main breeding index available for Australian dairy sires. The Australian Dairy Herd Improvement Scheme (ADHIS) regularly publishes lists of sires ranked on their APR as well as ABVs for various traits.

The APR is a single index that reflects nine traits that influence net farm profitability, including production (milk, fat and protein yields) and non-production traits.

Non-production traits include survival (longevity), fertility, mastitis resistance, liveweight, temperament and milking speed.

The contribution of each trait towards the final APR value is 'weighted' according to its relative contribution to profitability.

Some traits are related to each other. For example as milk volume goes up, fat and protein percent goes down. The APR (breeding index) takes into account these relationships and their relative importance to dairy farm profitability.

Since its introduction in 2001, the APR has proven to be both an accurate and reliable index of a sire's potential genetic contribution to dairy farm profitability. However, periodic updates are required to account for the changing farming environment including milk prices and input costs.

APR review

The APR is regularly reviewed as part of ADHIS' continuous improvement process to ensure the APR reflects current and future trends in the Australian dairy industry.

Recently, the ADHIS undertook a significant review of the APR. This process involved consultation with dairy farmers and the genetics industry.

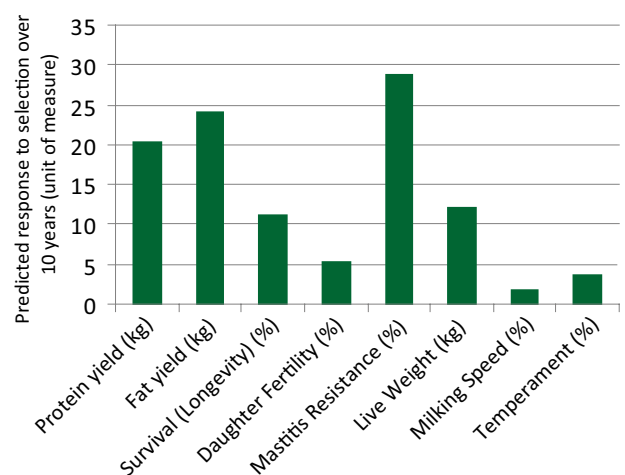
Feedback suggested that farmers are placing greater value on certain traits such as fertility, survival and mastitis resistance in order to address on-farm management issues.

Led by Jennie Pryce at the Department of Primary Industries, Victoria, the research team found that it is possible to update the APR formula to place more emphasis on non-production traits such as fertility, survival and mastitis resistance to address these selection issues whilst maintaining an overall objective of net farm profit.

Updated APR

From April 2010, the APR is calculated with an updated formula which places more emphasis on daughter fertility, survival and mastitis resistance with a slight reduction in emphasis on production traits. Figure 1 shows the expected genetic trends in eight traits resulting from bull selection based on APR.

Figure 1: Predicted response to selection based on updated APR over 10 years.



A change in selection pressure for different traits ultimately results in the re-ranking of bulls. This minor re-ranking which favours bulls superior in fertility and survival will be seen in the top bull lists produced by ADHIS.

Frequently Asked Questions

Do I need to change the way I use the APR?

No, the APR will be used in exactly the same way as in the past. The only difference is that the updated APR will place more emphasis on daughter fertility, survival and mastitis resistance. Select from the top group of bulls ranked on APR that meet your individual breeding objective.

The updated APR will place more emphasis on daughter fertility, survival and mastitis resistance.

Will the bull list look different?

Yes, there is some re-ranking of bulls. This is for one of three reasons:

1. Bulls change their rank because of the updated APR formula.
2. Bulls may also change as a result of updated ABVs based on new data collected through herd-recording and breed societies. This is the normal movement in bull ABVs that can occur every ABV release.
3. The annual update of the average (base from which ABVs are compared) may cause some minor adjustments in the April ABV release. This annual update is done every April.

Why has the APR of bulls increased?

The APR values for top bulls has also increased due to the update of prices in the index. Remember, the APR is expressed as net profit per cow per year. Net profit is influenced by economic trends, particularly the price paid for protein and fat and feed costs. The new APR takes into account updates to input and output prices and these impacts are reflected in the magnitude of a bull's APR.

Can I still find bulls to meet my breeding objective?

Selectabull is a free tool available on the ADHIS website that allows dairy farmers to produce a list of bulls suited to their own breeding objective. Selectabull is updated with every ABV release (January, April and August each year). The April 2010 update incorporates the updated APR formula.

Selectabull is very simple to use and makes it easy to make objective comparisons and selection decisions.

All the information in Selectabull, including the APR, comes from the ADHIS data base, which is independent of any commercial interests.

In summary

The APR identifies the top group of bulls for net profit from which bulls can be selected to meet individual breeding objective. From April 2010, a new APR formula has been used which is the result of the latest research and industry consultation. The new formula places additional emphasis on traits such as survival, fertility and mastitis resistance.

Ultimately the APR brings the most profitable group of bulls to the top of the list. Farmers can select bulls from the top list that meet their individual breeding objectives with confidence knowing that they have made profitable breeding decisions.

The APR brings the most profitable group of bulls to the top of the list.

ADHIS is an Australian Dairyfarmers Ltd (ADF) initiative that is backed by dairy farmers through their Dairy Service Levy and government funds.

Published by ADHIS Pty Ltd. This Technote is published for your information only. It is published with due care and attention to accuracy, but ADHIS accepts no liability if, for any reason, the information is inaccurate, incomplete or out of date whether negligent or otherwise. For more information contact ADHIS at Level 2, Swann House, 22 William St, Melbourne, Vic 3000 Australia. Phone 03 8621 4240. Fax 03 8621 4280. Email dabernethy@adhis.com.au. Internet www.adhis.com.au.

Copyright ADHIS Pty Ltd 2010. All rights reserved ©