

New Angus Selection Indexes

Commonly Asked Questions



New selection indexes will be introduced for Angus seedstock cattle in the December 2021 TransTasman Angus Cattle Evaluation.

1. Why have the new selection indexes been introduced?

The current selection indexes have been published since December 2014 and so updates are necessary to ensure that the selection indexes remain relevant to the requirements of the current beef supply chain.

By comparison to the current selection indexes, the new selection indexes incorporate:

- **Updated analytical software:** The selection indexes published within the TransTasman Angus Cattle Evaluation are calculated using software called BreedObject. The new selection indexes utilise the latest version of this software, referred to as BreedObject version 6.

The features of the new BreedObject version 6 analytical software were discussed in a presentation by staff from the Animal Genetics & Breeding Unit (AGBU) at a special Angus CONNECT online event in August. To view the presentation, [click here](#).

- **Updated economic and production parameters:** All economic and production parameters used in the calculation of the selection indexes have been updated to reflect current production systems and markets.

2. What selection indexes will now be published?

Ten selection indexes will now be published for animals within the TransTasman Angus Cattle Evaluation (TACE).

The selection indexes cater for a wide range of different breeding systems, target markets and production systems, and include:

Index Name	Abbreviation
Angus Breeding Index	\$A
Domestic Index	\$D
Heavy Grain Index	\$GN
Heavy Grass Index	\$GS
Angus Breeding Low Feed Cost Index	\$A-L
Domestic Low Feed Cost Index	\$D-L
Heavy Grain Low Feed Cost Index	\$GN-L
Heavy Grass Low Feed Cost Index	\$GS-L
AngusPRO Index	\$PRO
Angus Terminal Sire Index	\$T

The \$A and \$A-L selection indexes will be published in the standard Estimated Breeding Value (EBV) display for an animal, whereas the other selection indexes will be made available from the Angus Australia website for those breeders who wish to use them in their selection decisions.

3. Why are there such a large number of selection indexes?

The new selection indexes provide a greater range of selection indexes to better cater for the diversity that exists within Angus breeding systems, target markets, production systems and breeding objectives.

The new selection indexes incorporate:

- **Selection indexes for different production systems:** Different selection indexes have traditionally been available for breeders targeting different market end-points. While this is still the case, selection indexes are now available for breeding programs operating in different production systems with the introduction of low feed cost versions of each selection index.

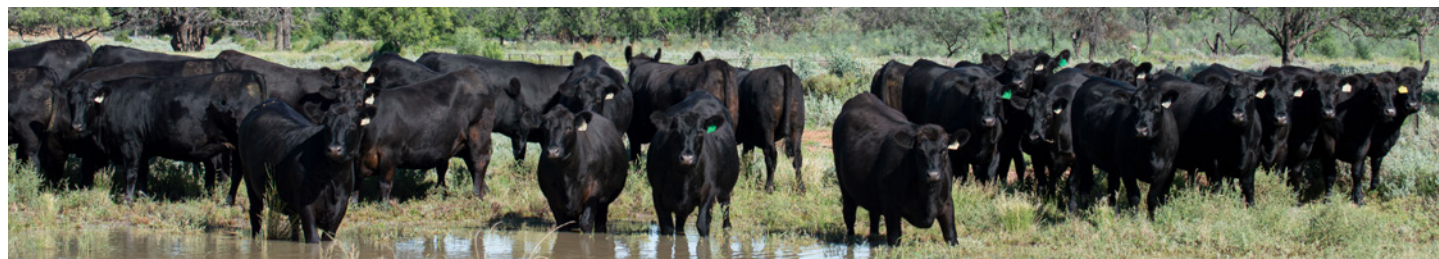
The low feed cost selection indexes cater for production systems where pasture is not fully utilised for the majority of the year, or where the cost of supplying additional feed is low, and hence, where an increase in the maintenance requirements of the mature female breeding herd results in minimal additional costs being incurred.

The low feed cost selection indexes do not consequently aim to limit an increase in mature cow weight, which is an objective in the other versions of these selection indexes.

- **Introduction of a Terminal Sire index:** The new selection indexes now incorporate a terminal sire index, known as the Angus Terminal Sire index, or \$T. This index is designed for situations where Angus bulls are being used as a terminal sire over mature breeding females and all progeny, both male and female, are slaughtered.

- **Introduction of a New Zealand index:** To assist the marketing of Australian Angus genetics in New Zealand, and with a number of Angus breeders in New Zealand now recording with Angus Australia, the new selection indexes incorporate a selection index specific to New Zealand production systems. The AngusPRO index (\$PRO) is designed for use in commercial self replacing herds based in New Zealand that are targeting the production of grass finished steers for the AngusPure programme.





4. With such a large number of selection indexes, how do breeders choose which selection index is relevant to them?

To assist Angus breeders identify which of the new selection indexes is relevant to their breeding program, an interactive decision support tool has been developed by Angus Australia's software development team.

The 'Selection Index Selector' decision support tool guides breeders through a short series of questions to identify the most appropriate selection index to use when selecting animals for their breeding program.

The 'Selection Index Selector' can be accessed from within the Angus Education Centre, or from the 'Tools' menu in Angus.Tech. ([click here](#)).

5. Was industry consultation undertaken as part of the process of developing the new selection indexes?

Consultation has been an integral component of the development of the new selection indexes, with an extensive consultation process facilitated by Angus Australia during 2021.

The consultation process commenced in April with the facilitation of an online member survey, accompanied by six member focus groups, to gather feedback on the selection indexes that are published in the TransTasman Angus Cattle Evaluation.

Based on the feedback obtained, a series of research selection indexes were developed by staff at Angus Australia, in collaboration with scientists at the Animal

Genetics & Breeding Unit and Agricultural Business Research Institute in Armidale.

The research selection indexes were released in August for industry review and feedback.

Feedback on the research selection indexes was collated via another online member survey in October, accompanied by four member focus groups, with input also obtained from Angus Australia's Genetic Evaluation Consultative Committee.

The extensive industry consultation that has been conducted has provided all Angus Australia members with an opportunity to provide input during the development of the selection indexes, and has ensured the new selection indexes are relevant to current Angus breeding programs.

6. How do the new selection indexes differ from the research selection indexes?

The new selection indexes are the same as the research selection indexes that were released in August, however changes have been made to the manner in which the selection indexes are presented.

The changes aim to address the two main areas of concern that were highlighted during the industry review and consultation, and include:

New names: The names of the selection indexes have been modified in response to feedback suggesting the 'maternal' and 'maternal plus' index categories used to describe the research selection indexes were confusing and did not clearly describe the differences in the production system modelled in the different categories.

Research selection index	New name
Angus Maternal Breeder (AMB)	Angus Breeding Low Feed Cost (\$A-L)
Maternal Domestic Steer (MDS)	Domestic Low Feed Cost (\$D-L)
Maternal Heavy Grain Steer (MGN)	Heavy Grain Low Feed Cost (\$GN-L)
Maternal Heavy Grass Steer (MGS)	Heavy Grass Low Feed Cost (\$GS-L)
Angus Maternal Breeder Plus (AMB+)	Angus Breeding (\$A)
Maternal Domestic Steer Plus (MDS+)	Domestic (\$D)
Maternal Heavy Grain Steer Plus (MGN+)	Heavy Grain (\$GN)
Maternal Heavy Grass Steer Plus (MGS+)	Heavy Grass (\$GS)
AngusPRO (PRO)	AngusPRO (\$PRO)
Angus Terminal Sire (ATS)	Angus Terminal Sire (\$T)

Inclusion of \$A and \$A-L in standard EBV display: Concerns were raised during the industry consultation regarding the potential confusion that may result from the introduction of a large number of selection indexes. The inclusion of the \$A and \$A-L selection indexes in standard EBV displays aims to maintain continuity in the display of selection index values, while still providing a larger number of selection indexes to cater for the diversity that exists in Angus breeding programs.

7. Where do I find further information about the new selection indexes?

A new module is available in the Angus Education Centre titled 'Understanding Angus Selection Indexes' that contains detailed information about all the new selection indexes.

The module includes general information about selection indexes and how they are calculated, along with a description of the breeding system, target market end-point and production system modelled in each selection index, the emphasis that is placed on each EBV in the calculation of each selection index, and the type of animals that rank highly on each selection index.

The Angus Education Centre module can be accessed from the 'Education' menu on the Angus Australia website. ([click here](#))

8. By comparison to the current selection indexes, will animals rank differently on the new selection indexes?

Yes. While in general, animals that rank highly on the current selection indexes will still rank highly on the new selection indexes, there will be some re-ranking of animals with the introduction of the new selection indexes.

As well as re-ranking, the magnitude of the new selection indexes is also higher, while there is also a greater difference between the selection index values of different animals.

The increase in the magnitude and spread of selection index values is due to several factors:

- While it is more sophisticated in practice, for the purposes of explanation, an economic index is calculated by multiplying each EBV by an economic value, and adding all the components together. This is illustrated in the formula below:

$$\text{Index} = (\text{EBV1} \times \text{EV1}) + (\text{EBV2} \times \text{EV2}) + (\text{EBV3} \times \text{EV3}) + \dots + (\text{EBVn} \times \text{EVn})$$

While the EBVs used when calculating the new selection indexes are the same, the considerable increase in beef prices, coupled with relatively stable costs, means the economic value of each trait is now considerably higher than what they were when the selection indexes published in the TransTasman Angus Cattle Evaluation were last updated in 2014.

The multiplication of the same EBVs by a higher economic value results in the selection index value having a higher value. Similarly, the same difference in EBVs between two animals now results in a larger difference in their selection index values.

- The selection index values published in the TransTasman Angus Cattle Evaluation include an adjustment that sets the breed average for each individual index to a similar level. These adjustments have not been made to the new selection indexes, meaning that the breed average values will be higher than those published in the TransTasman Angus Cattle Evaluation, and differ more between each individual index.

9. Do the new selection indexes need to be included in marketing materials?

No. There is no requirement to include the new selection indexes in printed sale catalogues and other marketing materials if members do not wish to do so.

10. If I wish to include the new selection indexes in marketing materials, which ones should I publish?

Angus Australia would encourage members to include the \$A and \$A-L selection indexes in printed sale catalogues and other marketing materials.

Consideration should also be given to including any of the other selection indexes that you deem to be particular relevance to your clients, however it is envisaged that the \$A and \$A-L will be sufficient in the majority of cases.

11. Who do I contact should I have any questions?

To further discuss the new selection indexes that are published in the TransTasman Angus Cattle Evaluation, please contact either Andrew Byrne, Breed Development & Extension Manager, on (02) 6773 4618 or andrew@angusaustralia.com.au, or one of Angus Australia's Breed Development Officer team.

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