



Review of Minimum EBV Accuracy Thresholds

The minimum accuracy thresholds that must be met before EBVs are published within Angus BREEDPLAN have been considerably revised in the December 2015 Angus BREEDPLAN analysis.

This document provides some background information explaining the rationale behind the implementation of revised thresholds.

Previous Minimum EBV Accuracy Thresholds

The previous minimum accuracy thresholds were quite complicated, with:

- The minimum accuracy thresholds differing between traits
- A different minimum accuracy threshold being applied to animals recorded with Angus Australia and the New Zealand Angus Association.
- A different minimum accuracy threshold being applied if animals had been either “observed” for a trait, or “not observed” for the trait. “Observed” was defined as having a trait analysed on either the individual animal or for at least one of their progeny.
- Some traits were published as a trait block, meaning that if one of the individual EBVs in the block met the minimum accuracy threshold, then all EBVs in the block would be published. Specifically:
 - 200, 400 & 600 Day Weight: If one EBV met the threshold, all 3 EBVs were published
 - EMA, Rib Fat, Rump Fat & RBV: If one EBV met the threshold, all 4 EBVs were published
- Animals for which a genomic prediction was recorded (ie. Zoetis i50K) were treated as being “observed” for the traits where genomic predictions were incorporated within the analysis.

Limitations with Previous EBV Minimum Accuracy Thresholds

While the previous EBV minimum accuracy thresholds criteria have been very successful for an extended

period of time, there were some limitations:

- Many breeders found the minimum accuracy threshold criteria non-transparent, overly complex and difficult to follow, and extension messages were difficult to explain.
- EBVs with a higher accuracy value than some published EBVs were not published on the basis that the animal had not been “observed”
- The previous criteria encouraged/necessitated members to submit performance information irrespective of its value for genetic evaluation simply to ensure EBVs were published (by lowering the minimum accuracy criteria from “unobserved” to “observed”). For example, where EBVs were required for selection or an upcoming sale.
- No consideration was given to the “effectiveness” of the observation that had been collected on an animal. Animals in single animal contemporary groups were treated as having being “observed” (with the exception of GL) and were subject to different minimum accuracy thresholds to animals that were “unobserved”, despite their performance contributing no effective information to the BREEDPLAN analysis.
- There was some inconsistency between the minimum accuracy thresholds that applied to animals recorded with Angus Australia and the New Zealand Angus Association. This meant that the same animal recorded with both breed organisations potentially had EBVs published in one country but not the other (although in practice this was rare).

Advantages of Previous EBV Minimum Accuracy Thresholds

While limitations existed, the major advantage of the previous EBV minimum accuracy thresholds was to encourage/necessitate members to submit performance information to obtain EBVs.

Upcoming Considerations

Looking towards the future, there were some

upcoming developments that warranted/necessitated a review of the minimum EBV accuracy thresholds that are applied within Angus BREEDPLAN.

Specifically, these include:

- The evolution of genomics means that there are now sources of information other than performance information that contribute to the calculation of EBVs, which challenges the “observed”, “non-observed concept”. Additionally there is an expectation by breeders if they invest in genomics that BREEDPLAN EBVs will be published for their animals.
- It is likely that criteria will shortly be implemented that require animals to be in appropriate condition for the inclusion of fat and IMF scanning measurements in BREEDPLAN. Maintenance of the previous minimum EBV accuracy thresholds may result in some breeders not having access to carcase EBVs for selection or sale purposes, particularly if joining or selling yearling bulls.

For example, if animals can-not be scanned in appropriate condition, their carcase EBVs will be considered “unobserved” and may not report despite the EBVs having higher accuracy than some “observed” animals. Any subsequent selection decisions will be based on either no information

and/or information of less use than the low accuracy EBV.

Review of Minimum EBV Accuracy Thresholds

In this context, a review of the previous minimum accuracy thresholds applied across the BREEDPLAN analyses for breeds in Australia was conducted. The review was facilitated by the BREEDPLAN Technical Liaison Group (BTLG) and involved staff from the Animal Genetics & Breeding Unit (AGBU), Agricultural Business Research Institute (ABRI), and several Breed Societies.

Having given due consideration to the various advantages and disadvantages, EBVs will now be published across all traits within Angus BREEDPLAN if they have an accuracy value of 25% or higher.

It is anticipated that similar minimum accuracy thresholds will now be implemented in the BREEDPLAN analyses that are conducted in other breeds.

Further Information

To further discuss the revisions to the minimum EBV accuracy thresholds, please contact Angus Australia’s Breed Development & Extension Manager, Andrew Byrne on (02) 6773 4618 or via email andrew@angusaustralia.com.au.

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