

## MEMORANDUM

**TO:** Users of the AE system  
**FROM:** Bill Montgomerie  
**DATE:** 14 April 2011  
**SUBJECT:** NZAEL publication policy

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### Summary

1. NZAEL has decided to suspend genomic data from NZAEL BW estimation until it is better able to provide comparability between estimates of merit of young sires.
2. NZAEL recognises the value for genomic technology to significantly increase the rate of genetic gain in the New Zealand dairy herd. However the procedures developed by NZAEL have been found to consistently over-predict the BW value of juvenile bulls with genomic information. Similar results have been observed in breeding programmes internationally.
3. In a competitive commercial environment farmers and breeding companies rely on NZAEL to provide comparable and accurate estimates of genetic merit. NZAEL believes that we are not able to currently provide that level of service inclusive of genomic data.
4. Genomic data will continue to be used by animal breeding companies. They have the responsibility to provide farmers with information on the methods they have used to include genomic data.
5. NZAEL will continue to work with breeding companies to calculate and publish evaluations containing genomic data for comparative purposes and research and will include genomic data in published BW as soon as the issues are sufficiently understood.
6. Our next step will be to undertake further research to test and monitor the ability of genomic information to accurately predict BW in juvenile bulls.

### Publication policy

- For all AE-enrolled bulls BW will be published by NZAEL utilising three information sources — pedigree, performance of related females in New Zealand and international performance of related females. (This means that genomic data will be suspended as a data source for BW for juvenile bulls, which will align the publication policy for juvenile bulls with that for progeny tested bulls and with NZAEL's Ranking of Active Sires List.)
- BW for NZAEL publication of AE-enrolled juvenile bulls will continue to be subject to Parent Average (PA) bias correction in accordance with the method adopted by NZAEL in February 2011.
- For all AE-enrolled bulls that have genomic data PPGI-Index will be published by NZAEL including four sources of information — pedigree, performance of related females in New Zealand, genomic information and international performance of related females.
- PPGI for NZAEL publication of juvenile bulls will be subject to correction for genomic biases as implemented in February 2011 by applying bias correction factors derived from validation testing.

### Rationale for suspending use of genomic data in juvenile BW evaluations

- While it is clear that genomic prediction is useful when selecting juvenile bulls, there are a number of uncertainties that affect these predictions.
- The genomically enhanced predictions are affected by inflation bias, and there is no fully validated means to correct for this. Consequently NZAEL cannot currently assure farmers about the accuracy of differences in genetic merit between genotyped and non-genotyped bulls if they are published in the same list.
- There is concern that the observed biases will change over time, for example as relationships between animals in the training population become more distant from the animals for which genetic merit is being predicted. Already, some high ranking 2009 / 2010 born bulls are sired by juveniles so are one generation further removed from the training population.

### Considerations for the future

- Some bull breeding companies are presently genotyping many thousands of female animals and applying novel techniques to improve the reliability of the genomic predictions. The NZAEL system will require significant development to accommodate these developments and other emerging technologies.
- NZAEL remains committed to genomics technology and to researching methods to accurately include genomic data in BW.