Genomics Update

World Technical Conference – Ireland 2019

Charolais Society of Australia Ltd

Colin Rex – General Manager



DNA Regulations

- Transitioned to SNP technology 1st January 2012
 - All overseas sires require GGP-HD (was 80K, now 130K)
 - All local sires require 50K
 - All ET Donors require 50K
 - Since 1st January 2018 all sires are sire verified if possible
 - All imported semen sires from 1st July 2019 require full parent verification.



Single Step Analysis

- Currently in Australia the following breeds have a Single Step Genomic Analysis
 - Angus
 - Wagyu
 - Hereford
 - Brahman

Charolais are hopefully next!





Single Step Progress

- Currently have 2,100 SNP profiles including 80 High Density (80K+)
- Averaging new 70 profiles a month

 Neogen are currently profiling a selection of sires at 770K for research.

 Stockpile of 1,200 DNA samples on hand from our BIN research project.



Interesting Side

- Homozygous Poll testing >1350 in last three years
- 581 Homozygous Poll identified
- 540 PcPc
- 40 PcPf
- 1 P_fP_f
- (472 Poll tests 2019, 633 Poll tests 2018)





Sire Verification

- Regulation all new sires to be verified to their sire if possible, e.g. SNP profile to test back to.
- 2019 YTD
 - Submitted 343 samples
 - 27 Sire failure (All since resolved) 7.8%
- 2018 Submitted 405 samples
 - 47 Sire failure (Most since resolved) 11.6%
 - 2 Unresolved (Downgraded to A Grade)

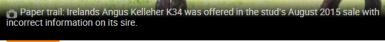




In The News

Angus herd \$200,000 One bull, Two samples

Society Disclaimer



CATTLE

Irelands Angus case: Disclaimers no cover for sire misrepresentation

PETER SOMERVILLE, The Weekly Times April 3, 2019 12:00am Subscriber only







STUD breeders can no longer rely on written disclaimers for protection from genotype or database errors after a landmark court decision last week.

A NSW court ruled Wagga Wagga stud Irelands Angus sold a bull, Irelands Kelleher K34, for \$18,000 to Bongongo Angus in August 2015, only for it to be sale catalogue. discovered the bull's sire

Court orders Ireland's Angus to pay more than \$200,000 following a mistake in a sale catalogue





Ramifications

- Many herds now sire verifying pre sale
- Some studs holding sires sold to registered herds prior to delivery

 Angus Society now identify all pedigree verification online/catalogues etc The suffix displayed at the end of each animal's name indicates the DNA parentage verification that has been conducted by Angus Australia.

PV: both parents have been verified by DNA

SV: the sire has been verified by DNA

DV: the dam has been verified by DNA

#: DNA verification has not been conducted

E: DNA verification has identified that the sire and/or dam may possibly be incorrect, but this cannot be confirmed conclusively.





The Future

Implement Single Step Analysis

- Involvement Research Projects
 - Australia Multi Breed EBV



