Repronomics - 2020

Greetings everyone! It has been another full-on year for the project and most of you would be aware we signed-off on a new 5-year contract with MLA and the MLA Donor Company. Thanks to DAF, NTDPI and AGBU (UNE/NSW DPI) for teaming up again. The project will continue to build the genomic reference populations for the tropical breeds through the evaluation of new genetics and our continued intensive recording. We will also be expanding into new recording and genetic technologies. Last week 50 of our key sires were sent off to be whole genome sequenced (~35 million SNP per animal).

Checking out the #20 BP heifers at Berrigurra

Current recording underway

We have cohorts of new and exciting genetics in the recording pipeline (#17s, #18s, #19s, #20s). The #21 cohorts are currently being born across our Queensland and NT research herds.

Calf birth processing in action at Spyglass

Unfortunately, the tough seasonal conditions at the end of last year resulted in low conception rates and AI pregnancies were also lower than previous years. However, we still expect to put about 800 project calves (#21) on the ground this calving season.

At each location the year-cohorts of females are moving through the system. The first-calf cows have completed their recording for anoestrous interval and weaned their first calf. And the next cohort of females (e.g. #18s at DAF & #19s at NTDPI) are now calving. Our latest heifer cohorts have been regularly ovarian scanned throughout the year for age at puberty and #19 BP heifers have been fitted with the Allflex collars and recently went into mating. The #20 heifer cohorts at all locations have recently commenced scanning for age at puberty, including the BP heifers that are currently having a 'holiday' at Berrigurra, Blackwater.

Project growing and linkages increase

Our efforts are ensuring that the size of the genomic reference populations continue to grow for our 3 breeds. The first phase of the project generated more than **5,800** calves representing more than **320** sires from **119** different studs…. and these numbers are increasing each year.

The first progeny have been born in the NSW sister-project (Southern Multi-breed Project), including Brahman and Brahman cross calves at Grafton research station. The Brahman calves are the progeny of Repronomics used Brahman sires.

Brahman & Brahman-cross calves at Grafton.

Recent cohorts of DAF steers continue to generate grow-out and valuable carcase & meat quality data. The #18 cohorts were slaughtered mid-year and the #19 and #20's are currently growing out at Taroom (Warraka) and the Clarke Creek (Jimandy) steers are now in the Barmount feedlot.

#19 Spyglass steers at Warraka, Taroom

Project driving BREEDPLAN enhancements

Repronomics data (records & SNP genotypes) continuously feed into the monthly Brahman single-step genomic BREEDPLAN evaluation. In collaboration with AGBU's BREEDPLAN R&D project, in April 2020 our data had a big impact on the Droughtmaster evaluation with the inclusion of more than 3,000 fully-recorded animals and the turning on of new EBVs in that breed for GL, FT, SF, and most importantly, the female reproduction EBV - days to calving.

May 2020 Droughtmaster BREEDPLAN

	Gestation Length (days)	Birth Wt. (kg)	200 Day Wt (kg)	400 Day Wt (kg)	600 Day Wt (kg)	Mat Cow Wt (kg)	Milk (kg)	Scrotal Size (cm)	Days to Calving (days)	Carcase Wt (kg)	Eye Muscle Area (sq cm)	Rib Fat (mm)	Rump Fat (mm)	Retail Beef Yield (%)	IMF (%)	Shear Force (kgs)	Flight Time (secs)
EBV	-4.8	-0.4	+20	+36	+50	+55	+11	+2.7	-6.0	+23	+5.9	-0.9	-0.7	+0.7	+1.1	+0.6	0.0
Acc	82%	93%	95%	95%	95%	89%	90%	89%	71%	89%	82%	83%	81%	63%	80%	71%	85%
Breed Avg. EBVs for 2018 Born Calves Click for Percentiles																	
EBV	+0.0	+0.1	+12	+18	+24	+25	+4	+1.4	+0.3	+14	+0.8	-0.1	+0.0	+0.5	+0.1	+0.0	+0.0

Statistics: Number of Herds: **11**, Progeny Analysed: **195**, Scan Progeny: **36**, Carcase Progeny: **9**, Number of Dtrs: **60**

EBVs explained DROUGHTMASTER

New Droughtmaster EBVs for a project sire

Santa Gertrudis BREEDPLAN, also uses all project data and recently transitioned to a new single-step genomic evaluation and our *Repronomics* data was pivotal in this development.

Project annual meeting

In August we managed to finally hold a (COVID-safe) project meeting at BP, but unfortunately not everyone was able to attend in person, but in true 2020 style - Zoom presentations saved the day. Thanks for the input from everyone, it was a great update to keep us all informed on recent analyses, data collection and plans for the next 12 months. We aim to launch our new project website shortly that will house the latest information on the project, including fact sheets and sire "pin-up" pages presenting their latest research EBVs.

Next generation genetics

The latest cohorts contain a range of new genetics in each of the 3 breeds, including new AI sires and a raft of natural-mate bulls purchased over the past few years. Included are the #20 progeny on these 3 emerging "superstars". Also new genetics have been sampled for the upcoming season that will drive increased selection accuracies in the future.

Glenlands D Watchman

NCC Justified

Rosevale Maverick M102

Thanks everyone

Thanks for the effort and contributions of everyone in helping to successfully complete the first phase of the project, and in securing the renewal project. We should all be proud of the tangible benefits we are delivering to northern beef industry.

Have a restful and happy holidays, ready for the New Year……cheers Johnno