



## Reference List of Published Outputs (2021 only)

### Books and Book Chapters

**Bunter, K L, Swan, A A and Brown, D J** (2021). "Improving reproduction in ewes." In S Hermesch and S Dominik (Eds.), *Breeding Focus 2021 – Improving Reproduction*, pp 127-142, Armidale, NSW: University of New England.

**Frost, E A; Chapman, N C; Banks, R G and Hermesch, S** (2021). "Breeding for improved fertility of honey bees." In S Hermesch and S Dominik (Eds.), *Breeding Focus 2021 – Improving Reproduction*, pp 97-109, Armidale, NSW: University of New England.

Harper, J; **Bunter, K L and Vargovic, L** (2021). "Improving reproductive performance in pigs." In S Hermesch and S Dominik (Eds.), *Breeding Focus 2021 – Improving Reproduction*, pp 85-96, Armidale, NSW: University of New England.

**Hermesch, S** and Dominik, S (Eds.) (2021). *Breeding Focus 2021 – Improving Reproduction*, Armidale, NSW: University of New England.

**Moore, K L; Wolcott, M L and Johnston, D J** (2021). "Genetic improvement of cow reproduction in northern Australia beef cattle breeds." . In S Hermesch and S Dominik (Eds.), *Breeding Focus 2021 – Improving Reproduction*, pp 151-162, Armidale, NSW: University of New England.

**Vargovic, L, Harper, J and Bunter, K L** (2021). "Opportunities from understanding health and welfare of sows." In S Hermesch and S Dominik (Eds.), *Breeding Focus 2021 – Improving Reproduction*, pp 37-48, Armidale, NSW: University of New England.

**Walmsley, B J** (2021). "Examining the relative importance of female reproduction in beef breeding herds when fully accounting for production costs." In S Hermesch and S Dominik (Eds.), *Breeding Focus 2021 – Improving Reproduction*, pp 111-126, Armidale, NSW: University of New England.

### Journal Articles

**Bunter K L; Swan A A; Gurman P M and Brown D J** (2020). "New genomically enhanced reproduction breeding values for Merino sheep allow targeted selection for conception rate, litter size and ewe rearing ability." *Animal Production Science* 61(3); 333-336 [doi.org/10.1071/AN20444](https://doi.org/10.1071/AN20444)

**Li, L; Gurman, P M; Swan, A A and Brown, D J** (2021). "Single-step genomic evaluation of lambing ease in Australian terminal sire breed sheep." *Animal Production Science* 61(18): 1990-1999 [doi.org/10.1071/AN21257](https://doi.org/10.1071/AN21257)

**Meyer, K** (2021). "Impact of missing pedigrees in single-step genomic evaluation." *Animal Production Science* 61(18): 1760-1773 [doi.org/10.1071/AN21045](https://doi.org/10.1071/AN21045)

Moghaddar, N; **Brown, D J; Swan, A A; Gurman, P M; Li, L** and van der Werf, J H J (2021). "Genomic prediction in a numerically small breed population using prioritized genetic markers from whole-genome sequence data." *Journal of Animal Breeding and Genetics*, 139: 71-83.

[doi.org/10.1111/jbg.12638](https://doi.org/10.1111/jbg.12638)

Mueller, M L; Cole, J B; **Connors, N K; Johnston, D J**; Randhawa, I A S and Van Eenennaam, A L (2021). "Comparison of gene editing versus conventional breeding to introgress the polled allele into the tropically adapted Australian beef cattle population." *Frontiers in Genetics* 12(68)

[doi.org/10.3389/fgene.2021.593154](https://doi.org/10.3389/fgene.2021.593154)

Nel, C L; **Swan, A A**; Dzama, K; Scholtz, A J and Cloete, S W P (2021). "Genetic parameters and trends for lamb survival following long-term divergent selection for number of lambs weaned in the Elsenburg Merino flock." *Animal Production Science* 61(18): 1965-1981 [doi.org/10.1071/AN21198](https://doi.org/10.1071/AN21198)

Saradadevi, R; Mukankusi, C; **Li, L**; Amongi, W; Mbiu, J P; Raatz, B; Ariza, D; Beebe, S; Varshney, R K; Huttner, E; Kinghorn, B; **Banks, R G**; Rubyogo, J C; Siddique, K H M and Cowling, W A (2021).

"Multivariate genomic analysis and optimal contributions selection predicts high genetic gains in cooking time, iron, zinc, and grain yield in common beans in East Africa." *Plant Genome*; e20156

[doi.org/10.1002/tpg2.20156](https://doi.org/10.1002/tpg2.20156)

**Vargovic, L; Hermesch, S**, Athorn, R Z and **Bunter, K L** (2021). "Feed intake and feeding behaviour traits for gestating sows recorded using electronic sow feeders." *Journal of Animal Science* 99(1): 1-12

[doi.org/10.1093/jas/skaa395](https://doi.org/10.1093/jas/skaa395)

**Vargovic, L; Hermesch, S**, Athorn, R Z and **Bunter, K L** (2021). "Feed intake and feeding behaviour traits for gestating sows are associated with undesirable outcomes." *Livestock Science*

[doi.org/10.1016/j.livsci.2021.104526](https://doi.org/10.1016/j.livsci.2021.104526)

## Conference Papers

**Alexandri, P; Walkom, S F** and **Brown, D J** (2021). "Genetic association between ultrasound and carcass muscle dimension measures in sheep." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [26-29](#).

**Alexandri, P; Banks, R G; Brown, D J** and **Walkom, S F** (2021). "Merits of developing a genetic evaluation for the Australian dairy sheep and goat industries." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [30-33](#).

**Banks, R G** (2021). An approach to coordinating and encouraging investment in phenotypes. Proceedings of the 44<sup>th</sup> ICAR Annual Conference virtually held from Leeuwarde, The Netherlands, 26 – 30 April, p215

**Brown, D J; Bunter, K L** and **Swan, A A** (2021). "Is there genetic variation in foetal loss after pregnancy scanning in sheep?" In *Proceedings of the 33rd Biennial Conference of the Australian Society of Animal Sciences*, Fremantle, Western Australia, 1-3 February. *Animal Production Science Paper 232*

**Brown, D J; Guy, S Z Y**; Pethick, D W; Pannier, L; McGilchrist, P; Stewart, S M and Gardner, G E (2021). "Preparing for MSA score in lamb: What are the drivers of variation?" In *Proceedings of the 33rd Biennial Conference of the Australian Society of Animal Sciences*, Fremantle, Western Australia, 1-3 February. *Animal Production Science Paper 224*

**Brown, D J and McMillan, A J** (2021). "Could faecal moisture score be used to help select against DAG score in sheep?" In *Proceedings of the 33rd Biennial Conference of the Australian Society of Animal Sciences*, Fremantle, Western Australia, 1-3 February. *Animal Production Science* [Paper](#).

**Bunter, K L and Swan, A A** (2021). "Phenotypic trade-offs between lambs and wool reflect weak antagonistic genetic correlations between reproductive and wool traits." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [46-49](#).

**Bunz, A M G; Bunter, K L; Morrison, R S; Luxford, B G and Hermesch, S** (2021). "Sows with a higher weaning number had a higher subsequent farrowing-rate reduction in the most stressful fertility season." Proceedings of the 18th Biennial Conference of the Australian Pig Science Association (APSA), Brisbane, Queensland. 15-18 November, [Paper 16](#)

**Connors, N K; Walmsley, B J and Donoghue, K A** (2021). "Addressing scur phenotypic challenges with the Southern Multi-Breed Project." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [70-73](#).

**De La Cruz, L; Walkom, S F and Swan, A A** (2021). "The impact of genotype by environment interaction on breeding vales for 150-day weight in Katahdin sheep in Mexico." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [82-85](#).

Donoghue, K A; **Walmsley, B J; Siddell, J P; Granleese, T; Penrose, L and Arthur, P F** (2021). "Southern Multi-breed resource population: Generation of cohorts one and two." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [98-101](#).

**Ferdosi, M H; Connors, N K and Khansefid, M** (2021). "The effects of number of reference individuals on the accuracy of imputation from low and medium densities to high density." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [114-117](#).

**Ferdosi, M H; Connors, N K and Khansefid, M** (2021). "Evaluation of haplotype diversity of Australian beef populations using medium-density SNP genotypes." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [118-121](#).

Goode, E H; Plush, K J and **Hermesch, S** (2021). "Seasonal fertility in terms of number of pigs born alive is affected by sow parity." Proceedings of the 18th Biennial Conference of the Australian Pig Science Association (APSA), Brisbane, Australia. 15-18 November, [Paper 14](#)

Granleese, T; Mortimer, M R and **Walkom, S F** (2021). "Is sex determination in Merinos heritable?" Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [131-134](#).

**Gurman, P M; Li, L; Swan, A A; Moghaddar, N and van der Werf, J H J** (2021). "Multivariate analyses using two genomic relationship matrices to weight predictive SNP markers." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [135-138](#).

**Guy, S Z Y; Kellier, J and Brown, D J** (2021). "Preliminary genetic analysis of wool-shedding ability in sheep." In *Proceedings of the 33rd Biennial Conference of the Australian Society of Animal Sciences*, Fremantle, Western Australia, 1-3 February. *Animal Production Science* [Paper 184](#)

**Guy, S Z Y; Walkom, S F; Marimuthu, J; Gardner, G E and Brown, D J** (2021). "Microwave technology is a potential tool for the genetic selection of carcass composition in lamb." In *Proceedings of the 33rd Biennial Conference of the Australian Society of Animal Sciences*, Fremantle, Western Australia, 1-3 February. *Animal Production Science* [Paper 238](#)

**Guy, S Z Y and Brown, D J** (2021). "Characterising the quantity and quality of data used in Merino sheep genetic evaluation systems." *Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics*. 2-4 November, pp [139-142](#).

**Guy, S Z Y and Brown, D J** (2021). "Maximising genetic gains with data quantity and quality in Merino flocks." *Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics*. 2-4 November, pp [143-146](#).

**Harper, J; Bunter, K L and Hermes, S** (2021). "Piglet birthweight affects fostering outcomes for pre-weaning survival." *Proceedings of the 18th Biennial Conference of the Australian Pig Science Association (APSA)*, Brisbane, Australia. 15-18 November, [Paper 8](#)

**Hermes, S** (2021). "Considering seasonal effects on farrowing rate and litter size in sow breeding objectives." *Proceedings of the 18th Biennial Conference of the Australian Pig Science Association (APSA)*, Brisbane, Australia. 15-18 November, [Paper 15](#)

**Hermes, S** (2021). "Economic values for farrowing rate to improve seasonal fertility." *Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics*. 2-4 November, pp [159-162](#).

**Shariful-Islam, M; van der Werf, J H J, Boerner, V and Hermes, S** (2021). "Improvement of meat and carcass quality traits using genomics in pig sire lines." *Proceedings of the 18th Biennial Conference of the Australian Pig Science Association (APSA)*, Brisbane, Australia. 15-18 November, [Paper 66](#)

**Shariful-Islam, M; van der Werf, J H J, Boerner, V and Hermes, S** (2021). "The predicted responses to genomic selection in growing pigs." *Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics*. 2-4 November, pp [171-174](#).

**Li, L; Gurman, P M; Swan, A A; Moghaddar, N and van der Werf, J H J** (2021). "Evaluating the benefits of including predictive SNP markers in single step evaluation in sheep using cross-validation." *Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics*. 2-4 November, pp [200-203](#).

**Madsen, M D; van der Werf, J H J; Börner, V and Clark, S** (2021). "Macro- and micro-genetic environmental sensitivity for 400 day weight in Australian Angus." *Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics*. 2-4 November, pp [217-221](#).

**Miller, S P; Archer, J A; Hely, F; Quinton, C; Retallick, K; Moser, D and Amer, P** (2021). "A new tool to select Angus bulls to breed to dairy cows." *Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics*. 2-4 November, pp [234-237](#).

**Moghaddar, N; Bunter, K L; Swan, A A; Li, L, Gurman, P M and van der Werf, J H J** (2021). "The effect of GDF9 on litter size in Australian sheep." *Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics*. 2-4 November, pp [238-241](#).

**Moore, K L; Grant, T P and Johnston, D J** (2021). "Genetic analysis of body condition and growth traits in beef females within and across ages and physiological states." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [247-250](#).

Mortimer, S I; Egerton-Warburton, K L and **Swan, A A** (2021). "Impact of ewe genotype on sire breeding values in genetic evaluation of Merino visual traits." In *Proceedings of the 33rd Biennial Conference of the Australian Society of Animal Sciences*, Fremantle, Western Australia, 1-3 February. *Animal Production Science Paper 84*

Mortimer, S I; Egerton-Warburton, K L and **Swan, A A** (2021). "Impact of ewe genotype on sire breeding values in genetic evaluation of Merino body composition and components of reproduction." In *Proceedings of the 33rd Biennial Conference of the Australian Society of Animal Sciences*, Fremantle, Western Australia, 1-3 February. *Animal Production Science Paper 85*

Mortimer, S I; **Swan, A A** and **Bunter, K L** (2021). "Ewe reproduction status and its impact on greasy fleece weight breeding values." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [251-254](#).

Mortimer, S I; Smith, J L; Hine, B C; Fowler, S M; Holman, B W B; Hopkins, D L; Egerton-Warburton, K L and **Swan, A A** (2021). "Variation between Merino sires in lamb carcass value." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [255-258](#).

Paneru, U; **Brown, D J**; Moghaddar, N and van der Werf, J H J (2021). "Investigation of methods for inclusion of fixed effects for ultrasound scan carcass traits in large scale sheep genetic evaluation." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [280-283](#).

Piper, L R; **Swan, A A**; Elsen, J M; Bodin, I; Brewer, H G and Bindon, B M (2021). "An evaluation of the effect of the Booroola gene, FecB, on productivity in a Border Leicester x Merino prime lamb production system." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [296-299](#).

**Rahman, M O A; Brown, D J and Walkom, S F** (2021). "Defining longevity and estimating genetic parameters in Australian Merino ewes." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [312-315](#).

**Samaraweera, A M; Torres-Vázquez, J A; Jeyaruban, M G; Johnston, D J and Boerner, V** (2021). "Estimation of optimum polygenic and genomic weights in single-step genetic evaluation of carcass traits in Australian Angus beef cattle." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [345-348](#).

**Sarker, N R; Walmsley, B J and Hermesch, S** (2021). "Improving carcass value by incorporating primal weights into pig breeding objectives." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [353-356](#).

**Sarker, N R; Walmsley, B J and Hermesch, S** (2021). "Variance components estimation for body length and area traits derived from image analysis of live pigs." Proceedings of the 18th Biennial Conference of the Australian Pig Science Association (APSA), Brisbane, Australia. 15-18 November, [Paper 64](#)

**Sarker, N R; Walmsley, B J and Hermesch, S** (2021). "Estimation of genetic correlations between primal cut weights and length or area traits in live pigs." Proceedings of the 18th Biennial Conference of the Australian Pig Science Association (APSA), Brisbane, Australia. 15-18 November, [Paper 65](#)

Shields, S M; **Hermesch, S**; Nicholas, F W and Tammen, I (2021). "Curation of pig traits in the Online Mendelian Inheritance in Animals (OMIA) database." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [390-396](#).

Stephen, L M; Bradley, P E; **Brown, D J**; Jones, C E; Rose, G and **Swan, A A** (2021). "Targeted extension to improve genetic gain by region is now possible." In *Proceedings of the 33rd Biennial Conference of the Australian Society of Animal Sciences*, Fremantle, Western Australia, 1-3 February. *Animal Production Science* [Paper](#).

**Swan, A A** and **Bunter, K L** (2021). "Deriving breeding values for net reproduction rate form component traits in sheep." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [382-385](#).

**Torres-Vázquez, J A; Samaraweera, A M; Jeyaruban, M G; Johnston, D J and Boerner, V** (2021). "Determination of optimum weighting factors for single-step genetic evaluation via genetic variance partitioning." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [402-405](#).

Vargas Jurado, N; Taylor, J B; Notter, D R; **Brown, D J** and Lewis, R M (2021). "Heterotic and breed effects in crossbred lambs." *ASAS-CSAS-SSASAS Annual Meeting and Trade Show*, Louisville, Kentucky, 14-17 July, [PSXI-9](#).

**Vargovic, L** and **Bunter, K L** (2021). "Gilts and sows adapt feed intake and feeding behaviour differently when moved into dynamic groups with electronic sow feeders." Proceedings of the 18th Biennial Conference of the Australian Pig Science Association (APSA), Brisbane, Australia. 15-18 November, [Paper 22](#)

**Vargovic, L; Bunter, K L and Hermesch, S** (2021). "Genetic parameters for urinalysis traits recorded on gestating sows in maternal breeding objectives for pigs." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [406-409](#).

**Vargovic, L; Hermesch, S and Bunter, K L** (2021). "Genetic parameters for urinalysis traits recorded on gestating sows." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [410-413](#).

**Wahinya, P K; Swan, A A and Jeyaruban, M G** (2021). "Proposed genetic improvement strategies for dairy cattle in Kenya." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [414-418](#).

**Walkom, S F**; Donoghue, K A; Arthur, P F; Clark, S A and **Walmsley, B J** (2021). "Using matesel to aid sire allocation in Genomic reference populations – Southern Multi-breed an example." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [419-422](#).

**Walkom, S F** and **Bunter, K L** (2021). "Improve your social license – Breed sheep for disease resistance." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [486-489](#).

Wallace, J S; Egerton-Warburton, K L and **Swan, A A** (2021). "Economic analysis of Merino ewe performance from diverse industry sires using GrassGro™." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [337-340](#).

**Walmsley, B J**; Donoghue, K A; **Johnston, D J**; Clark, S A; Siddell, J P; **Walkom, S F**; Granleese, T and Arthur, P F (2021). "Initiating the Southern Multi-Bred Resource population." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [423-426](#).

Egerton-Warburton, K L, Smith, J L; Mortimer, S I; **Swan, A A** and Hine, B C (2021). "The importance of early environmental effects on Merino fleece trains across two shearings." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [259-262](#).

**Wolcott, M L**; **Banks, R G** and Alder, G (2021). "Genetics of heifer age at puberty in Australian Angus cattle." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [439-442](#).

**Zhang, Y D** and **Banks, R G** (2021). "Genetic diversity and trends of Australian Japanese Black cattle." Proceedings of the 24th Conference of the Association for the Advancement of Animal Breeding and Genetics. 2-4 November, pp [451-454](#).