Literature list, Designing breeding programmes HV0195, 2022

Some additional reading will be provided to you during the course, mainly optional articles that will be posted in our virtual classroom Canvas, that you will get access to at the start of the course.

Background knowledge *(for those that need an update this is strongly recommended to read before or early during the course)*

Kor Oldenbroek and Liesbeth van der Waaij, 2015. Textbook Animal Breeding and Genetics for BSc students. Centre for Genetic Resources The Netherlands and Animal Breeding and Genomics Centre, 2015. Groen Kennisnet: https://wiki.groenkennisnet.nl/display/TAB/Textbook+Animal+Breeding+and+Genetics

Breeding goal, economic weights

Groen A.F., Steine, T., Collea, J-J., Pedersen, J., Pribyl, J., Reinsch, N. 1997. Economic values in dairy cattle breeding, with special reference to functional traits. Report of an EAAP-working group. Livestock Production Science 49, 1-21. Canvas

Wolfova, M., Wolf, J. 2013. Strategies for defining traits when calculating economic values for livestock breeding: a review. Animal 7:9, pp 1401–1413. Canvas Canvas

Compendium and statistical methods *(Good to read early during the course)*

Compendium: Genetic evaluation (36 pp) with Appendix. Canvas

Compendium: Selection and genetic change (22 pp), with Appendix. Canvas

Compendium: Statistical methods in animal breeding (35 p). Canvas

Zuur A.F., Ieno, E.N., Elphick, C.S. 2010. A protocol for data exploration to avoid common statistical problems. Methods in Ecology & Evolution 2010, 3–14. Canvas

Crossbreeding

Sørensen, M.K., Norberg, E., Pedersen, J. and Christensen, L.G. 2008. Invited Review: Crossbreeding in Dairy Cattle: A Danish Perspective. J. Dairy Sci., 91:4116-4128. Canvas

Clasen, J.B., Kargo, M. Østergaard, S., Fikse, W.F., Rydhmer, L., Strandberg, E. 2021. Genetic consequences of terminal crossbreeding, genomic test, sexed semen, and beef semen in dairy herds. J. Dairy Sci. 104:806-8075. Canvas

Van Vleck, L.D., Pollak, E.J., Branford Oltenacu, E.A. 1987. Genetics for the Animal Sciences. W.H. Freeman and Company, New York. Pp 357-368. Canvas

Ethics, behavior, longevity

Eriksson, S., Jonas, E., Rydhmer, L., Röcklinsberg, H. 2018. Invited review: Breeding and ethical perspectives on genetically modified cattle. J. Dairy Sci. 101, 1-17. Canvas

Neeteson-van Nieuwenhoven, A.M., Merks, J., Bagnato, A., Liinamo, A.-E. 2006. Sustainable transparent farm animal breeding and reproduction. Livestock Science 103, 282–291. Canvas

Röcklinsberg, H., Gamborg, C., Gjerris, M., Rydhmer, L., Tjärnström, E., Wallenbeck, A. 2016. Understanding Swedish dairy farmers' view on breeding goals - ethical aspects of longevity. In Olsson et al. Food

futures: ethics, science and culture. 13th Congress of the European Society for Agricultural and Food Ethics, Porto, 28 Sept 1 - Oct 2016. Canvas

Genetic modifications

Jenko, J., Gorjanc, G., Cleveland, M.A., Varshney, R.K., Whitelaw, C.B.A., Woolliams, J.A., Hickey, J.M. 2015. Potential of promotion of alleles by genome editing to improve quantitative traits in livestock breeding programs. Genetics Selection Evolution 47-55. Canvas

Genomic selection, MAS

Dekkers, J.C.M. 2004. Commercial application of marker- and gene-assisted selection in livestock: Strategies and lessons. J. Anim. Sci. 82:E313-328. Canvas

García-Ruiz, A., Cole, J.B., VanRaden, P.M., Wiggans, G.R., Ruiz-López, F.J., and Van Tassell, C.P. 2016. Changes in genetic selection differentials and generation intervals in US Holstein dairy cattle as a result of genomic selection PNAS July 12, 2016. 113 (28) E3995-E4004. Canvas

Jonas, E & deKoning, DJ, 2015. Genomic selection needs to be carefully assessed to meet specific requirements in livestock breeding programs. Frontiers in Genetics. Volume 6, Article 49, 1-8. Canvas

Meuwissen, T., Hayes, B. 2016. Genomic selection: A paradigm shift in animal breeding. Animal Frontiers, Vol. 6, No. 1. Canvas

Sonesson, A.K, Ødegård, J. 2016. Mating structures for genomic selection breeding programs in aquaculture. Genetics Selection Evolution 48:46. Canvas

Genotype by environment interactions

Hammami, H., Boulbaba, R and Gengler, N. 2009. Genotype by environment interaction in dairy cattle. Biotechnol. Agron. Soc. Environ. 13(1), 155-164. Canvas

Sustainable breeding, genetic resources

Djekic, I.V., 2021. Meat supply chain in the perspective of UN SDGs. Theory and practice of meat processing. 2021;6(3):242-247. https://doi.org/10.21323/2414-438X-2021-6-3-242-247 Canvas

EFFAB, 2012. European forum of farm animal breeders. Read about CODE-EFABAR at http://www.responsiblebreeding.eu/. Canvas (link)

FAO, 2010. Breeding strategies for sustainable management of animal genetic resources. FAO Animal production and health guidelines. No. 3. Rome. Pages 94-139; Section D Developing straight-breeding programmes and Section E Developing cross-breeding programmes. Available on http://www.fao.org/docrep/012/i1103e/i1103e.pdf Canvas (link)
See also https://sustainabledevelopment.un.org/?menu=1300.

GenTORE, 2021. Supporting farmers to get the right balance between resilience and efficiency. Resilience + efficiency = Sustainability https://www.youtube.com/watch?v=6a5QEtbLaig *(GenTORE Video, NOTE: there are more videos from researchers within GenTORE to be found on youtube if you are interested).*

Hansen Axelssson, H. 2013. Breeding for Sustainable Milk Production - From Nucleus Herds to Genomic Data Doctoral Thesis 2013:43, SLU. (Summarizing chapter) Epsilon/Canvas

Jordbruksverket, 2009. A short version the action plan for the long-term sustainable management of Swedish animal genetic resources 2010-2020. Canvas

Meuwissen, T. 2009. Genetic management of small populations: A review. Acta Agriculturae Scand Section A. 59:71-79. Canvas

Olesen, I., Groen, A.F. and Gjerde, B. 2000. Definition of animal breeding goals for sustainable production systems. J. Anim. Sci. 78: 570-582. Canvas

Philipsson J., Rege, J.E.O., Zonabend E. and Okeyo A.M. 2011. Sustainable breeding programmes for tropical farming systems In: Animal Genetics Training Resource, version 3, 2011. Ojango, J.M., Malmfors, B. and Okeyo, A.M. (Eds). International Livestock Research Institute, Nairobi, Kenya, and Swedish University of Agricultural Sciences, Uppsala, Sweden. Canvas

Woolliams, J, Berg, P, Mäki-Tanila, A, Meuwissen, T, Fimland, E. 2005. Sustainable management of animal genetic resources. Nordic gene bank farm animals. Norway. ISBN 82-997123-1-9. A number of books will be available to borrow from the course leader.

Use of reproduction technologies

Gordon, IR. 2017. Reproductive Technologies in Farm Animals. 2nd edition. CABI Publishing. EBOOK ISBN 9781786392626. Available on internet. Chapter 1.3-1.3.5, 1.3.9. (Current RTs); 2.1-2.1.5 (AI); 2.3 (intro), 2.3.3-2.3.4 (Semen sexing); 3-3.1.3 (Embryo transfer); 3.3-3.3.1 (Application ET); 4.1 (Intro, not 4.1.1-) (In vitro embryo prod.); 2.4 (DNA Technology, read to get an overview, not all details). Read online: ProQuest Ebook Central - Detail page*, you need to be logged in as SLU student (if from home via VPN).*

Kashinatan, P., Wei, H., Xiang, T., Molina, J. A., Metzger, J., Broek, D., Kasinathan, D., Faber, D.C., Allan, M.F. 2015. Acceleration of genetic gain in cattle by reduction of generation interval. Scientific Reports 5: 8674. Canvas