The applications of genetics in the veterinary science

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Abstract (300 word limit)

Animal selection has generated a variety of phenotype that evolved into distinct breeds scattered across the globe. Investigations of animal population history, breeding decisions, and patterns of geographic evolution are being accessed using genomic information. The use of genetics have clearly improve the process to identify and to select most suitable animal for different environments. With this we have observed a enormous progress on the production of different animal species. Thus, the assessment of genetic information has become essential to the implementation of selection programs in different animal breeds.

However with the intensification of the animal selection, we also have observed the appearance in the frequency of deleterious alleles in different populations, involved with disease traits. Therefore, the use of genomic information has become an important tool to identify and to characterize different genetic variations involved with animal diseases, being used now to help in the selection process against this phenotype.

The objective of my talk is to cover the use of genetics to understand different genetic mechanisms involved with diseases traits.

Image

Recent Publications (minimum 5)

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10.

1. Kiser, J. N. ; Wang, Z. ; Zanella, R. ; Scraggs, E. ; Neupane, M. ; Cantrell, B. ; Van Tassel, C. ; White, S. ; Taylor, Jeremy F. ; Neibergs, Holly Louise (2021) . Functional variants surrounding endothelin 2 are associated with Mycobacterium avium subspecies paratuberculosis infection. FRONTIERS IN VETERINARY SCIENCE, v. 1, p. 1.

2. Quadros, D. ; Zanella, R. ; Bondan, C. ; Zanella, G. C. ; Facioli, F. L. ; Silva, A. N. ; Zanella, E. L. (2020) Study of vaginal microbiota of Holstein cows submitted to a estrus synchronization protocol with the use of intravaginal progesterone device. Research In Veterinary Science, v. 131, p. 1-6.

3. De Oliveira Peixoto, J. ; Savoldi, I.R. ; Ibelli, A.M.G.; Cantão,M.E. ; Jaenisch, F.R.F. ; Giachetto, P.F. ; Settles, M. ; Zanella, R. ; Marchsi, J.A.P. ; Pandolfi, J.R ; Coutinho, L.L. ; Ledur, M.C. (2019) . Proximal femoral head transcriptome reveals novel candidate genes related to epiphysiolysis in broiler chickens. BMC Genomics, v. 20, p. 1031.

4. Lago, L. V. ; Silva, A. N. ; Zanella, E. L. ; Marques, M. G. ; Peixoto, J. O. ; Silva, M. V. G. B. ; Ledur, M. C. ; Zanella, R. (2018). Identification of Genetic Regions Associated with Scrotal Hernias in a Commercial Swine Herd. Veterinary Sciences, v. 5, p. 15, .

5. Facioli, F. L. ; Bezutti, G. ; Bender, R. S. ; Marques, M. G. ; Bondan, Carlos ; Zanella, Eraldo Lourenso ; Zanella, R. (2021). A rare case of heteropaternal twin calves after natural mating in Brazil. Animal Reproduction, v. 17, p. e20200217.

6. Pertille, F. ; Moreira, G. ; Zanella, R. ; Nunes, J. R. ; Boschiero, C. ; Rovadoscki, G. ; Mourao, G. B. ; Ledur, M. C. ; Coutinho, L. L.(2017) . Genome-wide association study for performance traits in chickens using genotype by sequencing approach. Scientific Reports, v. 7, p. 41748, .

7. Zanella, R.; Mores, Nelson ; Mores, M. ; Peixoto, J. O. ; Zanella, E. L. Ou Zanella, E. ; Zanella, J. R. ; Ibelli, A. M. G. ; Gava, D. ; Cantao, M. E. ; Ledur, M. C., (2016). Genome-Wide Association Study Of Periweaning Failure-To-Thrive Syndrome (PFTS) In Pigs. Veterinary Record, V. 179, P. Vetrec-2015-103546.

8. Zanella, R.; Gava, D. ; Peixoto, J. O. ; Schaefer, R. ; Zanella, J. R. ; Biondo, N. ; Silva, M. V. G. B. ; Cantao, M. E. ; Ledur, M. C.(2015) . Unravelling The Genetic Components Involved In The Immune Response Of Pigs Vaccinated Against Influenza Virus. Virus Research (Print), V. 210, P. 327-336.

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Biography (150 word limit)

Ricardo Zanella has completed his Ph.D. at the age of 30 years from Washington State University, Pullman, WA. He is the president of Associação Gaúcha de Buiatria and the vice-president of the Brazilian Buiatrics Association. He is an adjunct professor at the University of Passo Fundo. He has published more than 50 papers in reputed journals and serving as an editorial board member of different scientific journals.

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