MINISTERIO DE CIENCIA E INNOVACIÓN

CURRICULUM VITAE (maximum 4 pages)

AGENCIA ESTATAL DE INVESTIGACIÓN

CV date	31/08/23

Part A. PERSONAL INFORMATION

First and Family name	Francisco Javier Manteca Vilanova		
Social Security, Passport, ID number		Age	
Researcher codes	Open Researcher and Contributor ID (ORCID**)	http://orcid.org/0000-0002-2061-4179	
	SCOPUS Author ID (*)		
	WoS Researcher ID (*)		

(*) Optional
(**) Mandatory

A.1. Current position

Name of University/Institution	Autonomous University of Barcelona			
Department	Animal and Feed Science			
Address and Country	Edifici V, Campus UAB, 08193 Bellaterra (Spain)			
Phone number	34935811647	E-mail	xavier.manteca@uab.es	
Current position	Professor		From	2011
Key words	Animal welfare, animal behaviour			

A.2. Education

PhD, Licensed, Graduate	University	Year
PhD	Autonomous University of Barcelona	1992
Msc	University of Edinburgh	1991
Bvsc	Autonomous University of Barcelona	1987

A.3. General indicators of quality of scientific production

- Papers in peer-reviewed journals: 215
- h-index (Scopus): 37
- Ph theses supervised. 33
- Six-year terms granted:

Part B. CV SUMMARY

I have developed my research activity in animal welfare, with a particular focus on farm animal welfare. Farm animal welfare has become increasingly important over the last years since consumers demand that animals are reared, transported and slaughtered in a humane way. As a result, the EU has approved several regulations setting minimum standards for farm animal welfare. There is also evidence showing that good welfare results in better product quality and performance. My research in farm animal welfare has addressed, among others, the two following issues:

1.Development and improvement of protocols to assess animal welfare. This work has been done in the context of a European project that has delivered assessment protocols for cattle, pigs, and chickens. We have tested the feasibility and validity of these protocols and their applicability to several production conditions. The aim of this research is to deliver a science-based protocol that is reliable, feasible and robust, and which will be used to identify problems and monitor progress.

2.Assessment of stunning methods from an animal welfare standpoint. Adequate stunning is a critical aspect of humane slaughter, and the objective of our work has been to test whether gas stunning is adequate in terms of welfare. We have shown that currently used gas mixtures cause distress in animals and should be replaced by other gases.

Part C. RELEVANT MERITS

C.1. Publications *(publications in peer-reviewed journals since 2016)*

1. Le Brech S, Amat M, Temple, D and Manteca. X (2022) Evaluation of Two Practical Tools to Assess Cognitive Impairment in Aged Dogs *Animals* 12, 3538. https://doi.org/10.3390/ani12243538
2. Fragoso S, Anjos C, Almeida A, Manteca X and de Sousa L (2022) Dog Bites in Portugal: Analysis of Incidents, and Consequences for both People and Dogs. *Journal of Veterinary Behavior* doi: https://doi.org/10.1016/j.jveb.2022.06.005
3. Guevara RD, Pastor JJ, Manteca X, Tedó G, Llonch P (2022) Systematic review of animal-based indicators to measure thermal, social, and immune-related stress in pigs. *PLoS ONE* 17(5): e0266524. https://doi.org/10.1371/journal.pone.0266524.
4. Ko H L, Temple D, Hales J, Manteca X and Llonch P (2022) Welfare and Performance of Post-Weaning Sows and Piglets Previously Housed in Farrowing Pens with Temporary Crating on a Spanish Commercial Farm: A Pilot Study. *Animals 12*, 724. https://doi.org/10.3390/ani12060724

5. Brijs J, Fahlman A, Fore M and Manteca X (2022) Editorial: Animal Welfare - Volume II: Using Bio-sensing Devices to Assess Farm Animal Welfare. *Frontiers in Physiology* 13:848955 doi: 10.3389/fphys.2022.848955
6. Ko HL, Temple D, Hales J, Manteca X and Llonch P (2022) Welfare and performance of sows and piglets in farrowing pens with temporary crating system on a Spanish commercial farm *Applied Animal Behaviour Science* 246 https://doi.org/10.1016/j.applanim.2021.10552724.
7. Mainau E, Llonch P, Temple D, Goby L and Manteca X (2022) Alteration of activity patterns in cows as a result of pain due to health conditions *Animals* https://doi.org/10.3390/ani12020176
8. Peres C, Escribano D, Mainau E, Cerón JJ, Navarro E and Manteca X (2021) Changes in salivary biomarkers of oxidative status in calves at weaning and grouping *BMC Veterinary Research* 17:373 https://doi.org/10.1186/s12917-021-03087-2
9. Monreal-Pawlowsky T, Vaicekauskaitė R, Palencia Membrive G, Delfour F and Manteca X (2021). Goal-oriented behavioural and environmental enrichment in aquarium species. *Journal of Zoo and Aquarium Research:* 9: 273–280.
10. Salas M, Fernández-Fontelo A, Martínez-Nevado E, Fernández-Morán J, López-Goya A and Manteca X (2021) Caretaker score reliability for personality assessment of bottlenose dolphin (*Tursiops truncatus*) *Animals* doi 10.3390/ani11072073
11. Manteca X, Beaver B, Uldahl M and Turner P V (2021) Recommendations for ensuring good welfare of horses used for industrial blood, serum, or urine production *Animals* doi: 10.3390/ani11051466
12. Yerpes M, Llonch P and Manteca X (2021) Effect of environmental conditions during transport on chick weight loss and mortality *Poultry Science* 100: 129-137.
13. Gómez Herrera Y, Stygar A, Bowmans IJMM, Bokkers E, Pedersen LJ, Niemi J, Pastell M, Manteca X and Llonch P (2021) A systematic review on validated Precision Livestock Farming technologies for pig production and its potential to assess animal welfare *Frontiers in Veterinary Science* doi: 10.3389/fvets.2021.660565
14. del Campo M, Soares de Lima JM, Brito G, Manteca X, Hernández P and Montosi F (2021) Effect of finishing diet and lairage time on steers welfare in Uruguay *Animals* doi: 10.3390/ani11051329
15. Blasco X, Manteca X, López-Béjar M, Carbajal A, Casellas J and Ortuño A (2021) Intestinal parasites and faecal cortisol metabolites in multi-owned cat environments: the impact of housing conditions *Animals* https://doi.org/10.3390/ ani11051300
16. Fahlman A, Aoki K, Bale G, Brijs J, Chon KH, Drummond CK, Føre M, Manteca X, McDonald BI, McKnight JC, Sakamoto KQ, Suzuki I, Rivero MJ, Ropert-Coudert Y and Wisniewska DM (2021) The New Era of Physio-Logging and Their Grand Challenges *Frontiers in Physiology*. doi: 10.3389/fphys.2021.669158
17. del Campo M, Manteca X, Soares de Lima J M, Brito G, Hernández P, Sañudo C and Montossi F (2021) Effect of different finishing strategies and steers temperament on animal welfare and instrumental meat tenderness *Animals* doi.org/10.3390/ani11030859
18. Navarro E, Mainau E, de Miguel R, Temple D, Salas M and Manteca X (2021) Oral Meloxicam administration in sows at farrowing and its effects on piglet immunity transfer and growth *Frontiers in Veterinary Science* https://doi.org/10.3389/fvets.2021.574250
19. Skovlund C, Kirchner M, Moos L, Jensen N, Manteca X, Talló-Parra O, Stelvig M and Forkman B (2021) A critical review of animal-based welfare indicators for polar bears (*Ursus maritimus*) in zoos - identification and evidence of validity *Animal welfare* 30: 1-18.
20. López-Arjona M, Mainau E, Navarro E, Contreras-Aguilar MD, Escribano D, Mateo SV, Manteca X, Cerón JJ and Martínez-Subiela S (2021) Oxytocin in bovine saliva: validation of two assays and changes in parturition and at weaning *BMC Veterinary Research* doi 10.1186/s12917-021-02838-5.
21. Temple D, Manteca X, Escribano D, Salas M, Mainau E, Zschiesche E, Petersen I, Dolz R and Thomas E (2020) Assessment of laying-bird welfare following acaricidal treatment of a commercial flock naturally infested with the poultry red mite (*Dermanyssus gallinae*) *PLoS ONE* doi:10.1371/journal.pone.0241608
22. Ko, HL, López-Vergé S, Chong Q, Gasa J, Manteca X and Llonch P (2020) Pre-weaning socialization and environmental enrichment affect short-term performance after regrouping in commercially reared pigs *Animal* 15(2):100115 doi: 10.1016/j.animal.2020.100115
23. Temple D, Jiménez M, Escribano D, Martin-Valls G, Díaz I and Manteca X (2020) Welfare benefits of intradermal vaccination of piglets *Animals* doi:10.3390/ani10101898
24. Tyack P, García-Párraga D, Marco-Cabedo V, Crespo-Picazo JL, Manteca X and Martí-Bonmatí L (2020) Effects of 3 Tesla magnetic resonance imaging exposure on the behaviour and orientation of homing pigeons *Columba livia domestica PLoS ONE* doi.org/10.1371/journal.pone.0241280
25. Pierozan CR, Dias CP, Temple D, Manteca X and da Silva CA (2020) Welfare indicators associated with feed conversion ratio and daily feed intake of growing-finishing pigs *Animal Production Science* doi: 10.1071/an19647
26. Dalmau A, Martínez-Macipe M, Manteca X and Mainau E (2020) Sex differences in group composition and habitat use of Iberian free-range pigs *Frontiers in Veterinary Science* doi: 10.3389/fvets.2020.600259
27. Navarro E, Mainau E and Manteca X (2020) Development of a facial expression scale using farrowing as a model of pain in sows *Animals* doi:10.3390/ani10112113
28. Amat M, Le Brech S, Camps T and Manteca X (2020) Separation.related problems in dogs: a review *Advances in Small Animal Care* 1: 1-8.
29. Temple D and Manteca X (2020) Animal welfare in extensive production systems is still an area of concern *Frontiers in Sustainable Food Systems* doi.org/10.3389/fsufs.2020.545902.

30. Llonch L, Castillejos L, Mainau E, Manteca X and Ferret A (2020) Effect of forest biomass as bedding material on compost bedded pack performance, microbial content and behavior of non-lactating dairy cows *Journal of Dairy Science*
31. Ko HL Chong Q, Escribano D, Camerlink I, Manteca X and Llonch P (2020) Pre-weaning socialization and environmental enrichment affect life-long response to regrouping in commercially reared pigs *Applied Animal Behaviour Science*
32. Martínez-Macipe M, Mainau E, Manteca X and Dalmau A (2020) Environmental and management factors affecting the time budgets of free-ranging Iberian pigs reared in Spain *Animals* doi:10.3390 /ani10050798
33. Fernández A, Mainau E, Manteca X, Siurana A and Castillejos L (2020) Impacts of compost bedded pack barns on the welfare and comfort of dairy cows *Animals* doi.org/10.3390/ani10030431
34. Yerpes M, Llonch P and Manteca X (2020) Factors associated with cumulative first-week mortality in broiler chickens *Animals* 10, 310; doi:10.3390/ani10020310
35. López-Arjona M, Mateo S V, Manteca X, Escribano D, Cerón J J and Martínez-Subiela S (2020) Oxytocin in saliva in pigs: an assay for its measurement and changes after farrowing *Domestic Animal Endocrinology* 70: 106384 https://doi.org/10.1016/j.domaniend.2019.106384
36. Camps-Morey T, Amat-Grau and Manteca-Vilanova X (2019) A review of medical conditions and behavioral problems in dogs and cats. A review. *Animals* 9(12): 1133.
37. Manteca X, De Bryne N, Beaver B and Turner P V (2019) Horse welfare during equine chorionic gonadotropin (eCG) production *Animals 9*, 1053; doi:10.3390/ani9121053
38. Rubio C P, Mainau E, Cerón J J, Contreras-Aguilar M D, Martínez-Subiela S, Navarro E, Tecles F, Manteca X and Escribano D (2019) Biomarkers of oxidative stress in saliva in pigs: analytical validation and changes in lactation *BMC Veterinary Research* 15, 144. https://doi.org/10.1186/s12917-019-1875-z
39. Escribano D, Ko H L, Chong Q, Llonch L, Manteca X and Llonch P (2019) Salivary biomarkers to monitor stress due to aggression after weaning in piglets *Research in Veterinary Science* 123: 178-183.
40. Villalba J and Manteca X (2019) A case for eustress in grazing animals. *Frontiers in Veterinary Science.* doi.org/10.3389/fvets.2019.00303
41. Fàbrega E, Marcet-Rius M, Vidal R, Escribano D, Cerón J J, Manteca X and Velarde V (2019) The Effects of Environmental Enrichment on the Physiology, Behaviour, Productivity and Meat Quality of Pigs Raised in a Hot Climate *Animals* 235 https://doi.org/10.3390/ani9050235
42. Madruga A, Abril R S, González L A, Manteca X, Panella-Riera N, Gil M and Ferret A (2019) Using 19% of alfalfa hay in beef feedlot finishing diets did not modify meat quality but increased feed intake and ADG *Journal of Animal Science* 97: 2076-2086.
43. Amat M and Manteca X (2019) Common Problem Feline Behaviours – Owner-directed Aggression. *Jounal of Feline Medicine and Surgery* 21: 245-255.
44. van Dijk L, Buller H J, Blokhuis H J, van Niekerk T, Voslarova E, Manteca X, Weeks C A and Main D C J (2019) HENNOVATION: learnings from promoting practice-led multi-actor innovation networks to address complex animal welfare challenges within the laying hen industry *Animals* 9; doi:10.3390/ani9010024.
45. Llonch P, Mainau E, Ipharraguerre I, Bargo F, Tedó G, Blanch M and Manteca X (2018) Chicken or the egg: the reciprocal association between feeding behavior and animal welfare and their impact on productivity in dairy cows *Frontiers in Veterinary Science* https://doi.org/10.3389/fvets.2018.00305
46. Salazar L C, Ko H-L, Yang Ch-Hsuan, Llonch L, Manteca X, Camerlink I and Llonch P (2018) Early socialisation as a strategy to increase piglets' social skills in intensive farming conditions. *Applied Animal Behaviour Science* 206. 25-35.
47. Canozzi M E A, Mederos A, Turner S, Manteca X, McManus C, Menegassi S R O and Barcellos J O J (2018) Dehorning and welfare indicators in beef cattle – A meta-analysis *Animal Production Science* doi.org/10.1071/AN17752
48. Salas M, Manteca X, Abáigar T, Delclaux M, Enseñat C, Martínez-Nevado E, Quevedo M A, Fernández-Bellón H (2018) Using farm animal welfare protocols as a basis to assess the welfare of wild animals in captivity-Case study: Dorcas gazelles (*Gazella dorcas*) *Animals* 111 - doi:10.3390/ani8070111
49. Talló-Parra O, Carbajal A, Monclus L, Manteca X and Lopez-Béjar M (2018) Hair cortisol and progesterone detection in dairy cattle: interrelation with physiological status and milk production *Domestic Animal Endocrinology* 64: 1-8.
50. Casal-Plana N, Manteca X, Dalmau A and Fàbrega E (2017) Influence of enrichment material and herbal compounds in the behaviour and performance of growing pigs *Applied Animal Behaviour Science* 195: 38-45.
51. Temple D, Escribano D, Jiménez M, Mainau E, Cerón J and Manteca X (2017) Effect of the needle free "Intra Dermal Application of Liquids" vaccination on the welfare of pregnant sows *Porcine Health Management* doi: 10.1186/s40813-017-0056-3
52. Casal N, Manteca X, Bassol A, Peña R and Fàbrega E (2017) Analysis of cortisol in hair samples as an indicator of stress in pigs *Journal of Veterinary Behavior: Clinical Applications and Research* 19: 1-6.
53. Monreal-Pawlowsky T, Marco-Cabedo V, Palencia Membrive G, Sanjosé J, Fuentes O, Jiménez E and Manteca X (2017) Environmental enrichment facilitates release and survival of an injured loggerhead sea turtle (*Caretta caretta*) after ten years in captivity *Journal of Zoo and Aquarium Research* 5:182-186.
54. Talló-Parra O, Albanell E, Carbajal A, Monclús L, Manteca X and López-Béjar M (2017) Prediction of cortisol and progesterone concentration in cow hair using near-infrared reflectance spectroscopy (NIRS) *Applied Spectroscopy* 7: 1954-1961.

55. Madruga A, Mainau E, González L A, Rodríguez-Prado M, Ruíz de la Torre J L, Manteca X and Ferret A (2017) Effect of forage source included in total mixed ration on intake, sorting and feeding behavior of growing heifers fed high-concentrate diets Journal of Animal Science 95:3322-3330.
56. Canozzi MEA, Mederos A, Manteca X, Turner S, McManus C, Zago D and Barcellos JOJ (2017) A meta-analysis of cortisol concentration, vocalization, and average daily gain associated with castration in beef cattle *Research in Veterinary Science* 114: 430-443.
57. Madruga A, Mainau E, Gonzálea L A, Rodríguez.Prado M, Ruiz de la Torre J L, Manteca X and Ferret A (2017) Technical note: Recording rules for behavioral studies in growing heifers fed high-concentrate diets Journal of Animal Science 95: 2339-2344.
58. Carreras R, Arroyo L, Mainau E, Valent D, Bassols A, Dalmau A, Faucitano L, Manteca X and Velarde A (2017) Can the way pigs are handled alter behavioural and physiological measures of affective state? *Behavioural Processes*142: 91-98.
59. Talló-Parra O, López-Béjar M, Carbajal A, Monclús L, Manteca X and Devant M (2017) Acute ACTH-induced elevations of circulating cortisol do not affect hair cortisol concentrations in calves *General and Comparative Endocrinology* 240: 138-142.
60. Casal N, Manteca X, Escribano D, Cerón J J and Fàbrega E (2016) Effect of environmental enrichment and herbal compound supplementation on physiological stress indicators (chromogranin A, cortisol, and TNF—α) in growing pigs. *Animal* DOI: https://doi.org/10.1017/S1751731116002561
61. Yerga J, Calzada J, Manteca X, Herrera I, Vargas A and Rivas A (2016) Lactation and suckling behavior in the Iberian lynx. *Zoo Biology*. DOI: https://10.1002/zoo.21286
62. Martínez-Miró S, Tecles F, Ramon M, Escribano D, Hernández F, Madrid F, Orengo J, Martínez-Subiela S, Manteca X and Ceron J J (2016) Causes, consequences and biomarkers of stress in swine: an update. *BMC Veterinary Research* DOI: https://10.1186/s12917-016-0791-8
63. Amat M, Camps T, García-Morato C and Manteca X (2016) Handling aggressive dogs. *Clinicians' Brief* July 2016: 18-22.
64. Carreras R, Mainau E, Arroyo L, Moles X, Gónzález J, Bassols A, Dalmau A, Faucitano L, Manteca X and Velarde A (2016) Housing conditions do not alter cognitive bias but affect serum cortisol, qualitative behaviour assessment and wounds on the carcass in pigs *Applied Animal Behaviour Science* 185: 39-44.
65. Salas M, Temple D, Abáigar T, Cuadrado M, Delclaux M, Enseñat C, Almagro V, Martínez-Nevado E, Quevedo M A, Carbajal A, Talló-Parra O, Sabés-Alsina M, Amat M, López-Béjar M, Fernández-Bellón H and Manteca X (2016) Aggressive behavior and hair cortisol levels in captive dorcas gazelles (*Gazella dorcas*) as animal-based welfare indicators *Zoo Biology* 35: 467-473.
66. Pinillos R G, Appleby M, Manteca X, Scott-Park F, Smith C and Velarde A (2016) One Welfare – a platform for improving human and animal welfare *Veterinary Record* 179: 412-413.
67. Manteca X, Amat M, Salas M and Temple D (2016) Review of animal-based indicators to assess welfare in zoo animals. *CAB Reviews*. doi: 10.1079/PAVSNNR201611010
68. Mainau E, Temple D and Manteca X (2016) Experimental study on the effect of oral meloxicam administration in sows on pre-weaning mortality and growth and immunoglobulin G transfer to piglets. *Preventive Veterinary Medicine* 126: 48-53.
69. Carreras R, Arroyo L, Mainau E, Peña R, Bassols A, Dalmau A, Faucitano L, Manteca X and Velarde A (2016) Effect of gender and halothane genotype on cognitive bias and its relationship with fear in pigs *Applied Animal Behaviour Science* 177: 12-18.
70. Temple D, Mainau E, Cozzi A, Amat M, Canozzi M E, Pageat P and Manteca X (2016) Preliminary findings on the effect of the pig appeasing pheromone in a slow releasing block on the welfare of pigs at weaning. *Porcine Health Management* 2: 13.
71. Le Brech S, Amat M, Camps T, Temple D and Manteca X (2016) Canine aggression toward family members in Spain: clinical presentation and related factors. *Journal of Veterinary Behavior: Clinical Applications and Research.*12: 36-41.
72. Rodríguez P, Dalmau A, Manteca X, Litvan H, Jensen E W and Velarde A (2016) Assessment of aversion and unconciousness during exposure to CO_2 at high concentration in lambs *Animal Welfare* 25: 73-82.
73. Amat M, Camps T and Manteca X (2016) Stress in owned cats: behavioural changes and welfare implications *Journal of Feline Medicine and Surgery* 18: 577-586.

C.2. Research projects (main research projects during the last 5 years)

1. Co-designed Welfare Monitoring Platform for Pigs and Dairy Cattle (ClearFarm). Funding body: EU. Role: IP. November 2019- October 2023. Overall budget: 5.899.105,63 euros / UAB budget: 1.316.860 euros.
2. Bienestar animal y viabilidad económica en explotaciones intensivas de porcino y bovino (Animal welfare and economic viability of intensive pig and dairy cattle farms). Funding body: Spanish Government. Role: IP. January 2016 – September 2019. Code: AGL2015-68373-C2-1-R. Budget: 181.500 Euros.
3. Practice-led innovation supported by science and market-driven actors in the laying hen and other livestock sectors (HENNOVATION). Role: Participant and UAB coordinator. Funding body: EU. March 2015 – September 2017. UAB budget: 214.335 Euros.