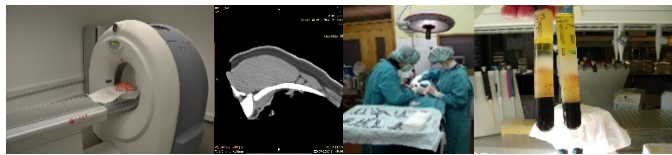




## **Annual Report of Activities 2020**



## INDEX

- I Introduction
- II Organization, human resources, facilities and funding
- III Scientific activity
  - 1 Funded projects and thematic networks
  - 2 Scientific production
    - 2.1 Books
    - 2.2 Book chapters
    - 2.3 International journals with peer-review
      - 2.3.1 Full papers
      - 2.3.2 Reviews
      - 2.3.3 Short communications
      - 2.3.4 Case reports
      - 2.3.5 Letters
    - 2.4 National journals
  - 3 Presentations in Scientific events
  - 4 Formation
    - 4.1 Doctoral thesis
    - 4.2 Master dissertations
    - 4.3 Graduation Reports
  - 5 Organization of events

## **Introduction**

The Veterinary and Animal Science research Centre (CECAV), hosted in the University of Trás-os-Montes and Alto Douro (UTAD), is a National Research Unit funding by the Portuguese national funding agency for science, research and technology (FCT). After an evaluation process promoted by FCT in 2017-2018, CECAV was classified as Very Good. Thus, it was considered by FCT for the Pluriannual Funding Program, both basal and programmatic, for the period 2020-2023.

The research activity of CECAV is focused on two research topics: i) Integrated Meat Quality and ii) Veterinary Public Health. The main objectives in Integrated Meat Quality area (1) to develop research focused on the use of in vivo non-invasive techniques as tools to evaluate body composition and to estimate carcass composition and quality of farm animal species; and (2) to assess factors that may affect sensory and chemical characteristics of meat and meat products and evaluate strategies (e.g. packing, natural additives) to control spoilage and pathogenic microflora. The research in Veterinary Public Health is focused on two interrelated topics: (1) diagnostic and prognostic of factors related to biologic issues and the use of biomaterials for tissues regeneration, using animal models and contributing to animal and human health and welfare, and (2) the study of prevalence and epidemiological integrative studies on zoonosis affecting animals and foodborne pathogens from food of animal origin contributing for their monitoring and evaluation of strategies for its mitigation.

This report presents the main activities carried out in 2020.

## **Organization, human resources, facilities and funding**

*Organization.* The organization of CECAV is included in the regulation published in the Portuguese official journal (Diário da República, 2nd Serie, nº36, 20th February 2012).

The governing bodies of CECAV are:

- The Scientific Council (SC);
- The Director,
- The Executive Board

The Scientific Council is composed of all integrated members V and meets regularly (3 or 4 times a year). In addition to the main competencies contained in its regulation, the Scientific Council promotes internal cooperation, fosters dialogue and the exchange of ideas.

The Director is elected by the Scientific Council every three years and among his competences is the choice of the Executive Board.

The Directive Board is composed by the Director, and three Vice-Directors. Besides ensuring the administrative and financial management of CECAV, the main competences of the Executive Council are to prepare the documents to submit to the Scientific Council for approval and to propose

to the Scientific Council the allocation of financial resources to the different research activities and topics of CECAV.

Following the regulations of FCT, CECAV has an External Advisory Committee, composed by 3 experts in the scientific areas of CECAV: José Lorenzo Rodrigues (Technological Meat Centre), Laura Peña (Complutense University of Madrid) and Ana Afonso (European Food Safety Authority) who are expected to visit CECAV two or three times during 2020-2023. Due to the pandemic situation, the first visits will only occur on 2021 or 2022. During the visit, they will meet with CECAV researchers to discuss and talk about ongoing activities as well as collaborate in planning future activities. Annually, CECAV will send its Annual Report to the three members to issue an opinion that will be included in the report.

*Human resources.* In 2020, CECAV includes 43 integrated members from UTAD and 5 integrated members from institutions outside UTAD. CECAV also has 6 doctors as collaborators and 15 PhD students, 9 of them are scholarship holders.

The criterion required to be an integrated member of CECAV is based on its scientific productivity in the former three years. Criteria for distribution of the FCT base funding are also centred on the scientific productivity of the researchers, which is scored/graded according to the number, type (book and book chapter, full paper, review article, short note) and quality (quartile in category) of the manuscripts published on international peer reviewed journals (SCOPUS or ISI).

*Facilities* The facilities of CECAV are located at UTAD mainly at the School of Veterinary and Agrarian Sciences and includes laboratories and animal experimental facilities. Main labourites that support the research activity of CECAV are: laboratory of technology, quality and food safety, laboratory of histopathology and veterinary pathological anatomy, laboratory of parasitology, laboratory of medical microbiology, laboratory of animal nutrition, laboratory of reproduction. The animal experimental facilities include an experimental unit for the study of carcasses and meat, the experimental facilities of animal nutrition, the hunting studies center and several experimental units of animal production.

The veterinary hospital of UTAD is also an important structure for the scientific activity of CECAV researchers.

In 2020, one of the achievements was the purchase of some urgent equipment, aiming to improve the research carried out at CECAV.

*Funding.* The CECAV was granted 533.000 euros over four years as basal financing and 355 000 Euros as programmatic financing. Some of the research projects running at CECAV also had external financing from FCT, CCDR-N and other external funding institutions. The detailed information about these projects is presented in section “Funded projects and thematic networks”.

## Scientific activity

The activities of CECAV are guided by the following objectives:

(1) to promote research with impact in the animal and veterinary sciences field, through the participation in research projects and thematic networks and by the cooperation with other institutions;

(2) to disseminate knowledge through the development and/or the participation of scientific events and by the publication of articles in top ranking scientific journal;

(3) to develop post-graduation formation by supporting the 3rd cycle of Animal Science and the 3rd cycle of Veterinary Science.

The CECAV web page <https://cecav.utad.pt/> remains an important means of disseminating the activities of its researchers.

## Funded projects and networks

In 2020, CECAV researchers were involved as members of the team of 11 research projects and 4 European research networks. Almost all of projects were in collaboration with other universities or research institutions, mainly in the area of animal production, animal health and meat quality and safety.

A list of the ongoing projects that have been approved for external funding is presented below. These projects are listed by alphabetic order.

AgriFoods XXI – Development and Consolidation of research in the AgriFood sector in Northern Portugal.

Funding source: FEDER, through the Operational Program NORTE 2020.

Total funding: 2 353 869,65€

Funding for CECAV/UTAD: 132 000 €

Leading institution: CQ-VR, UTAD

Period: 2020-2023

<https://noticias.utad.pt/blog/2021/02/09/projeto-alimentares/>

Bis+Olive - Use of olive pomace in the feeding of Bísara pigs. Evaluation of the effect on growth and meat quality. Co-promotion project.

Funding source: FEDER, European Regional Development Fund, through the Operational Program NORTE 2020

Total funding: 592 302,40 €

Funding for CECAV/UTAD: 132 852,96€

Leading institution: BISARO – Salsicharia tradicional

Period: 2021-2023.

<https://morecolab.pt/projetos-bisolive/>

C3C - caça–capacitação, competitividade e comunicação.

Funding source: Fundo Florestal Permanente

Leading institution: Clube Português de Monteiros

Period: 2020-2022.

<https://clubemonteiros.com/index.php/noticias-menu/290-cpm-dinamiza-projecto-inovador-e-ambicioso#allow>

COST Action FA1408 - EURO-FBP. A European Network for Food Borne Parasites.

Funding source: H2020 COST-Action

Period: 2016-2020.

<https://www.cost.eu/actions/FA1408/>

COST Action CA 18105 - Risk-based meat inspection and integrated meat safety assurance (RIBMINS).

Funding source: H2020 COST-Action

Period: 2019-2022.

[https://www.cost.eu/actions/CA18105/#tabs\[Name:overview](https://www.cost.eu/actions/CA18105/#tabs[Name:overview)

Dairy-4-Future - Propagating innovations for more resilient dairy farming in the Atlantic area

Funding source: INTERREG Atlantic Area.

Total funding: 2 924,364 €

Funding for CECAV/UTAD: 281 975 €

Leading institution: Institut de l'Elevage (FR)

Period: 2018-2021.

<https://dairy4future.eu/pt/inicio/>

EuroDairy - A Europe-wide Thematic Network on improving resource use efficiency in dairy farming.

Funding source: European Commission – H2020.

Total funding: 1.997.754 €

Funding for CECAV/UTAD: 36 850 €

Leading institution: DLO (Netherland)

Period: 2016-20171.

<https://eurodairy.eu/locations/>

Icas-Bísaro - Immuno-castration protocols for bísaro pigs

Funding source: PDR2020-FEADER.

Total funding: 197 229,62€€

Funding for CECAV/UTAD: 40 000 €

Leading institution: CECAV/UTAD.

Period: 2017-2021.

[https://www.utad.pt/gap/icas\\_bisaro-protocolos-de-imunocastracao-para-porcospisaros/](https://www.utad.pt/gap/icas_bisaro-protocolos-de-imunocastracao-para-porcospisaros/)

Manual do Pastor 4.0.

Funding source: PDR2020

Total funding: 74.724,60€

Funding for CECAV/UTAD: 19 493 €

Leading institution: Comunidade Intermunicipal do Tâmega e Sousa

Period 2019-2021.

<https://inovacao.rederural.gov.pt/projetos/projetos-rrn/37-projetos-rrn/943-manual-do-pastor-4-0>

MobFood - Mobilizing scientific and technological knowledge in response to the challenges of the agri-food market. Projeto em copromoção.

Funding source: POCI and POR Lisboa, through ANI.

Total funding: 7 387 591,67€

Funding for CECAV/UTAD: 44 825 €

Leading institution: PRIMOR CHARCUTARIA – PRIMA, S.A.

Period: 2017-2021.

<https://mobfood.pt/en/project/>

PhageSTEC – Development of a formulation of encapsulated bacteriophages to reduce enterotoxigenic E. coli in ruminants.

Funding source: FCT

Total funding: 233 992,70 €

Funding for CECAV/UTAD: 18 750 €

Leading institution: UMinho

Period: 2018-2021

<https://www.ceb.uminho.pt/biofilm/Projects/Details/6093>

Preserve the quality of Arouquesa meat.

Funding source: PDR2020

Total funding: 505 636,50€€

Funding for CECAV/UTAD: 331 599,57€

Leading institution: CITAB/UTAD

Period: 2017-2021.

<https://ec.europa.eu/eip/agriculture/en/find-connect/projects/preservar-qualidade-na-carne-arouquesa>

Save Meat Products - Segurança e Qualidade dos Produtos Cárneos Transformados. Grupo operacional.

Funding source: PDR2020 - FEDER.

Total funding: 468 254.63 €

Funding for CECAV/UTAD: 77 428.48 €

Leading institution: CIISA (Liabo)

Period: 2017-2021.

<https://www.safemeatprod.com/>

SUSPHAGE - Development of a phage-based product to control E. coli associated post-weaning diarrhea in piglets, Projeto em copromoção.

Funding source: COMPETE 2020, Portugal 2020, FEDER - Fundo Europeu de Desenvolvimento Regional.

Total funding: 695 097 €

Funding for CECAV/UTAD: 154 466,15€

Leading institution: CEB (Centre of Biological Engineering)

Period: 2018-2022.

<https://www.ceb.uminho.pt/Projects/Details/6098>

Wasting Prion Risk - Chronic Wasting Disease Risk Assessment in Portugal.

Funding source: FCT - Fundação para a Ciência e a Tecnologia (Compete 2020, PT2020) e FEDER - Fundo Europeu de Desenvolvimento Regional

Total funding: 239.898,90 €

Funding for CECAV/UTAD: 201 772 €

Leading institution: CECAV/UTAD

Period: 2018-2021.

<http://www.inia.pt/menu-lateral-geral/projetos-de-investigacao/wastingprionrisk>

## Scientific production

During 2020, 3 international books and also 9 chapters in international books were published. Most of these books / book chapters have been published by animal pathology researchers (2 books and 6 chapters).

In 2020, CECAV researchers published 111 papers in international peer review journals (105 referenced in Scopus and/or ISI), including full papers (88), reviews (8), short communications (7), case reports (5) and letters (2). Most of them (81) were published in journals from the Q1 or Q2.

Among the articles published in 2020, 90% were produced within the research areas of CECAV (meat safety and quality and animal health) and the rest in related areas.

In the lists below, the CECAV members are underlined.

## Books

1. Alves, J.I., Esteves, A., Silva, J.A., Saraiva, C. 2020. Segurança e Qualidade de Queijos - Microbiota patogénica e deteriorativa associada. Editora: Agrobok, 66 pages, ISBN: 9789899017153.
2. Díez, J., Moura, D., Pires, I., Saraiva, C. 2020. Enzootic bovine leukosis. Academic Publications, Delhi, India, 25 pages. E-ISBN: 978-93-90002-10-8.
3. Garcês, A., Pires, I. 2020. Necropsy Techniques for Examining Wildlife Samples, Bentham Book, 186 pages. ISBN: 978-981-14-6833-9 (Online).
4. Pires, I., Magalhães, A.C., Díez, J., Saraiva, C., Silva, F. 2020. Enzootic bovine hematuria. Academic Publications, Delhi, India, 24 pages. E-ISBN: 978-93-90002-06-1.

## Book chapters

- 1 Fraqueza, M.J., Patarata, L. 2020. Fermented Meat Products: From the Technology to the Quality Control. In *Animal-Based Fermented Food Products. Fermented Foods Book*, Section 4, Chapter 13. A. Sankaranarayanan, N. Amaresan, D. Dhanasekaran (Eds.), CRC Press. pp. 197-238. January 2020. doi: [10.1201/9780429274787](https://doi.org/10.1201/9780429274787)
- 2 Gaivão, I., Ferreira, J., Sierra, M. 2020. Thew/w+ somatic mutation and recombination test (SMART) of *Drosophila melanogaster* for detecting antigenotoxicity activity. In *Genotoxicity and Mutagenicity*, Chapter 7. Soloneski, S. and Larramendy, M.L. (Eds.), Intech open. pp. 218-225. February 2020. doi: [10.5772/intechopen.91630](https://doi.org/10.5772/intechopen.91630)
- 3 Gama, A., Seixas, F., Pires, M.A., Schmitt, F., Payan-Carreira, R. 2020. Disruption of E-Cadherin Pattern in Uterine and Mammary Tumours. In *Cadherins: Types, Structure and Functions*, Chapter 3. Jonathan McWilliam (Ed.). USA: Nova Publishers. pp. 129-161. doi: [10.174/28312](https://doi.org/10.174/28312)
- 4 Garcês, A., Pires, I. 2020. A review in the post-mortem examination of seabirds and the diseases that affect them. In *Recent Research Trends in Veterinary Sciences and Animal Husbandry*, Volume 7, Ganguly. S. (Ed.), AkiNik Publications. pp1-24. 2020. doi: [10.22271/ed.book.827](https://doi.org/10.22271/ed.book.827)
- 5 Garcês, A., Prada, J., Pires, I. 2020. Wildlife death related to man: a small guide of identification of causes and lesions in the post-mortem exam. In *Recent Research Trends in Veterinary Sciences and Animal Husbandry*, Volume 7, Ganguly. S. (Ed.), AkiNik Publications. pp. 25-45. doi: [10.22271/ed.book.827](https://doi.org/10.22271/ed.book.827)
- 6 Garcês A., Prada, J., Pires, I. 2020. The impact of urbanization and human development in wildlife mortality. In *Recent Research Trends in Veterinary Sciences and Animal Husbandry*, Volume 7. Ganguly. S. (Ed). AkiNik Publications, pp 47-72. doi: [10.22271/ed.book.827](https://doi.org/10.22271/ed.book.827)
- 7 Garcês A., Pires, I. 2020. A contribute to the understanding of the mechanisms of cancer: the strangest cases of resistance to the development of tumours in amphibians, sharks, elephants, whales and naked mole rats. In *Research Trends in Life Sciences*, Volume 4. Chandel B.S. (Ed), AkiNik Publications, pp. 1-27. doi: [10.22271/ed.book.821](https://doi.org/10.22271/ed.book.821)
- 8 Quaresma, M., Payan-Carreira, R. 2020. Calf-Sex influence in bovine milk production. In *Animal Reproduction and Veterinary Medicine*, Chapter 1, Aral, F., Payan-Carreira, R., Quaresma, M. (Eds.), IntechOpen, pp. 298-321. October 2020. doi: [10.5772/intechopen.93966](https://doi.org/10.5772/intechopen.93966)
- 9 Vilhena, H., Figueira, A.C., Schmitt, F., Canadas, A., Chaves, R., Gama, A., Dias-Pereira, P. 2020. Canine and feline spontaneous mammary tumours as models of human breast cancer. In *Pets as Sentinels, Forecasters and Promoters of Human Health*. Sousa A.C.A. and Pastorinho M. (eds), Springer International Publishing AG, Switzerland, January 2020, pp.173-207. doi: [10.1007/978-3-030-30734-9\\_9](https://doi.org/10.1007/978-3-030-30734-9_9)



## International journals with peer-review

### Full papers

1. Afonso, J., Guedes, C., Santos, V., Morais, R., Silva, J., Teixeira, A., Silva, S. 2020. Utilization of Bioelectrical Impedance to Predict Intramuscular Fat and Physicochemical Traits of the Beef Longissimus Thoracis et Lumborum Muscle. *Foods*, Volume 9, N°6, Article N 836, June 2020, **Q1**. doi: [10.3390/foods9060836](https://doi.org/10.3390/foods9060836)
2. Afonso, J., Guedes, C.M., Teixeira, A., Santos, V., Azevedo, J.M.T., Silva, S.R. 2020. Using real-time ultrasound for in vivo assessment of carcass and internal adipose depots of dairy sheep. *Journal of Agricultural Science*, Volume 157, N°7-8, pp. 650-658, March 2020, **Q2**. doi: [10.1017/S0021859620000106](https://doi.org/10.1017/S0021859620000106)
3. Alvites, R.D., Branquinho, M.V., Caseiro, A.R., Amorim, I., Santos Pedrosa, S., Rêma, A., Faria, F., Porto, B., Oliveira, C., Teixeira, P., Magalhães, R., Geuna, S., Varejão, A.S.P., Maurício, A.C. 2020. Rat Olfactory Mucosa Mesenchymal Stem/Stromal Cells (OM-MSCs): A Characterization Study. *International Journal of Cell Biology*, Volume 2020, Article n° 2938258, 21 pages, January 2020, **Q1**. doi: [10.1155/2020/2938258](https://doi.org/10.1155/2020/2938258)
4. Araújo, J.P., Pires, P., Cerqueira, J.L., Barros, M., Moreno, T. 2020. Intramuscular fatty acid composition of the longissimus muscle of unweaned calves of the Minhota breed at different slaughter ages. *Iranian Journal of Applied Animal Science*, Volume 20, N°1, pp. 17-24, March 2020. [http://ijas.iaurasht.ac.ir/article\\_671561.html](http://ijas.iaurasht.ac.ir/article_671561.html)
5. Barçante, T.A., Barçante, J.M.P., Cardoso, L., Remedio, R.N., Lima, W.S. 2020. The Chronology of *Angiostrongylus vasorum* (Baillet, 1866), Kamensky, 1905: Infection in *Biomphalaria glabrata* (Say, 1818). *Journal of Parasitology Research*. 4627158, pp. 1-10, March 2020, **Q3**. doi: [10.1155/2020/4627158](https://doi.org/10.1155/2020/4627158) .
6. Barradas, P.F., Lima, C., Cardoso, L., Amorim, I., Gärtner, F., Mesquita, J.R. 2020. Molecular Evidence of *Hemolivia mauritanica*, *Ehrlichia* spp. and the Endosymbiont *Candidatus Midichloria mitochondrii* in *Hyalomma aegyptium* Infesting *Testudo graeca* Tortoises from Doha, Qatar. *Animals (Basel)*, Volume 11, N°1, E30, December 2020, **Q1**. doi: [10.3390/ani11010030](https://doi.org/10.3390/ani11010030)
7. Barradas, P.F., Mesquita, J.R., Lima, C., Cardoso, L., Alho, A.M., Ferreira, P., Amorim, I., Sousa, R., Gärtner, F., 2020. Pathogenic *Rickettsia* in ticks of spur-thighed tortoise (*Testudo graeca*) sold in a Qatar live animal market. *Transboundary and Emerging Diseases*, Volume 67, N°1, pp. 461-465, January 2020, **Q1**. doi: [10.1111/tbed.13375](https://doi.org/10.1111/tbed.13375)
8. Barros, J., Melo, L.D.R., Silva, R.A., Ferraz, M.P., Azeredo, J., Pinheiro, V., Colaço, B., Fernandes, M.H., Gomes, P.S., Monteiro, F.J. 2020. Encapsulated bacteriophages in alginate-nanohydroxyapatite hydrogel as a novel 2 delivery system to prevent orthopedic implant-associated infections. *Nanomedicina*; Volume 24, 101145, pp. 1-12, February 2020, **Q1**. doi: [10.1016/j.nano.2019.102145](https://doi.org/10.1016/j.nano.2019.102145)
9. Borges, A.F., Cózar, A., Patarata, L., Gama, L.T., Alfaia, C.M., Fernandes, M.J., Fernandes, M.H., Pérez, H.V., Fraqueza, M.J., 2020. Effect of high hydrostatic pressure challenge on biogenic amines, microbiota, and sensory profile in traditional poultry- and pork-based semidried fermented sausage. *Journal of Food Science*, Volume 85, N°4, pp. 1256-1264, April 2020, **Q2**. doi: [10.1111/1750-3841.15101](https://doi.org/10.1111/1750-3841.15101)
10. Botelho, N., Vieira-Pinto, M., Batchelli, P., Pallisera, J., Dalmau, A. 2020. Testing an animal welfare assessment protocol for growing-rabbits reared for meat production based on the welfare quality approach. *Animals*, Volume 10, N° 8, Article N°1415, pp.1-25, August 2020, **Q1**. doi: [10.3390/ani10081415](https://doi.org/10.3390/ani10081415)
11. Carvalho, A., Gaivão, I., Lima-Brito, J., 2020. Seed osmopriming with PEG solutions in seeds of three infraspecific taxa of *Pinus nigra*: Impacts on germination, mitosis and nuclear DNA. *Forest Ecology and Management*, Volume 456, Article n°11773915, January 2020, **Q1**. doi: [10.1016/j.foreco.2019.117739](https://doi.org/10.1016/j.foreco.2019.117739)
12. Castro, C., Carvalho, A., Gaivão, I., Lima-Brito, J. 2020. Evaluation of copper-induced DNA damage in *Vitis vinifera* L. using Comet-FISH. *Environmental Science and Pollution Research*, Volume 28, pp. 6600-6610, October 2020, **Q2**. doi:[10.1007/s11356-020-10995-7](https://doi.org/10.1007/s11356-020-10995-7)

13. Catarino, J., Carvalho, P., Santos, S., Martins, Â., Requicha, J. 2020. Treatment of canine osteoarthritis with allogeneic platelet-rich plasma: review of five cases. *Open Veterinary Journal*, Volume 10, Nº 2, pp. 226-231, August 2020, **Q2**. doi: [10.4314/ovj.v10i2.12](https://doi.org/10.4314/ovj.v10i2.12)
14. Coelho, C., Vieira-Pinto, M., Vilares, A., Gargaté, M.J., Rodrigues, M., Cardoso, L., Lopes, A.P. 2020. PCR detection of toxoplasma gondii in european wild rabbit (*Oryctolagus cuniculus*) from Portugal. *Microorganisms*, Open Access, Volume 8, Nº2, Article Nº1926, pp. 1-7, December 2020, **Q2**. doi: [10.3390/microorganisms8121926](https://doi.org/10.3390/microorganisms8121926)
15. Costa, D., Ferreira, R., Prada, J., Queiroga, F., Rodrigues, P., Silva, F., Pires, I. 2020. A Role for Angiogenesis in Canine Cutaneous Histiocytoma Regression: Insights into an Old Clinical Enigma. *In Vivo*, Volume 34, Nº 6, pp. 3279-3284, November 2020, **Q2**. doi: [10.21873/invivo.12165](https://doi.org/10.21873/invivo.12165)
16. Cruz, R., Santos, C., Esteves, F., Ferreira, A.S., Vasconcelos-Nóbrega, C., Mega, C., Albuquerque, C., Teixeira-de-Lemos, E., Coelho, A.C., Vala, H., Mesquita, J.R. 2020. Occupationally Acquired Q Fever in Shepherds and Sheep Milk Cheesemakers. *EcoHealth*, Volume 17, Nº 2, pp. 255-257, June 2020, **Q3**. doi: [10.1007/s10393-020-01483-y](https://doi.org/10.1007/s10393-020-01483-y)
17. Dantas-Torres, F., Nogueira, F.D.S., Menz, I., Tabanez, P., Silva, S.M., Ribeiro, V.M., Miró, G., Cardoso, L., Petersen, C., Baneth, G., Oliva, G., Solano-Gallego, L., Ferrer, L., Pennisi, M.G., Bourdeau, P., Maia, C., Otranto, D., Gradoni, L., Courtenay, O., Costa, C.H.N., 2020. Vaccination against canine leishmaniasis in Brazil. *International Journal for Parasitology*, Volume 50, Nº3, pp. 171-176, march 2020, **Q1**. doi: [10.1016/j.ijpara.2020.01.001](https://doi.org/10.1016/j.ijpara.2020.01.001)
18. Degrandi, T.M., Furo, I.O., Oliveira, E.H.C., Costa, A.L., Ferguson-Smith, M.A., O'Brien, P.C., Pereira, J.C., Garnero, A.D.V., Gunski, R.J., Artoni, R.F. 2020. Comparative chromosome painting in hummingbirds (Trochilidae). *Genetics and Molecular Biology*, Open Access, Volume 43, Nº4, Article Nº20200162, pp. 1-7, November 2020, **Q3**. doi: [10.1590/1678-4685-gmb-2020-0162](https://doi.org/10.1590/1678-4685-gmb-2020-0162)
19. Dias, L.G., Silva, S.R., Teixeira, A. 2020. Simultaneously prediction of sheep and goat carcass composition and body fat depots using in vivo ultrasound measurements and live weight. *Research in Veterinary Science*, Volume 133, pp. 180-187, December 2020, **Q1**. doi: [10.1016/j.rvsc.2020.09.024](https://doi.org/10.1016/j.rvsc.2020.09.024)
20. Falcão, F., Faísca, P., Viegas, I., Oliveira, J.T., Requicha, J.F., 2020. Feline oral cavity lesions diagnosed by histopathology: a 6-year retrospective study in Portugal. *Journal of Feline Medicine and Surgery*, Volume 22, Nº10, pp. 977-985, February 2020, **Q2**. doi: [10.1177/1098612X19900033](https://doi.org/10.1177/1098612X19900033)
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## Reviews

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## Case Reports

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- Garcês, A., Sousa, L., Sargo R., Silva, F., Pires I. 2020. Description of the Case of a Swim Bladder Torsion in Goldfish (*Carassius auratus*, Linnaeus 1758). *Research Journal for Veterinary Practitioners*, Volume 8, Nº4, pp. 45-47, October 2020. doi: [10.17582/journal.rjvp/2020/8.4.45.47](https://doi.org/10.17582/journal.rjvp/2020/8.4.45.47)
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## Letters

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## National Journals

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2. Cerqueira, J.L. 2020. Estado emocional dos bovinos. Revista AGROS, Trimestral, N°42, 34-37.
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5. Cerqueira, J.L. Araújo, J.P., 2020. Bem-estar na produção animal em modo biológico. Revista Agrotec, 2º trimestre, N°35, pp. 22-24.
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7. Coelho, A.O., Fontes, M.C., Coelho, A.C. 2020. Acidentes de trabalho na indústria de transformação de carnes. Tecnoalimentar, N° 24, pp. 18-21.
8. Orge, L., Vieira-Pinto, M. Gama, A., Esteves, A., Matos, A.C., Alves, A., Lima, C., Machado, C., Bastos, E., Seixas, F., Silva, F., Pires, I., Silva, J., Pereira, J., Figueira, L., Pinto, M.L., Anjo, N., Mendonça, P., Carvalho, P., Tavares, P., Sargo, R., Pires, M.A. 2020. Doença emaciante crónica dos cervídeos. Revista Caça e Cães de Caça, N°274, pp.66-68.
9. Silveira, L., Antunes, L., Silva, S., Ferreira, D., Soares, S., Pinto, M., Lebre, P., Dionisio, I., Serralheiro, P. 2020. Repair of the recurrent laryngeal nerve: Experimental study. Revista Portuguesa de Cirurgia, Volume 46, pp. 19-31.

## Presentations in Scientific events

Usually, CECAV members regularly participate in international and national scientific events within the scope of this R&D Unit's scientific area, presenting a high number of papers, either as oral communications either as poster. In 2020, due to the covid pandemic, participation in events decreased, especially participation in international events. However more than 100 communications (oral or poster) were presented at scientific events, with about 50% at international events. The participation of young researchers of CECAV (doctoral students) in international scientific events, was an important issue and, in 2020, some doctoral students had taken this opportunity. The participation in scientific events, especially international events, was also an important means for establishing partnerships.

The scientific events are organized by date, from the earliest to the latest.

*I Jornadas de Biotecnologia para as Ciências da Saúde*, January 17, UTAD, Vila Real, Portugal.

- 1 Pinho, P., Gaivão, I., Arantes-Rodrigues, R., Pinto-Leite, R. 2020. Criopreservação: qual o impacto na qualidade espermática?
- 2 Pereira, C., Martins, J., Gaivão, I., Pinto-Leite, R. 2020. Estágio Curricular em Biotecnologia para as Ciências da Saúde; uma experiência num laboratório de diagnóstico.
- 3 Terras, T., Gaivão, I., Oliveira, P.A. 2020. Avaliação de compostos naturais e farmacológicos em modelos animais.

*International Meeting of the Portuguese Society of Genetics*, January 23 - 24, Faro, Portugal.

1. Gonçalves-Anjo, N., Pereira, J., Bastos, E., Gama, A., Orge, L., Pires, M.A. 2020. Molecular Genetics Approaches-current state of Chronic Wasting Disease in Portugal. Book of Abstracts, pp 67. Poster.
2. Gonçalves-Anjo, N., Pereira, J., Gama, A., Orge, L., Pires, M.A., Bastos, E. 2020. Human and animal Prionic Diseases in Portugal - Who is the model? Book of Abstracts, pp 68. Poster.

*Reunião Sociedade Portuguesa de Farmacologia, XIX Reunião de Toxicologia*, February 5 - 7, Coimbra, Portugal.

1. Nascimento-Gonçalves, E., Silva, M., Seixas, F., Fardilha, M., Ferreira, R., Neuparth, M. J., Faustino-Rocha, A. I., Colaço, B., Venâncio, C., Rosa, E., Barros, L., Ferreira, I.C.F.R., Oliveira, M.M., Peixoto, F., Oliveira, P. 2020. *Castanea sativa* mill. flowers as potential chemopreventive agent against rat prostate cancer model. Book of Abstracts, pp. 139. Oral communication.

*V Jornadas do Porco Bísaro (APEZ) e XX Jornadas do Porco Bísaro (ANCSUB)*, February 7, Vinhais, Portugal.

- 1 Monteiro, D. 2020. Maneio na engorda. Invited speaker.
- 2 Paixão, G. 2020. Idade à puberdade do porco Bísaro –estudos conducentes à implementação de um protocolo de imunocastração –o projeto Icas Bísaro. Invited speaker.

*XII Jornadas de Genética e Biotecnologia/II Jornadas Ibéricas de Genética y Biotecnologia*, February 20 - 22, UTAD, Vila Real, Portugal.

- 1 Azevedo, J. 2020. The history of silkworm production and new technologies. [A produção de bichos-da-seda. Da sericultura tradicional às novas tecnologias]. Book of Abstracts, p 116. Workshop.
- 2 Barbosa, M., Pires, M., Queiroga, F., Pires, C.A., Dinis, T., Silvestre-Ferreira, A.C. 2020. Prothrombin Time and Activated Partial Thromboplastin Time Reference Intervals in dogs. Book of Abstracts, p. 108. Poster.
- 3 Barbosa, S., Prada, J., Queiroga, F.L., Delgado, L., Pires I. 2020. Immunoexpression of TGFβ-1 in dogs and cat's lung tumours. Book of Abstracts, p. 89. Poster.
- 4 Carvalho, A., Gaivão, I., Lima-Brito, J. 2020. Differential response of infraspecific taxa of *Pinus nigra* to PEG-induced osmotic stress assayed by cytogenetic and alkaline comet-assay analyses. Book of Abstracts, p. 74. Poster.
- 5 Castro-Ribeiro, C.1, Silva-Reis, R., Ribeiro-Silva, C.M, Taofiq, O., Barros, L., Martins, T., Pires, M.J., Mendes-Gonçalves, M., Ferreir, T., Pinto, M.L., Venâncio, C., Ferreira, I.C.F.R., Rosa, E., Oliveira, P. 2020. *Ganoderma lucidum* (Curtis) P. Karst. to fight obesity in an animal model -Preliminary results. Book of Abstracts, p. 94. Poster.
- 6 Coelho A.C., João, S., Ribeiro, A., Matos, A.C., Figueira, L., Soares, A.S., Pinto, M.L., Matos M. 2020. Detection of *Francisella* spp. in wild animal lymph nodes and lungs by PCR and histopathological techniques. Book of Abstracts, p. 78. Poster.
- 7 Coelho, A.C., Matos, A.C., Figueira, L., Soares, A.S., Ferreira, R., Ferreira, T., Santos, M., Matos M. 2020. Five years in the detection of *Talaromyces marneffei* in Portugal. It's time to think about! Book of Abstracts, p. 79. Poster.
- 8 Costa, D., Rodrigues, P., Prada, J., Queiroga, F.L., Silva, F., Pires, I. 2020. The role of angiogenesis in Canine Cutaneous Histiocytoma spontaneous regression. Book of Abstracts, p. 88. Poster.
- 9 Ferreira, C., Santos, M., Pinto, H.P., Moura-Alves, M., Saraiva, C., Esteves, A., Matos, M. 2020. Detection and evaluation of virulence factors of *Staphylococcus aureus* in a slaughterhouse. Book of Abstracts, p. 101. Poster.
- 10 Ferreira, J., Sousa, L., Teixeira, C., Ribeiro, C., Matos, A., Soares, R., Carvalho, A., Miranda, M., Guerreiro, A., Pinto, C., Faria, M., Gaivão, I. 2020. Evaluation of the genotoxicity of titanium dioxide nanoparticles – an innovative approach in the comet assay using HepG2 cells. Book of Abstracts, p. 61. Poster.
- 11 Gomes, H., Prada, J., Queiroga, F.L., Silva, F., Pires, I. 2020. Dotumor-associated macrophages promote feline injection site sarcomas progression? Book of Abstracts, p. 98. Poster.
- 12 Gomes, S., Queiroga, F., Ferreira, A. 2020. Imagiological aspects of urine sediment in companion, exotic and wild animals: preliminary data for the elaboration of an online veterinary urine atlas. Book of Abstracts, p. 92. Poster.
- 13 Henriques, C., Queiroga, F.L., Dinis, T., Silvestre-Ferreira, A.C. 2020. Importance of the determination of d-dimers in disseminated intravascular coagulation and thromboembolic diseases in dogs. Book of Abstracts, p. 91. Poster.
- 14 Lopes, G., Santos, M., Moura-Alves, M., Saraiva, C., Esteves, A. Matos, M. 2020. Identification of *Salmonella* spp. and evaluation of genetic diversity with ISSRs in pork samples from slaughterhouse. Book of Abstracts, p. 95. Poster.

- 15 Maia, G., Pires, I., Prada, J., Silva, M., Queiroga, F.L. 2020. Immunoexpression of MMP-9 in canine malignant tumours. Book of Abstracts, p. 100. Poster.
- 16 Matos, L., Santos, I.J., Gonçalves, M., Oliveira, P., Pires, J.M., Coutinho, F.M., Prada, J.M., Alves, S. 2020. From bench to bioterium and back again: Development of a U1 snRNA-based therapy for Mucopolysaccharidosis IIIC. Book of Abstracts, p. 104. Poster.
- 17 Matos, M., Santo, M., Soares, A.S., Coelho, A.C. 2020. Molecular Genetics –Genotype vs Phenotype. Book of Abstracts, p. 114. Workshop.
- 18 Miranda C., Pinto C., Soares A.S., Oliveira F., Pereira J., Matos M., Coelho A.C. 2020. Fungal diversity in teas, tisanes and infusions -is it dangerous to drink tea? Book of Abstracts, p. 76. Poster.
- 19 Nascimento-Gonçalves, E., Seixas, F., Colaço, B., Ferreira, R., Oliveira- P.A. 2020. Proliferation index in chemically and hormonally induced prostate cancer rat model: the role of physical exercise. Book of Abstracts, pp. 83. Poster.
- 20 Saraiva, C., Queiroga, F., Ferreira, A. 2020. Blood cell morphology in veterinary species: preliminary data for the elaboration of an online veterinary hematology atlas. Book of Abstracts, p. 93. Poster.
- 21 Silva Reis, R., Castro-Ribeiro, C., Ribeiro-Silva, C.M., Mendes, M., Ferreira, T., Pires, M.J., Ferreira, R., Gama, A., Faustino-Rocha, A.I., Venâncio, C., Oliveira, P.A. 2020. Morphometric analysis of rat parameters during an animal model of colorectal cancer. Oral communication.
- 22 Soares A.S., Pereira J., Miranda C., Pinto C., Oliveira F., Matos M., Coelho A.C. 2020. Indoors Fungal biodiversity -Penicillium and Alternaria. Book of Abstracts, p. 49. Oral communication.
- 23 Viegas, C., Requicha, J. 2020. Clinical genomics of the periodontal disease. Book of Abstracts, p. 117. Workshop.

*XVI Congresso Hospital Veterinário Montenegro - Inovação & Desenvolvimento sem Segredos*, February 20 - 22, Santa Maria da Feira, Portugal.

1. Aleixo, M., Figueira, A.C., Vilhena, H., Carvalho, L., Oliveira, P.J., Teixeira, J., Montezinho, L. 2020. Quantification of plasmatic zonulin levels in cats with inflammatory diseases: a pilot study. Book of Abstracts, p. 175. Poster.
2. Barbosa M., Pires M.J., Queiroga F.L., Dinis T., Silvestre-Ferreira A.C. 2020. Criação de intervalos de referência internos do laboratório de patologia clínica do hospital veterinário da universidade de Trás-os-Montes e alto douro para os tempos de protrombina e de tromboplastina parcial ativada para o cão no aparelho start®4 (STAGO). Book of Abstracts, pp. 94-98. Poster.
3. Dias L.R., Vilhena H., Carolino N., Freira A., Moura M., Aleixo R., Silvestre-Ferreira A.C., Duarte S. 2020. Transfusões sanguíneas em cães e gatos: um estudo retrospectivo em portuga. Book of Abstracts, pp. 193-194. Poster.
4. Frada, M., Vieira, L., Costa, L. 2020. Plastia em “z” e sutura túbio-calcânea temporária de nylon para corrigir alongamento de tendão de aquiles no cão. Book of Abstracts, pp. 163-164. Poster.
5. Gomes, A., Dourado, A., Teixeira, P., Azevedo, J., Lobo, L., Dias, I. 2020. Administração epidural de lidocaína com morfina através de abordagem sacrococcígea em gatas submetidas a ovariectomia - efeitos na analgesia perioperatória. Book of Abstracts, pp. 12-13. Oral communication.
6. Lemos, H., Dorado, J., Pereira, B., Diaz-Jimenez, M., Demyda-Peyras, S., Hidalgo, M., Gaivão, I., Martins-Bessa, A. 2020. Doppler Ultrasonography of the canine testis for predicting oxidative DNA damage in sperm. Book of Abstracts, pp. 108-109. Poster.
7. Oliveira, A.M., Coelho, A.C., Vilhena, H. 2020. Infecções por Escherichia coli do trato urinário em cães e gatos: estudo retrospectivo. Book of Abstracts, pp. 135-136. Poster.
8. Parra W., Silvestre-Ferreira A.C., Pires M.J., Dinis T., Cruz L., Sacoto S., Queiroga F. 2020. Validação das câmaras de sedimento pentasquare na avaliação do sedimento urinário de cães e gatos. Book of Abstracts, pp. 207-208. Poster.
9. Pereira, Z., Cardoso, L., Coelho, A.C. 2020. Differences in preparedness to natural disaster among dog owners and other pet owners in Oporto, Portugal. Book of Abstracts, pp. 102-103. Poster
10. Ribeiro A.C., Silvestre-Ferreira A.C., Queiroga F. 2020. Hyperglycemia effect on leucocyte parameters of dog and cat blood. Book of Abstracts, pp. 129-130. Poster.

11. Requicha, J.F., Alves, L., Pereira, H., Herras F.J., Bustamante, M., Viegas, C., Detry, C., Pires, A.E. 2020. Dental and periodontal pathology in ancient dogs (*Canis lupus familiaris*): the the study of archaeological remains dated to the Roman period. Book of Abstracts, pp. 26-27. Oral communication.
12. Requicha, J.F., Braga, H., Monteiro, H. 2020. Pulpectomia total em cão com pulpite necrótica associada a desgaste dentário por abrasão. Book of Abstracts, pp. 169-170. Poster.
13. Silva, V., Sousa, T., Ribeiro, J., Pereira, J.E., Vieira-Pinto, M., Capelo, J.L., Igrejas, G., Poeta, P. 2020. Methicillin-resistant staphylococcus aureus in purulent subcutaneous lesions of intensive farming rabbits. Book of Abstracts, pp. 153-154. Poster.

*Seminário de Obstetrícia e Neonatologia em Animais de Companhia*, March 4, UTAD, Vila Real, Portugal.

1. Martins-Bessa, A.C. 2020. Gestação: monitorização ecográfica e estimativa da data de parto. Oral communication.

*XII Jornadas do Hospital Veterinário Muralha de Évora*, March 6 - 7, Évora, Portugal.

1. Abrautes, A.C., Serejo, J., Vieira-Pinto, M. 2020. Qual a influência da intensificação das práticas de manejo cinegético na prevalência da tuberculose em populações de veado vermelho (*Cervus elaphus*)? Resumos das XII Jornadas do Hospital Veterinário Muralha de Évora. Revista Portuguesa de Ciências Veterinárias, Volume115, Nº615, pp. 29-30. Oral communication.
2. Fontela, S., Castelo, C., Payan-Carreira, R., Esteves, A. 2020. Ensaio preliminar - determinação da idade à puberdade em suínos Bísaros com base no comportamento sexual. Resumos das XII Jornadas do Hospital Veterinário Muralha de Évora. Revista Portuguesa de Ciências Veterinárias, Volume115, Nº615, pp. 27-28.
3. Margatho, G., Rodríguez-Estévez, V. 2020. Utilização de novos métodos de diagnóstico de mastites em caprino. Oral communication.
4. Moura-Alves, M., Patrícia Pinto, H., Saraiva, C., Esteves, A. 2020. Avaliação da contaminação de carcaças de suíno por *Staphylococcus aureus* em dois matadouros distintos após evisceração. Resumos das XII Jornadas do Hospital Veterinário Muralha de Évora. Revista Portuguesa de Ciências Veterinárias, Volume115, Nº615, pp. 27-28.
5. Pimenta, J., Cotovio, M., Couto, D. 2020 Sensibilidade e especificidade do exame de claudicação, provas manipulativas e bloqueios anestésicos em lesões músculo-esqueléticas de cavalos. Resumos das XII Jornadas do Hospital Veterinário Muralha de Évora. Revista Portuguesa de Ciências Veterinárias, Volume115, Nº615, pp. 26-27. Poster.
6. Pimenta, J., Saavedra, M.J., Silva, G.J., Cotovio, M. 2020. Identificação de Microbiota Gram-negativa multirresistente a antibióticos potencialmente patogénica da cavidade oral de equinos saudáveis. Resumos das XII Jornadas do Hospital Veterinário Muralha de Évora. Revista Portuguesa de Ciências Veterinárias, Volume115, Nº615, pp. 32-33. Oral communication.

*109th Annual Meeting of the United States and Canadian Academy of Pathology (USCAP), Virtual Meeting*, February 29 - March 5, Los Angeles, California, USA.

- 1 Cañete-Portillo, M.S., Medeiros-Fonseca, B., Mestre, V., Estêvão, D., Sanchez, D.F., Fernandez-Nestosa, M.J., Casaca, F., Silva, S., Moniz, B., Brito, H., Félix, A., Medeiros, R., Colaço, B., Oliveira, P.A., Nelson, P.S., Vakar-Lopez, F., Gaivão, I., Brito, L.M.O., Lopes, C., Cubilla, A.L., Gil da Costa, R.M. 2020. Pathological features of benign and malignant epithelial abnormalities of the penis in transgenic mice. An experimental Model to Study HPV-related Penile Carcinogenesis. Evaluation of 87 cases. Abstracts of the USCAP annual meeting, Modern Pathology, Suppl 2, Volme 33, pp. 864-865. Poster.

*Seminário de Neonatologia e Obstetrícia de Animais de Companhia*, March 4, Vila Real, Portugal

1. Lourenço, A., 2020. Nutrição e alimentação de cães e gatos o período pós-natal. Invited speaker.

*Optical Sensing and Detection VI 2020*, Virtual Meeting, April 6-10, France.

1. Vasconcelos, H., Almeida, J.M., Saraiva, C., Viveiros, D., Jorge, P.A.S., Coelho, L. 2020. Preliminary assessment on the detection of putrescine using long period fiber

gratings coated with titanium dioxide and poly (ethylene-co-vinyl acetate). Proceedings of SPIE - The International Society for Optical Engineering, Volume 11354, Article N°113540B, 6 pages.

*XIII Encontro Nacional de Estudantes de Bioquímica – Bioquímica para lá dos montes*, Virtual Meeting, April 3 - 6, UTAD, Vila Real, Portugal.

1. Sousa, C., Alves, C., Neves, M.P., Gaivão, I., Teixeira J.P., Pereira, C. 2020. Oxidative DNA damage among workers exposed to noise. Poster.

*VII International Symposium on Marine Sciences (ISMS 2020)*, Virtual Meeting, July 1 - 3, Barcelona, Spain.

1. Ferreira, J., Martins-Gomes, C., Nunes, F.N., Pacheco, M., Gaivão, I., Silva, A.M. 2020. Red seaweeds *Grateloupia turuturu* and *Porphyra umbilicalis* as a marine resource – a study on the phenolic composition and bioactive properties. Abstract book, pp. 141-142. Oral communication.

*Escola de Inverno da Associação Brasileira de Patologia Veterinária (ABPV)*, Online, July 16.

1. Gama, A. 2020. Imuno-histoquímica nas neoplasias mamárias nas cadelas e gatas. Módulo de Patologia Mamária. Invited speaker.

*33<sup>rd</sup> International Papillomavirus Conference*, July 20 - 21, Barcelona, Spain.

1. Medeiros-Fonseca, M., Mestre, V., Estêvão, D., Sánchez, D., Cañete-Portillo, S., Fernández-Nestosa, M.J., Casaca, F., Silva, S., Brito, H., Félix, A., Medeiros, R., Colaço, B., Oliveira, P.A., Bastos, M., Nelson, P.S., Vakar-Lopez, F., Gaivão, I., Brito, L., Lopes, C., Cubilla, A.L., Gil da Costa R.M. 2020. Development of the first transgenic mouse model for HPV16-related penile cancer. Poster.

*Jornada de Citopatologia da Associação Brasileira de Patologia Veterinária (ABPV)*, Virtual Meeting, August 10 - 11.

1. Pires, M.A., Seixas, F., Gama, A. 2020. Citologia na necrópsia. Simpósio Capixaba de citopatologia veterinária/ de 2020, em formato remoto. Invited speaker.

*Jornadas Online da CRAEGA (Consello Regulador de Agricultura Ecolóxica de Galicia)*, August 26, Lugo, Espanha.

1. Cerqueira, J.L. 2020. Indicadores de bem-estar animal em vacún de leite ecolóxico. Invited speaker.

*Webinar “Head to Tail: Dermatology meets Dentistry, Ophthalmology, Neurology and Internal Medicine”*, Virtual Meeting, September, 12 - 13, United Kingdom.

1. Requicha, J.F. 2020. Dentistry meets Dermatology. Autumn Meeting. Oral Communication.

*Workshop: Valorização da Lã de aças de ovinos autóctones: do Velo ao Fio*, September 16, UTAD, Vila Real, Portugal.

- 1 Azevedo, J. 2020. Caracterização dos velos dos 3 grupos étnicos.
- 2 Silva, S. 2020. Fatores que influenciam a qualidade da lã.

*2º Encontro Nacional de Jovens Investigadores em Oncologia*, September 24, Porto, Portugal.

1. Nascimento-Gonçalves, E., Seixas, F., Faustino-Rocha, A.I., Pires, M.J., Neuparth, M.J., Moreira-Gonçalves, D., Duarte, J.A., Colaço, B., Ferreira, R., Oliveira P.A. 2020. Lesões do lobo dorsolateral da próstata do rato num modelo de indução química e hormonal: a influência do exercício físico. Poster.
2. Silva Reis, R., Castro-Ribeiro, C., Mendes-Gonçalves, M., Ribeiro-Silva, C.M., Ferreira, R., Gama, A., Ferreira, R., Oliveira, P.A. 2020. Cancro colorretal: comparação entre um bioensaio de médio e longo prazo num modelo animal. Poster.

*European Society of Clinical Investigations (ESCI) Virtual Meeting 2020 - COVID Edition*, September 28.

1. Faustino, A., Oliveira, P.A., Gama, A., Ferreira, R., Ginja, M. 2020. Immunology and mammary cancer development: addressing the role of mast cells. Abstracts of the ESCD

virtual meeting, European Journal of Clinical Investigation (ESCI) Virtual Meeting 2020 - COVID Edition, p. 204. Oral communication.

*Seminário de Medicina Felina – Felinos domésticos*, Setembro 30, Vila Real, Portugal.

1. Lourenço, A. 2020. Porque são os gatos domésticos obesos? O que fazer para o contrariar? Invited speaker.

*8ª Edição do Curso de Exame Inicial de Caça Abatida em Zonas de Caça*, Outubro 2 - 3, Mirandela, Portugal.

- 1 Pinheiro, V. 2020. Conceitos básicos sobre fisiologia de aves e leporídeos. Módulo 1 Caça menor. Módulo 2 Caça maior.
- 2 Pinheiro, V. 2020. Conceitos básicos sobre fisiologia de ruminantes (cervídeos) e de monogástricos (javalis)
- 3 Vieira-Pinto, M. 2020. Identificação de lesões e anomalias que podem ser observadas no decurso da avaliação sanitária de aves e de leporídeos. Módulo 1 Caça menor.
- 4 Vieira-Pinto, M. 2020. Identificação de lesões e anomalias que podem ser observadas no decurso da avaliação sanitária das peças de caça maior. Módulo 2 Caça maior.
- 5 Vieira-Pinto, M. 2020. Legislação e disposições administrativas relativas às condições que regem a colocação da caça selvagem no mercado. Módulo 3

*I Congresso Internacional de Medicina Veterinária e Ciências Biológicas do CEUNSP 2020 e IV Congresso de Medicina Veterinária e Ciências Biológicas*, Virtual Meeting, Outubro 14.

1. Gama, A., Alves, A. 2020. Medicina Veterinária Forense. Invited Speaker.

*Scientific Conference of COST Action 18105 "Risk-based meat inspection and integrated meat safety assurance"*, Online Meeting, October 15 - 16

1. Alban, L., Vieira-Pinto, M., Meeken, D., Maurer, P., Ghidini, S., Santos, S., Gómez-Laguna, L., Laukkanen-Ninnios, R., Alvseike, O., Langrabel, N. 2020. Level of implementation of new meat inspection systems in 26 European countries. Book of Abstracts, p. 24. Oral communication.
2. Antunovic, B., Blagojevic, B., Vågsholm, I., Georgiev, M., Meemken, D., Alvseike, O., Johler, S., Vieira Pinto, M., Guldemann, C., Alban, L. 2020. Level of implementation of new meat inspection systems in 26 European countries. Book of Abstracts, p. 13. Oral communication.
3. Azevedo, J., Poeta, P., Pires, I., Ellebroek, L., Alban, L., Vieira-Pinto, M. 2020. Classification scheme for acute/chronic vertebral osteomyelitis to be applied during post-mortem inspection of swine carcasses – A suggestion. Book of Abstracts, p. 22. Oral communication.
4. Blagojevic, B., Nesbakken, T., Alvseike, O., Vågsholm, I., Antic, D., Johler, S., Houf, K., Meemken, D., Nastasijevic, I., Vieira Pinto, M., Antunovic, B., Alban, L. 2020. European risk-based meat safety assurance system - The role of RIBMINS. Book of Abstracts, p. 10. Oral communication.
5. Querido, S., Outor-Monteiro, D., Vieira Pinto, M. 2020. Tail biting in pigs: comparison of tail lesions at the farm and abattoir level. Book of Abstracts, p. 31. Poster.
6. Saraiva, C., Vieira-Pinto, M. 2020. Flock uniformity: a poultry welfare indicator to be used at slaughterhouse? Book of Abstracts, p. 15. Oral communication.
7. Saraiva, C., Pires, I., Vieira Pinto, M. 2020. Gross lesions detected during post-mortem inspection of laying hens: the role of Microscopic Observation. Book of Abstracts, p: 32. Poster.

*2nd International Conference of the European College of Veterinary Microbiology*, Webinar, Outubro 25 – 27.

- 1 Garcês, A., Soeiro, V., Lóio, S., Silva, F., Pires, I. 2020. Osteomyelitis on the cervical vertebrae of a free-living european hedgehog (*erinaceus europaeus*) by *paeniclostridium sordelli*. 2nd International Conference of the European College of Veterinary Microbiology, outubro. Book of abstracts, p. 60. Poster.
- 2 Matos, A.C., Alves, D., Saraiva, S., Figueira, L., Soares, A.S., Matos, M., Coelho, A.C. 2020. Occurrence of *Talaromyces marneffe* in wild mammals in Portugal. Book of abstracts p. 43. Poster.

- 3 Miranda, C., Silva, J., Silva, V., Igrejas, G., Quaresma, M., Poeta, P. 2020. Use of Accumast plates to isolate specific mastitis pathogens from Portuguese dairy farms. Book of abstracts p. 51. Poster.
- 4 Oliveira, S., Soares, A.S., Miranda, C., Silva, V., Silva, A., Trindade, H., Igrejas, G., Coelho, A.C., Poeta, P. 2020. Presence of ESBL-producing *Escherichia coli* in cow manure in Portugal. Book of abstracts, p. 77.
- 5 Quintas, H., González, O.M., Vila, A.G., Sánchez Corral, M.L., Pérez, V., Coelho, A.C. 2020. A seroepidemiological survey of *Mycobacterium avium* subsp. *paratuberculosis* in goats in the Northeast of Portugal. Book of abstracts, p. 65. Poster.
- 6 Silva, V., Peirone, C., Miranda, C., Marques-Magalhães, J.A., Maltez, L., Pereira, J.E., Igrejas, G., Poeta, P. 2020. Topical application of ozonated oils for the treatment of skin infection in an animal model. Book of abstracts, p. 45. Poster.
- 7 Silva, V., Miranda, C., Maltez, L., Pereira, J.E., Capelo, J.L., Igrejas, G., Poeta, P. 2020. Veterinary nonsteroidal anti-inflammatory drugs to combat methicillin-resistant *Staphylococcus aureus* infections. Book of abstracts, p. 46. Poster.

6° One Health World Congress Virtual Edition, October 30 - November 3.

1. Pinello, K., Queiroga, F.L., Santos, A., Pires, I., Matos, A., Niza Ribeiro, J. 2000. Vet-OncoNet - Veterinary Oncology Network. Poster.

Conferências da Associação Portuguesa de Engenharia Zootécnica (APEZ): Certificação de Bem-Estar Animal, Online, Novembro 2.

1. Silva, S.R. 2020. Acrescentar valor nos produtos de origem animal através do bem-estar. Invited speaker.

1st International Electronic Conference on Food Science and Functional Foods, (Foods'2020), MDPI Science, Novembro 10 - 25.

1. Gonçalves, C., Gomes, A., Esteves, A., Silva, J.A., Saraiva, C. 2020. Food safety and food waste in one Portuguese public hospital. session 5 Food Safety and Sustainable Development.

Curso Intensivo de Medicina Dentária Veterinária, Improve Internacional, Novembro 21-22, Porto, Portugal.

1. Requicha, J.F. 2020. Anatomia clínica dentária e da cavidade oral. Módulo 1: Fundamentos de medicina dentária.
2. Requicha, J.F. 2020. Fundamentos e interpretação da radiografia dentária intraoral. Módulo 1: Fundamentos de medicina dentária.
3. Requicha, J.F. 2020. Equipamento e material utilizado em periodontologia e exodontia. Módulo 1: Fundamentos de medicina dentária.
4. Requicha, J.F. 2020. Bloqueios regionais em procedimentos de medicina dentária veterinária. Módulo 2: Extração dentária e cirurgia periodontal.
5. Requicha, J.F. 2020. Extração dentária em cães e gatos. Módulo 2: Extração dentária e cirurgia periodontal.

71st Annual Meeting of the European Federation of Animal Science, Virtual Meeting, Decembre 1-4.

1. Almeida, J., Gomes, M., Silva, S., Trindade, H. 2020. SWOT analysis of the North Portugal dairy sector. Book of abstracts N° 26, p. 443. Oral communication.
2. Almeida, M., Garcia-Santos, S., Nunes, A., Rito, S., Guedes, C., Ferreira, L., Santos, V., Dominguez, R., Lorenzo, J.M., Silva, S.R., Azevedo, J. 2020. Effect of replacing soybean meal by *Lupinus luteus* on meat fatty acids composition of growing lambs. Book of abstracts N° 26, p. 230. Oral communication.
3. Almeida, M., Nunes, A., Rito, S., Garcia-Santos, S., Guedes, C., Ferreira, L., Stilwell, G., Silva, S. 2020. Effect of introducing *Lupinus luteus* seeds to lamb diets on their eating behavior. Book of abstracts N° 26, p. 245. Poster.
4. Araújo, J.P., Cerqueira J.L., Barros, M., Fernandes, E., Rodrigues, R., Lebet, B., Preciosa, P. 2020. Red wine in cured Bísaro pig ham to minimise salt content and improve physico-chemical attributes. Book of abstracts N° 26, p. 518. Oral communication.



5. Botelho Fontela, S., Castelo, C., Paixão, G., Payan-Carreira, R., Esteves, A. 2020. Growth performance in Bísaro pigs under different feeding regimes. Book of abstracts N° 26, p. 523. Poster.
6. Botelho Fontela, S., Castelo, C., Paixão, G., Pires, M.A., Payan-Carreira, R., Esteves, A. 2020. Effects of Improvac® on the testicular function of adult male Bísaro pigs. Book of abstracts N° 26, p. 217 Oral communication.
7. Catani, R., Cerqueira, J.L., Araújo, J.P., Cadavez, V.A.P. 2020. A study of growth performance of Bordaleira de Entre Douro e Minho lambs breed. Book of abstracts N° 26, p. 639. Poster.
8. Cerqueira, J.O.L., Sousa, J.M.C.T., Cruz, L.M.G., Cantalapiedra, J., Blanco-Penedo, I., Araújo, J.P., 2020. Association between morphological classification and productivity of Holstein Friesian cows. Book of abstracts N° 26, pág. 320. Poster.
9. Charneca, R., Marques, J., Paixão G., Payan-Carreira, R. 2020. Performance of immunocastrated or surgical castrated Bísaro pig breed males. Book of abstracts N° 26, p. 520. Poster.
10. Faria, L.M.G., Ferreira, A., Araújo, J.P., Cerqueira, J.O.L. 2020. Evaluation of animal welfare through milk recording in dairy cows. Book of abstracts N° 26, pág. 143. Poster.
11. Guedes, C., Almeida, M., Garcia-Santos, S., Silveira, A., Ferreira, L., Silva, S., Pinheiro, V., Monteiro, D., Gome. 2020. s Evaluation of guar meal and yellow lupine seeds as alternatives to soybean meal for ruminants. Book of abstracts N° 26, p. 308. Poster.
12. Outor-Monteiro, D., Ferreira, S., Botelho, S., Melo, D., Guedes, C., Gomes, M.J., Pinheiro, V. 2020. Evaluation of guar meal as alternative to conventional protein sources for pigs, broilers and rabbits. Book of abstracts N° 26, pp. 298. Oral communication.
13. Paixão, G., Marques, J., Botelho, S., Esteves, A., Charneca, R., Payan-Carreira, R. 2020. Scrotal morphometry of Bísaro pig males treated with two or three administrations of Improvac®. Book of abstracts N° 26, p. 519. Poster.
14. Pinheiro V., Gonçalves J., Monteiro, D. 2020. Behaviour and growth performances in growing rabbits submitted to time restrictions on access to water. Book of abstracts N° 26, pp. 616. Poster.
15. Santos Silva, J., Cerqueira J.L., Candek-Potokar, M., Araújo, J.P. 2020. Short supply chains of Bísaro pig - TREASURE project as a reference of knowledge and networking tool. Book of abstracts N° 26, pág. 637. Poster.
16. Silva, S.R., Almeida, M., Bacellar, B., Leiva, B., Quaresma, M. 2020. Using infrared thermography as a tool to assess acute stress of donkeys during weighing procedure. Book of abstracts N° 26, p. 554. Poster.
17. Silva, S.R., Guedes, C., Bacellar, D., Leiva, B., Quaresma, M. 2020. Live weight prediction of Miranda donkey from body measurements using image analysis. Book of abstracts N° 26, p. 471. Poster.
18. Vaz, P.S., Araújo, J.P., Cerqueira, J.L., Oliveira, J., 2020. Growth modulation of Sasso C44 roosters in the “Galo de Barcelos” production system. Book of abstracts N° 26, pág. 515. Oral communication.
19. Vaz, P.S., Cerqueira, J.L., Oliveira, J., Araújo, J.P., 2020. Biometric characterisation of Sasso C44 roosters in the “Galo de Barcelos” production system. Book of abstracts N° 26, pág. 571.
20. Venâncio, C., Moreira, D., Almeida, J.C., Vieira, R., Silva, J.A., Silva, S.R. 2020. Using real-time ultrasonography to identify the optimum subcutaneous fat depth in Arouquesa breed. Book of abstracts N° 26, pág. 602. Poster.
21. Venâncio, C., Valentim, P., Moreira, D., Silva, S.R. 2020. Relationship between rectal and infrared thermography maximum eye temperature of Arouquesa breed. Book of abstracts N° 26, p. 152. Poster.

*V PhD Students Meeting in Environmental and Agriculture*, Decembre 9, Évora, Portugal.

1. Silva, F., Cerqueira, J.L., Conceição C., Silva, S., 2020. Dairy calves welfare indicators. Abstract book, p. 19. Poster.

## Formation

In 2020, 23 doctoral students (including 14 students with a scholarship) are developing their research work at CECAV. Most of these PhD students are enrolled in the 3rd Cycle courses anchored in CECAV: Animal Science and Veterinary Science and Animal Science. During 2019, 2 PhD students were finished their doctoral thesis.

Most of the researchers at CECAV are professors at UTAD, they also develop an academic career, establishing a very important link between teaching and research for undergraduate and master students. A large number of master students are involved in the research activities of CECAV while they develop their dissertation work. In 2020, the orientation of master students (67 students per year, mostly from UTAD master courses) continued as an important activity at CECAV. Most of the supervised master students are from the Integrated Master and Veterinary Medicine. The researchers of CECAV, also supervised the graduation reports of 15 students.

This list includes Doctoral thesis, Master dissertations and Graduation reports concluded in 2020 and oriented by researchers of CECAV.

### Doctoral Thesis

1. Ana Margarida Lourenço Silva Marques. Marine macroalgae as functional food and biotechnological potential - DNA integrity promotion and underlying mechanisms. Doutoramento em Biologia. Universidade de Aveiro, Portugal. 14 de fevereiro.
2. Hugo Corte Real Vilhena. Acute Phase Proteins in Feline Medicine -Acute phase proteins response in feline natural infection by hemotropic mycoplasmas (hemoplasmas), in feline pyometra and in feline spontaneous malignant mammary tumors. Doutoramento em Ciências Veterinárias, UTAD, Vila Real, Portugal. 8 de maio.

### Master dissertations

1. Alícia Catarina da Costa Ferreira. Acompanhamento técnico-científico da variação do valor nutritivo das pastagens na Ilha Terceira-Açores. Mestrado em Engenharia Zootécnica, UTAD, Vila Real, Portugal.
2. Ana Beatriz Araújo Pereira. Obstruções Urinárias em Gatos: Casos Clínicos. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
3. Ana Clara Sampaio Ribeiro. Evaluation of the pre-analytical factors effect in the blood glucose concentration determination and iatrogenic hyperglycaemia effect on leukogram values. Mestrado em Bioquímica, UTAD, Vila Real, Portugal.
4. Ana Filipa Colaço Freire. Determinação da idade fetal em asininos da raça Mirandesa e Zamorano-Leonesa através de ultrassonografia transreta. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
5. Ana Filipa Raso de Oliveira. Resistência a antiparasitários em estrogilídeos gastrointestinais de ovinos. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
6. Ana Mafalda de Sousa Agostinho Matias. Medicina e Patologia de Animais Exóticos: Estase Gastrointestinal em Coelho de Companhia. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
7. Ana Margarida Gonçalves Vilaça. Tribial Plateau Levelling Osteotomy no tratamento da Rutura de Ligamento Cruzado Cranial no cão – Estudo retrospectivo. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
8. Ana Rafael Barbosa de Matos Teixeira. O poldro neonato: estudo dos fatores que influenciam o sucesso produtivo. Mestrado em Engenharia Zootécnica, UTAD, Vila real, Portugal.

9. Ana Rita Ribeiro Benídio. Triagem na Clínica de Animais de Companhia – Trabalho de Projeto. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
10. Ana Sofia Costa Chaves. Maneio Reprodutivo em Bovinos de Carne. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
11. Ana Sofia de Jesus Paiva. Monitorização automática por análise de imagem da condição corporal em vacas leiteiras. Mestrado em Engenharia Zootécnica, UTAD, Vila Real, Portugal.
12. Ana Sofia Vanzeller Monteiro de Magalhães Rola. Evaluation of L7-S1 Nerve Root Pathology with Magnetic Resonance Imaging in Dogs with Degenerative Lumbosacral Stenosis – Assessment of the Diagnostic Value of the Water Excitation Technique (WET). Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
13. André Coimbra de Sousa. Bronquite Infeciosa em Avicultura Industrial. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
14. Andreia Fernanda Moreira da Mota. The relationship between specific gravity and refractive index for cats and dogs: an equivalence study. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
15. Bruno Mendes. Efeito da suplementação da dieta com feijão-frade (*Vigna unguiculata*) num modelo animal de cancro colorretal. Mestrado em Bioquímica. UTAD, Vila Real, Portugal.
16. Cândido Lourenço Saraiva. Gross lesions detected during poultry post-mortem inspection at the slaughterhouse. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
17. Carlos Rafael Fraga Costa. Classificação Morfológica de Bovinos de Raça Maronesa. Mestrado em Engenharia Zootécnica, UTAD, Vila Real, Portugal.
18. Carolina Vitória dos Santos Neves. A Patologia Veterinária e sua contribuição para a prática Clínica. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
19. Catarina Margarida Videira Dias Pereira. Development of germplasm cryopreservation techniques for honey bee conservation. Mestrado em Engenharia Agronómica, UTAD, Vila Real, Portugal.
20. Céline Armandine da Fonseca Cossé. Parvovirose: Aspectos Clínicos e Epidemiológicos. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
21. Christophe Paulino Rodrigues. Clínica de aves exóticas e acompanhamento anatomopatológico Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
22. Daniela Filipa da Cruz Sousa Correia. Ocorrências clínicas presentes em cães sujeitos a um protocolo de neuroreabilitação funcional. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
23. Érica Portelinha Veiga. Esgana canina. Análise clínico-epidemiológica de casos. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
24. Fábio Jorge da Silva Rebelo. Cirurgia em Animais de Companhia: Complicações pós-cirúrgicas na resolução de luxações patelares em cães de pequeno porte. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
25. Francisca Soares marques de Almeida. The Corpus Callosum and its Abnormalities in Cats and Dogs Three distinct clinical presentation. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
26. Gonçalo Sereno e Melo de Almeida. Medicina e cirurgia em animais de produção e equídeos -Relatório de Estágio. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
27. Gonçalo Varajão Coelho. Ozonoterapia em sinovites sépticas de equinos: uma alternativa de tratamento. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
28. Helena Cabral de Lima Reis Pereira. Os desafios da atividade médico veterinária em répteis em parques zoológicos e em clínica como animais de companhia. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
29. Helena Isabel Ferreira dos Santos. Atuação Médico-Veterinária no Âmbito da Educação para a Saúde no Bioterrorismo Face aos Conhecimentos e Atitudes da População. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
30. Inês Alcaide Igreja. Urinary pH manipulation - Effects of diets and supplements on the urinary pH in dogs. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.

31. Inês da Silva Ferreira Dias. Functional neurorehabilitation and stem cell therapy in canine degenerative myelopathy. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
32. Inês de Sousa Leite. Cesariana de campo em vacas de produção leiteira: descrição de casos. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
33. Irina Andreia Caseiro Varela. A experiência e a vivência em dois centros de recuperação de fauna selvagem, Associação Mata Ciliar (Brasil) e Folly Wildlife Rescue (Reino Unido). Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
34. Isabel da Conceição Vasco Sobral. Classificação morfológica em bovinos leiteiros. Mestrado em Engenharia Zootécnica, UTAD, Vila Real, Portugal.
35. Joana Rodrigues de Jesus. Characterization and evaluation of prognostic factors of feline spontaneous malignant mammary tumors. Mestrado Integrado em Medicina Veterinária em Medicina Veterinária, Escola Universitária Vasco da Gama, Coimbra, Portugal.
36. Joana Rosária Bandeira da Cunha. Avaliação das práticas de manejo na cria de vitelos em explorações leiteiras no concelho de Barcelos. Mestrado em Engenharia Zootécnicas, UTAD, Vila Real, Portugal.
37. João Luís Monteiro Caçador. Influência da condição corporal na produtividade de porcas reprodutoras. Mestrado em Engenharia Zootécnica, UTAD, Vila Real, Portugal.
38. João Luís Pires Martins. Leishmaniose canina: estudo de casos do Nordeste Transmontano. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
39. João Nuno Silva Morais. Avaliação da influência do uso de aditivos mitigadores da concentração de amoníaco na qualidade da carne de frangos de engorda. Mestrado em Engenharia Alimentar, UTAD, Vila Real, Portugal.
40. João Paulo Ribeiro da Silva. Aplicabilidade de um novo meio de cultura seletivo e diferencial no diagnóstico presuntivo de mamites bovinas. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
41. José da Costa Pimenta. Sensibilidade e especificidade de provas manipulativas e bloqueios anestésicos do exame de claudicação de cavalos. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
42. José Luís Cunha Pimentel. Avaliação do bem-estar em bovinos *antes-mortem*. Mestrado em Engenharia Zootécnica, UTAD, Vila Real, Portugal.
43. José Miguel Queirós Teixeira Barbosa. Avaliação integrada da fileira de produção de coelho de engorda: da biossegurança na exploração à avaliação *post mortem* no matadouro. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
44. Lino António Ventura Pires. Auditorias de sistemas alimentares TMR (*Total Mixed Rations*): Impacto na performance produtiva em vacas leiteiras. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
45. Luís Miguel de Oliveira Lopes. Avaliação do valor nutritivo de diferentes matérias-primas para a alimentação de aves de rapina mantidas em cativeiro. Mestrado em Engenharia Zootécnica UTAD, Vila Real, Portugal.
46. Maria Filipa Lopes Parreiras. Corte de cauda *vs* mordedura de cauda. Mestrado em Engenharia Zootécnica, UTAD, Vila Real, Portugal.
47. Maria Inês Salavisa Vicente da Silva Mota. Artrosopia na Articulação do Ombro do Cão – Apresentação de Casos Clínicos. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
48. Maria Inês Silva Mendes Pereira. Potencialidades da Utilização de lasers de CO2 e Díodo em Cirurgia de Tecidos Moles – Apresentação de Casos Clínicos. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
49. Maria Inês Veiga de Macedo Magalhães Gonçalves. Retenção placentária em bovinos de leite: fatores de risco e prevenção. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
50. Maria José de Sousa Quinteira. Meningoencefalomielites de origem desconhecida no cão - análise de 8 casos clínicos. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
51. Mariana Filipa Leite Magalhães. Análise de danos de ADN em produtos de abortamento. Mestrado em Biotecnologia para as Ciências da Saúde, UTAD, Vila Real, Portugal.
52. Mariana Ribeiro da Costa Ferreira. Indo-Pacific bottlenose dolphin (*Tursiops aduncus*) reproduction and management. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.

53. Mariana Rodrigues Vinagre Ferreira. Efeito da suplementação alimentar nas performances produtivas de coelhas reprodutoras. Mestrado em Engenharia Zootécnica, UTAD, Vila Real, Portugal.
54. Marta Daniela Faria Barbosa. Criação de valores internos de referência do Laboratório de Patologia Clínica do Hospital Veterinário da Universidade de Trás-os-Montes e Alto Douro para os tempos de protrombina e de tromboplastina parcial ativada para o cão no aparelho STart@4 (Stago). Mestrado em Biologia Clínica Laboratorial, UTAD, Vila Real, Portugal.
55. Meggie Aldina Pereira Aires. Análise comparativa entre a realidade francesa e portuguesa em Parques Zoológicos e na Clínica de Novas Espécies de Companhia. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
56. Pedro Jorge Afonso Teiga Teixeira. Pre-slaughter risk facts of bruises in cattle carcasses. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
57. Pedro Miguel Figueiredo de Almeida. Perception of Portuguese veterinarians on the clinical application of psychoactive drugs and its pharmacological activity in dogs and cats. Mestrado Integrado em Medicina Veterinária em Medicina Veterinária, Escola Universitária Vasco da Gama, Coimbra, Portugal.
58. Pedro Miguel Teixeira Silva. Doença do disco intervertebral na região toracolombar em cães - Revisão de 16 casos clínicos. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
59. Rita Manuel Trindade Delgado. Tendinite do tendão flexor digital superficial de equinos criados em Portugal. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
60. Samuel Sales Garcia. Immunohistochemical Identification of macrophages in a poly (L-lactic acid) film implant with standard and superhydrophobic wettability. Mestrado Engenharia Biomédica. UTAD, Vila Real, Portugal.
61. Sara Martínez Ramos. Neonatología equina. Graduação em Veterinária, Facultad de Veterinaria de León, León, Espanha.
62. Sara Santos Ferreira. Avaliação do Bem-Estar Animal de Frangos no Matadouro e na Exploração. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
63. Sérgio Adriano Patinha Tavares Fernandes. Ocorrência de dermatofitose subclínica em coelhos-bravos de cativeiro no Norte de Portugal. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
64. Teresa Maria Santos Teixeira. Hipoadrenocorticism primário no cão – apresentação de casos clínicos. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
65. Vânia Raquel Lopes Menezes. Avaliação das boas práticas de higiene e de produção em linhas de abate de reses - Relatório de Estágio. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.
66. Virgínia Maria da Silva Rodrigues Morais. Parâmetros biométricos de ovos e reprodutivos de galináceos autóctones portugueses. Mestrado em Agricultura Biológica. ESA/IPVC, Ponte de Lima, Portugal.
67. Zélia Cristina Pereira da Cruz. Donkey welfare assessment in Northeast Portugal. Mestrado Integrado em Medicina Veterinária, UTAD, Vila Real, Portugal.

### **Graduation Reports**

1. Ana Margarida Ribeiro da Silva. Genotoxicidade dos microplásticos. Licenciatura em Bioquímica, UTAD, Vila Real, Portugal.
2. Ana Margarida Torres Pereira Faria. Regulação da diferenciação de macrófagos M2 através de RNA não codificante no cancro do endométrio. Licenciatura em Genética e Biotecnologia. UTAD, Vila Real, Portugal.
3. Cláudia Correia. Avaliação da qualidade nutricional de silagens de milho em seis explorações de vacas leiteiras. Licenciatura em Agronomia - Produção Animal, ESA/IPVC, Ponte de Lima, Portugal.
4. Daniela Torres Alves. Medicina transfusional em cães e gatos. Licenciatura em Enfermagem Veterinária, ESA/IPVC, Ponte de Lima, Portugal.
5. Gabriela Silva. Estudo da expressão imunohistoquímica do Snail/Slug na glândula mamária normal e neoplásica da cadela. Licenciatura em Bioquímica. UTAD, Vila Real, Portugal.

6. Inês Maria Santos Novais. Estudo da Infertilidade Masculina: stress oxidativo e os danos no DNA espermático. Licenciatura em Genética e Biotecnologia, UTAD, Vila Real, Portugal.
7. Júlio Manuel da Costa Alves Torres. Estudo da População de Linfócitos em Gengivostomatite Crónica Felina. Licenciatura em Bioquímica, UTAD, Vila Real, Portugal.
8. Marco Alexandre Nogueira Nunes. Macrófagos intratumorais: amigos ou inimigos Contribuição para o estudo do ambiente tumoral na mama de gata. Licenciatura em Bioquímica. UTAD, Vila Real, Portugal.
9. Maria Jorge Gonçalves. A Importância das Regiões Intrónicas nas Doenças Priónicas. Licenciatura em Genética e Biotecnologia. UTAD, Vila Real, Portugal.
10. Maria Valente Pereira Almeida e Silva. Doença Emaciante Crónica: caracterização da região codificante do gene Prnp em espécies de cervídeos de Portugal. Licenciatura em Genética e Biotecnologia. UTAD, Vila Real, Portugal.
11. Paula Maria Almeida de Oliveira Mendes. Microbiota nasal em humanos - Caracterização microbiológica e molecular. Licenciatura em Bioquímica. UTAD, Vila Real, Portugal.
12. Rafael Joaquim da Costa Magalhães. O que vive na mucosa nasal dos nossos cães? Caracterização microbiológica e molecular de isolados fúngicos. Licenciatura em Bioquímica, UTAD, Vila Real, Portugal. Sofia Alexandra Silva Rosa. Avaliação da proliferação pelo Ki67 em neoplasias do ovário. Licenciatura em Genética e Biotecnologia. UTAD, Vila Real, Portugal.
13. Sofia Alexandra Silva Rosa. Avaliação da proliferação pelo Ki67 em neoplasias do ovário. Licenciatura em Genética e Biotecnologia, UTAD, Vila Real, Portugal.
14. Vanessa Ferreira de Sousa. Comparação dos efeitos citotóxicos e genotóxicos de um pesticida em solução e encapsulado. Licenciatura em Genética e Biotecnologia, UTAD, Vila Real, Portugal.
15. Vítor Daniel Costa Fernandes. Maneio geral e reprodutivo em cavalos da raça Lusitana. Licenciatura em Agronomia - Produção Animal, ESA/IPVC, Ponte de Lima, Portugal.

## Organization of Events

The CECAV members collaborated in the organization of some scientific events which were held in Portugal (inside and outside UTAD). Events were also organized aiming at the non-scientific community (2 events).

CECAV researchers participated in the organization of the following events:

### **I Jornadas de Biotecnologia para as Ciências da Saúde.**

January 17,  
UTAD, Vila Real, Portugal.

### **Seminário de Obstetrícia e Neonatologia em Animais de Companhia.**

March 4,  
UTAD, Vila Real, Portugal.

### **Workshop: Valorização da lã de raças de ovinos autóctones: do velo ao fio,**

Septembre 16,  
UTAD, Vila Real, Portugal.

### **Seminário de Medicina Felina – Felinos domésticos. Seminário teórico-prático.**

Septembre 30,  
UTAD, Vila Real, Portugal.

**8ª Edição do curso: Exame Inicial de caça maior abatida em zonas de caça.** Duração de 16 horas (11 Teóricas e 5 Práticas) com acreditação interna pela UTAD (1 ECTS) e validado pela Direção Geral de Veterinária,

Outobre 2-3,  
Mirandela, Portugal.

**Jornadas de Ciências Veterinárias (Webinar)**, Ciências Veterinárias, todo um mundo a explorar! 5ª Semana das Ciências da Vida e da Terra (Terra.ECO),  
Decembre 14,  
ESA-IPVC, Portugal.