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EDUCATION

❖ Ph.D. IN FOOD SCIENCE AND TECHNOLOGY

- Dissertation title: “*The influence of the ante mortem conditions and the slaughter technology on meat quality pork*”. University of Murcia, Spain. 07/19/2002. Directors: M.D. Garrido and S. Bañón. University of Murcia.
- Areas: Animal protection; Pig slaughtering, Immobilization systems; Damage carcass; Influence of stunning and chilling systems on meat and carcass quality.
- PhD. Program Course Work in Food Science and Technology. University of Murcia. Spain, 1993-1995. SUMA CUM LAUDE.

❖ DOCTOR IN VETERINARY MEDICINE (D.V.M.)

- University of Murcia. Spain. 12/17/1992.
- Main areas of knowledge: Animal Science, including Anatomy, Physiology, Microbiology, Immunology, Genetic, Nutrition, Pathology, Feeding, Animal Production, Clinic, and Public Health. Complementary knowledge in Plant Production and Agriculture.

❖ BACHELOR OF BIOLOGICAL SCIENCES

- University of Murcia. Spain. 11/03/1988.
- Main areas of knowledge: Physic and Biology, Chemistry and Biochemistry, General Botanic and Toxicology, General Microbiology, Zoology, Cytology and Histology, Genetics, Geology, Animal and Vegetal Physiology, Food Hygiene and Microbiology, Biophysics, Instrumental Analysis and Basic Operations,

PROFESSIONAL EXPERIENCE

RESEARCH EXPERIENCE

1. **Postdoctoral Research Associate.** University of Kentucky. EE.UU. 2007-2008
2. **Postdoctoral Scholar.** University of Kentucky. EE.UU. 2006-2007
3. **Adjunct Research Professor.** University of Murcia. Spain. 2003-2005. Investigation in Food Technology.
4. **Postdoctoral Research Assistant.** University of Murcia. 2003. Development and design of natural creams and soups cooked and aseptic packed ready to consumption
5. **Predoctoral Research Assistant.** University of Miguel Hernández of Elche. 2001-2002. Development of microbiological and parasitological control of rice samples conserved by means of conventional methods and applying novel technical like the ionization with electron beam
6. **Adjunct Research Professor.** University of Miguel Hernández of Elche. Spain. 1999-2000. Investigation in Food Technology.
7. **Predoctoral Research Assistant.** University of Murcia. 1996-1997. Development of meat quality parameters to cured ham production
8. **Graduate Research Assistant.** University of Murcia. Spain. 1994-2002.
9. **Undergraduate Research Assistant.** Histology and Pathologic Anatomy Department. University of Murcia. Spain. 1989-1990.
10. **Undergraduate Lab Assistant.** Food Technology Department. University of Murcia. Spain. 1991-1992.
11. **Undergraduate Lab Assistant.** Anatomy II and Applied Anatomy Department. University of Murcia. Spain. 1989-1990.
12. **Undergraduate Lab Assistant.** Embryology and Anatomy I Department. University of Murcia. Spain. 1988-1989.

TEACHING EXPERIENCE

1. **Adjunct Professor. University of Murcia. 2003-2005**
 - Bachelor of Veterinary. Course: *Food Technology* (old and new educative program)
 - Bachelor of Science and Food Technology. 2° Course: *Meat Industry*.
2. **Postgraduate Professor. Public Administration School. June, 2-23 2005**
 - Graduate Personal of Administration. Course: *Initiation to the sensorial analysis in the agricultural investigation (AF 54)*.
3. **Master Professor. University of Murcia. 2005-2006**
 - I Master in Food Technology, Nutrition and Health. Course 2005-06; *Food Technology*
4. **Adjunct Professor. University of Miguel Hernández of Elche. 1999-2000**
 - Bachelor of Food Technology. 2° Course: Microbiological Control of Foods
 - Bachelor of Agronomist Engineering. 5° Course: Zootechnique Microbiology
 - PhD program course work in Food Science.
5. **High School Professor. Education and University Government of Murcia. 2003 - 2004**
 - Bachelor of Dietary. Formative Cycle of Health. 1° and 2° Course.
 - Bachelor of Pedagogic Aptitude Course. Course; *Service Technology*

EXPERIENCE IN ORGANIZATION OF EVENTS AND COMMITTEE WORK

1. **Organization of I+D activities.**
 - Technological day on meat and milk of goat. University of Murcia. April 2002
 - New technologies and education perspectives. Universidad de Murcia, Europel (Marzo 2003)
2. **Management of I+D activities.**
 - Meat quality parameters to cured ham production. University of Murcia. 1996-1997
 - Development and design of natural creams and soups cooked and aseptic packed ready to consumption. University of Murcia. 2003

FOOD INDUSTRY EXPERIENCE

1. **El Pozo Alimentación S.A.** Predoctoral Research. Analysis and Quality Management in Meat Industry, Murcia, Spain, 1996-1997.
2. **García Carrión S.A.** Postdoctoral Research. Laboratory controls for Analysis and Quality Management in Vegetable Industry, Murcia, Spain, 2003.
3. **Cítricos del Andarax S.A.** Postdoctoral Research. Laboratory controls for Analysis and Quality Management in Vegetable Industry, Almería, Spain, 2003.

GOVERNMENT ADMINISTRATION EXPERIENCE

1. **Veterinary of Health Area.** Regional Administration of Valencia Government. Spain. 1999 (1 month)
2. **Health Veterinary Inspector.** Regional Administration of Valencia Government. Spain. 1999 (2,5 month)
3. **Health Veterinary Inspector.** Regional Administration of Valencia Government. Spain. 1999-2000 (21 days)
4. **Agricultural Veterinary Inspector.** Regional Administration of Murcia Government. Spain. 2000 (6 month)
5. **Veterinary of Health Area.** Regional Administration of Valencia Government. Spain. 2001 (23 days)
6. **Health Veterinary Inspector.** Regional Administration of Murcia Government. Spain. 2002 (2 month)
7. **Health Veterinary Inspector.** Regional Administration of Murcia Government. Spain. 2003 (1 month)
8. **Agricultural Veterinary Inspector.** Regional Administration of Murcia Government. Spain. 2005 (6 month)
9. **Interior Commerce Inspector.** Regional Administration of Murcia Government. Spain. 2005-2006 (3 months)

FELLOWSHIPS AND AWARDS

1. **Awarded a Two-Year Research Grant.** Kentucky Science and Engineering Foundation. \$99,996. 2007-2008
2. **Awarded a One-Year Research Grant.** Fundación Seneca. \$27,500. 2006-2007.
3. **Awarded Research Project Fellowship.** University of Murcia, Spain, 2003.
4. **Awarded Honorific Research.** University of Miguel Hernández of Elche, Spain. Academic course 2001-2002
5. **Awarded Research Project Fellowship.** University of Miguel Hernández of Elche, Spain, 2001
6. **Awarded Research Project Fellowship.** University of Murcia, Spain, 1996-1997
7. **Awarded Intercampus Fellowship.** University of Murcia, Spain. 1995.
8. **Awarded Rural Veterinary Grant.** University of Murcia, Spain. 1991.

RESEARCH PROJECTS AS Co-PI or COLLABORATOR

1. **Estudio y definición de la calidad de la carne en las principales estirpes genéticas porcinas en la Región de Murcia.** Spanish Ministry of Science and Technology (PTR93-0055). 1993-1995
2. **Ventajas de la administración de antioxidantes naturales en la calidad de la carne de cerdo.** Spanish Ministry of Science and Technology (ALI96-1124-CO2-02). 1996-1999
3. **Contrastación de metodologías de evaluación de la calidad de la carne de cerdo (PSE, DFD): implicación a nivel de conservabilidad en diferentes condiciones de envasado.** Spanish Ministry of Science and Technology (HP1997-0023). 1998-1999
4. **Study of a process for the production of superior quality juices.** European Comisión CRAFT (Brite Euram II) 1995-1996
5. **Process and product innovation for the citrus industry.** European Comisión. AIR 2593-1335. 1994-1997
6. **Acciones tecnológicas de control de calidad e higiene de alimentos de la Región de Murcia.** Health Administration of Murcia Government (n° 912909). 1991-1992
7. **Nuevas tecnologías en la elaboración de queso de cabra Murciano-Granadina: Aspectos enzimáticos y tecnológicos.** Agricultural Administration of Murcia Government. 1997-1998
8. **Japanese quince (*Chaenomele japonica*). A new european fruit crop for production of novel juice, flavour and fibre.** Comisión Europea (FAIR5-CT97-3894). 1998-2001
9. **El ablandamiento del albaricoque enlatado. Estudio del problema tecnológico para el planteamiento de posibles soluciones.** Spanish Ministry of Science and Technology (ALI98-0523). 1998-1999
10. **Microbiological and parasitological control of rice samples conserved by means of conventional methods and applying novel technical like the ionization with electron beam.** Spanish Ministry of Science and Technology (Feder 1FD1997-1005-C04-03). 1999-2001
11. **Meat quality parameters to cured ham production.** El Pozo Alimentación and University of Murcia. 1996-1997
12. **Development and design of natural creams and soups cooked and aseptic packed ready to consumption.** García Carrión S.A., Cítricos del Andarax and University of Murcia. 2003
13. **Development of an optical backscatter sensor technology for monitoring and controlling meat emulsification during the chopping process.** Kentucky Science and Engineering Foundation. University of Kentucky. 2007-2008

STAYS IN A HOST INSTITUTION (not in Spain)

1. **Perú.** Faculty of Food Engineering Industry. National University Jorge Basadre Grohmann, Tacna. 1 month. 1995.
2. **EE.UU.** Departments of Biosystems and Agricultural Engineering and Animal and Food Sciences. University of Kentucky. 2006-2007
3. **EE.UU.** Departments of Biosystems and Agricultural Engineering and Animal and Food Sciences. University of Kentucky. 2007-2008

SCIENTIFIC PRODUCTION

ARTICLES

1. **Álvarez, D.,** Castillo, M., Garrido, M.D., Bañón, S., Nieto, G., Díaz, P, Payne, F.A. 2007. Efecto de la composición sobre las propiedades ópticas y tecnológicas de la emulsión de carne de cerdo. *Anales de Veterinaria de Murcia*. In press
2. **Álvarez, D.,** Castillo, M., Payne, F.A., Garrido, M.D., Bañón, S., Xiong, Y.L. 2007. Prediction of meat emulsion stability using reflection photometry. *Journal of Food Engineering*. In press
3. Castillo, M., **Álvarez, D.,** Nieto, G., Payne, F.A. 2007. Sensores ópticos para la monitorización de procesos en la industria quesera. *Acta/CL, Asociación de Científicos y Tecnólogos de Alimentos de Castilla y León*. N 29 pp. 10-16
4. Valero, M., Sarrías, J.A., **Álvarez, D.,** Salmerón, M.C. 2006. Modeling the influence of electron beam irradiation on the heat resistance of *Bacillus cereus* spores. *Food Microbiology* 23, 367-371.
5. **Álvarez, D.,** Garrido, M.D., Bañón, S., Laencina, J. 2005. Bienestar animal y calidad de la canal porcina según el sistema de anestesia. *Anales de Veterinaria de Murcia*. Vol. 21. In press
6. Bañón, S., Granados, M.V., **Álvarez, D.,** Cayuela, J.M., Gil, M.D., Garrido, M.D. 2002. Calidad de la canal y de la carne procedente de hembras Large White x Landrace y machos híbridos Pietrain. *Eurocarne*. Pp: 93-99

- Bañón, S., **Álvarez, D.**, Pedauy, J., Laencina, J., Garrido, M.D. 1997. Mejora del jamón curado mediante el control de la materia prima. *Cárnica*. Pp: 67-70
- Bañón, S., Granados, M.V., **Álvarez, D.**, Garrido, M.D. 1997. Efecto PSE en el jamón curado. *Eurocarne*. Pp: 27-34

BOOKS

- Álvarez, D.** 2002. The influence of the ante mortem conditions and the slaughter technology on meat quality pork. PhD Thesis. Ed Servicio de Publicaciones de la Universidad de Murcia. ISBN: 84-8371-360-8 (CD-r format)
- Laencina, J., Garrido, M.D., Pedauy, J., López, M.B., Bañón, S., Granados, M.V., Seguí, J., **Álvarez, D.** 1996. Estudio comparado de la calidad de la canal y de la carne porcina en la Región de Murcia. Consejería de Medio Ambiente, Agricultura y Agua. Comunidad Autónoma de la Región de Murcia. ISBN: 84-87154-51-4.

BOOK CHAPTERS

- Garrido, M.D., Bañón, S., **Álvarez, D.** 2005. Medida del pH. Spanish Ministry of Science and Technology in “Estandarización de las metodologías para evaluar la calidad del producto (animal vivo, canal, carne y grasa) en los rumiantes”. ISBN: 84-7498-509-9

FULL-TEXT CONFERENCE PROCEEDINGS

- Álvarez, D.**, Bañón, S., Ferrandini, E., Laencina, J., Garrido, M.D. 2003. Efecto de las condiciones del oreo rápido sobre la temperatura y la calidad de la carne porcina. Editores: Universidad Miguel Hernández de Elche, en “II Congreso Nacional de Ciencia y Tecnología de los Alimentos”. Orihuela, Spain. ISBN: 84-95893-76-2.
- Ferrandini, E., Castillo, M., Price, A., **Álvarez, D.**, López, M.B. 2003. Características de la leche de cabra Murciano-Granadina en la Región de Murcia. Editores: Universidad Miguel Hernández de Elche, en “II Congreso Nacional de Ciencia y Tecnología de los Alimentos” Orihuela, Spain. ISBN: 84-95893-75-4.
- Álvarez, D.**, Garrido, M.D., Bañón, S., Granados, M.V., Laencina, J. 2002. Influencia del tratamiento frigorífico de las canales de cerdo en la calidad de la carne. Eds. López, A., Esnoz, A., Artés, A. in “Avances en Ciencias y Técnicas de Frío”, I Congreso Español de Ciencias y Técnicas del Frío. Cartagena, Spain. ISBN: 84-95781-17-4
- Cayuela, J.M., Gil, M.D., Bañón, S., **Álvarez, D.**, Garrido, M.D. 2002. Effect of dietary vitamin E supplementation and packaging methods on oxidative stability in raw pork meat. 48th Int. Congress of Meat Science and Technology. Roma
- Garrido, M.D., Cayuela, J.M., Gil, M.D., Kerry, J., **Álvarez, D.**, Costa, E., Laencina, J. 2001. Efecto del cocinado y almacenamiento sobre la oxidación lipídica en carne de cerdo suplementada con vitamina E y catequina de Té. I Congreso Nacional de Ciencia y Tecnología de los Alimentos. Granada, España
- Pedauy, J., Granados, M. V., Bañón, S., **Álvarez, D.**, Laencina, J., Garrido, MD. 1998. Characteristics of carcasses and meat according to S-EUROP classification in the Region of Murcia. *Basis of the Quality of Typical Mediterranean Animal Products*. Pp: 471-474
- Garrido, M. D., Granados, M. V., **Álvarez, D.**, Bañón, S., Cayuela, J.M., Laencina, J. Pork quality of pig crossbreeds Large White, Landrace, Hampshire, Pietrain and Duroc. 44th International Congress of Meat Science and Technology. Congress Proceedings “Meat Consumption and Culture”. Barcelona, España. 1998

ABSTRACTS TO INTERNATIONAL MEETINGS AND CONFERENCES (Posters and oral presentations)

- Álvarez, D.**, R.B. Cox., Castillo, M., Payne, F.A., Xiong, Y.L., Blanchard, S.P. Development of a novel fiber optic sensor prototype to optimize meat emulsion quality. International Food and Technology Congress. Poster. July 28 – August 1, 2007. Chicago, Illinois. USA
- Nieto, G., Castillo, M., Xiong, Y.L., Wang, L.L., Blanchard, S.P., Payne, F.A., Bañón, S., Garrido, M.D., **Álvarez, D.** The effect of fat and hydrolyzed potato protein on quality of finely comminuted meat emulsions. International Food and Technology Congress. Poster. July 28 – August 1, 2007. Chicago, Illinois. USA.
- Álvarez, D.**, Payne, F.A., Castillo, M., Xiong, Y.L. Application of backscatter light extinction to determine the stability of beef emulsion with different fat/lean ratios. American Society of Agricultural and Biological Engineers. Annual International Meeting. Poster. June 17-20, 2007. Minneapolis, Minnesota. USA.
- Álvarez, D.**, Castillo, M., Garrido, M.D., Bañón, S., Nieto, G., Díaz, P., Payne, F.A., Xiong, Y.L. Influence of fat to lean ratio and starch concentration on optical properties, quality and yield of hot dogs. 4th Annual International Poster Session. February 20-22, 2007. Lexington, Kentucky. USA.
- Nieto, G., Castillo, M., Xiong, Y.L., Payne, F.A., **Álvarez, D.**, Wang, L., Garrido, M.D., Bañón, S. The influence of fat and hydrolyzed potato protein on meat quality: correlation between color properties and quality of emulsions. 4th Annual International Poster Session. February 20-22, 2007. Lexington, Kentucky. USA.

6. **Álvarez, D.**, Garrido, M. D., Bañón, S., Fagan, C.C., Xiong, Y., Payne, F., Castillo, M. Application of reflection photometry for determining meat emulsion stability. International Food and Technology Congress. Poster. June 24-28, 2006. Orlando, Florida. USA.
7. Granados, M.V., Pedauyú, J., **Álvarez, D.**, Bañón, S., Garrido, M. D. Pork meat quality: intramuscular fat and lipid backfat profile. 42nd International Congress of Meat Science and Technology. Poster. Lillehammer, Norway. 1996
8. Pedauyú, J., Granados, M. V., Bañón, S., **Álvarez, D.**, Laencina, J., Garrido, M. D. Características de la canal y de la carne según la clasificación S-EUROP en la Región de Murcia. Symposium Internacional EAAP-CIHEAM-FAO in collaboration with CE-DV VI, "Los fundamentos de la calidad de los productos típicos mediterráneos de origen animal". Poster. Zafra, Badajoz – España. 1996

ABSTRACTS TO SPANISH MEETINGS AND CONFERENCES (Posters and oral presentations)

1. **Álvarez, D.**, Garrido, M.D., Bañón, S., Laencina, J. 2004. Incidencia de los sistemas de aturrido en porcino sobre el bienestar animal y la calidad de la canal. III Congreso Español de Ingeniería de Alimentos. Poster. Pamplona, España
2. Ferrandini, E., Castillo, M., Price, A., **Alvarez, D.**, Mansilla, S., López, M. B. 2003. Características de la leche de cabra Murciano-Granadina en la Región de Murcia. II Congreso Nacional de Ciencia y Tecnología de los Alimentos. Poster. Orihuela, Spain
3. **Álvarez, D.**, Bañón, S., Ferrandini, E., Laencina, J., Garrido, M.D. 2003. Efecto de las condiciones del oreo rápido sobre la temperatura y la calidad de la carne porcina. II Congreso Nacional de Ciencia y Tecnología de los Alimentos. Poster. Orihuela, Spain.
4. **Álvarez, D.**, Garrido, M.D., Bañón, S. Granados, M.V. Laencina, J. 2002. Influencia del tratamiento frigorífico de las canales de cerdo en la calidad de la carne. Avances en Ciencias y Técnicas de Frío. I Congreso Español de Ciencias y Técnicas del Frío. Poster. Cartagena, Spain.
5. **Álvarez, D.**, Bañón, S., Andreu, C.D., Laencina, J., Garrido, M.D. 2002. On line measures for quickly estimation of low pork quality meats Simposio sobre Tecnologías Emergentes de Interés para la Industria Alimentaria. Poster. Madrid, España.
6. Garrido, M.D., Cayuela, J.M., Gil, M.D., Kerry, J., **Álvarez, D.**, Costa, E., Laencina, J. 2001. Efecto del cocinado y almacenamiento sobre la oxidación lipídica en carne de cerdo suplementada con vitamina E y catequina de Té. I Congreso Nacional de Ciencia y Tecnología de los Alimentos. Poster. Granada, España.

SEMINARS AND CONFERENCES

1. **Invited Seminar.** Slaughter and handling of cattle. Slaughter technology and handling of cattle. Incidence of slaughter and carcass handling on meat quality. Faculty of Veterinary, University of Murcia May 2001
2. **Invited Seminar.** Bacteriología alimentaria. Producción Vegetal y Microbiología, División de Microbiología. University Miguel Hernández of Elche. May 2000 and June 2001
3. **Invited Seminar.** Calidad de la carne de cerdo y tecnología de los productos derivados. University of Murcia. May 8, 1997
4. **Invited Seminar.** Slaughter and handling of cattle. Slaughter technology and handling of cattle. Incidence of slaughter and carcass handling on meat quality. Faculty of Veterinary, University of Murcia May 1997
5. **Invited lecture at conference.** Plans of study in Spain and structuring of the University in Spain. Faculty of Food Engineering Industry. National University Jorge Basadre Grohmann. Tacna, Perú. September 28, 1995.
6. **Invited lecture at conference.** Study of hematic pigments composition in pork meat. Faculty of Food Engineering Industry. National University Jorge Basadre Grohmann. Tacna, Perú. September 28, 1995.
7. **Invited Seminar.** Enzimas proteolíticas en la maduración de la carne. Catepsinas y Calpainas. University of Murcia. June 6, 1995.

INSTITUCIONAL MEMBERSHIP

1. Member of Institute of Food Technologists since April 2006