

## Curriculum Vitae

Family name: **Gai** First name: **Francesco** Date of birth: 03/11/1976

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Nationality: Italian

### Education:

July 2000. **MSc in Biology**, University of Turin, Italy.

January 2006. **Ph Degree in Animal Productions**, Dept. Animal production, Epidemiology and ecology, Faculty of Veterinary Medicine -University of Turin, Italy, discussing a thesis titled : “**Utilisation of plant protein sources and their effects on the digestive enzymes of fish species reared in aquaculture**”.

### Professional Experience Record

September 2000-2001 – Trainee at the **Institute of Sciences of Food Production (ISPA)–National Research Council (CNR), Turin, Italy.**

**June 2002 – June 2005.** Contract researcher **ISPA–CNR, Turin, Italy** working in the frame of several aquaculture research projects financed by the Italian Ministry of Agriculture.

September- November 2004, trainee at the **Institute Nationale de la Recherche Agronomique (INRA) of Saint Pée sur Nivelle, France**, financed by a grant in the frame of the CNR Short-Term Mobility 2004 programme.

**May 2005**, trainee at the **Institut Français de Recherche pour l’Exploitation de la Mer (IFREMER), of Plouzané, France**, financed by a grant in the frame of the CNR Short-Term Mobility 2005 programme.

**February 2007 – August 2007.** Contract researcher in collaboration with the Dept of Science, Biological and Environmental Technologies (DiSTeBA), University of Lecce.

**October 2007- February 2008.** Contract researcher at **ISPA–CNR, Turin, Italy** working in the research project “Qualifish-Systems of quality and certification: an integrated approach for the aquaculture production valorization”.

**March 2008- November 2009:** Contract researcher at the Dept. Animal Sciences, Faculty of Agronomy, University of Turin on the research project titled: “Effects of dietary tannins in monogastric nutrition and evaluation of nitrogen excretion”.

**December 2009-** till now Permanent researcher position at ISPA-CNR (**Institute of Sciences of Food Production (ISPA)–Italian National Research Council (CNR).**)

**Author of 38 papers** on ISI international journals and 4 chapters published on international books.

### Specific experience

Technical expertise. **Animal biochemistry** assays for the detection of enzymatic activities of digestive enzymes (total proteases, trypsin and chymotrypsin, pepsin, amylase and lipase) in different tissues (stomach, intestine and liver) by spectrophotometer.

**Analytical chemistry and biochemistry:** nutritive value (total N, crude fiber, ash, fat) and *in vivo* digestibility by inert markers (chromic oxide, celite) of feedstuffs.

**Foods quality** in different samples (meat, fish, cheese): determination of total amino acids profile by HPLC; saturated, mono and polyunsaturated fatty acids by Gas-Chromatograph capillary columns. Determination of the anti-oxydant power by *in vitro* test as TBARS, ABTS e DPPH.

**Molecular biology:** knowledges of PCR (Polymerase Chain Reaction) and RT-PCR (Real Time-Polymerase Chain Reaction) techniques of the gene expression involved in the protein, energy and lipid metabolism.

### Other skills.

Member of Editorial board: International Aquatic Research.

Teacher at the Faculty of Veterinary Medicine -University of Turin, Italy (academic year 2010/2011).

Supervisor of PhD thesis on Veterinary Sciences; Tutor of degree thesis in Aquaculture.

Reviewer of several International Scientific Journals: Animal Feed Science and Technology, Animal Production Science, Aquaculture, Aquaculture International, Environmental Science and Pollution Research, European Food Research and Technology, Food Bioscience, Italian Journal of Animal Science, Journal of Aquatic Food Product Technology, Journal of Animal Science, Journal of Food Biochemistry, International Aquatic Research, Polish Journal of Food and Nutrition Sciences.

### Language skills.

English. Good level in both spoken and written language.

French: Basic knowledges of the spoken and written language, learned by a course at the Centre Culturel Français of Turin.

### Selected Publications/Articles (ISI)

1. PEIRETTI P.G., **GAI F.**, ALONZI S., BATTELLI G., TASSONE S. (2015) Characterisation of Alpine highland pastures located at different altitudes: forage evaluation, chemical composition, *in vitro* digestibility, fatty acid and terpene contents. PLANT BIOSYSTEMS, (in press) doi: 10.1080/11263504.2015.1064044
2. P.G. PEIRETTI, **F. GAI**, A. BRUGIAPAGLIA, P. P. MUSSA, G. MEINERİ (2015) Fresh meat quality of pigs fed diets with different fatty acid profiles and supplemented with red wine solids. FOOD SCIENCE AND TECHNOLOGY, (in press) doi: 10.1590/1678-457X.6653
3. **GAI, F.**, ORTOFFI, M., GIANCOTTI, V., MEDANA, C., PEIRETTI, P.G. (2015) Effect of red grape pomace extract on the shelf life of refrigerated rainbow trout (*Oncorhynchus mykiss*) minced muscle. JOURNAL OF AQUATIC FOOD PRODUCT TECHNOLOGY, vol. 24(5); p. 468-480.
4. B. SICURO, M. PICCINNO, F. DAPRÀ, **F. GAI**, S. VILELLA. (2015) Utilization of rice protein concentrate in siberian sturgeon (*Acipenser baerii* Brandt) nutrition. TURKISH JOURNAL OF FISHERIES AND AQUATIC SCIENCES vol. 15; p. 313-319.
5. G. MARICCHIOLO, L. CACCAMO, M. MANCUSO, G. M. CUSIMANO, **F. GAI**, M. GENOVESE, A. GHONIMY, L. GENOVESE (2015) *Saccharomyces cerevisiae* var. *boulardii* preserves the integrity of intestinal mucosa in gilthead seabream, *Sparus aurata* subjected to a bacterial challenge with *Vibrio anguillarum*. AQUACULTURE RESEARCH (in press), doi:10.1111/are.12862
6. M. BELFORTI, **F. GAI**, C. LUSSIANA, M. RENNA, V. MALFATTO, L. ROTOLO, M. DE MARCO, S. DABBOU, A. SCHIAVONE, I. ZOCCARATO, L. GASCO, (2015) *Tenebrio molitor* meal in rainbow trout (*Oncorhynchus mykiss*) diets: effects on animal performance, nutrient digestibility and chemical composition of fillets. ITALIAN JOURNAL OF ANIMAL SCIENCE (in press).
7. A. KOVITVADHI, L. GASCO, I. FERROCINO, L. ROTOLO, S. DABBOU, V. MALFATTO, **F. GAI**, P. G. PEIRETTI, M. FALZONE, C. VIGNOLINI, L. COCOLIN AND I. ZOCCARATO (2015) Effect of purple loose-strife (*Lythrum salicaria*) diet supplementation in rabbit nutrition on performances, digestibility, health and meat quality. ANIMAL (in press).

8. M. DE MARCO, S. MARTÍNEZ, F. HERNANDEZ, J. MADRID, **F. GAI** , L. ROTOLO, M. BELFORTI, D. BERGERO, H. KATZ, S. DABBOU, A. KOVITVADHI, I. ZOCCARATO, L. GASCO, A. SCHIAVONE (2015) Nutritional value of two insect larval meals (*Tenebrio molitor* and *Hermetia illucens*) for broiler chickens: apparent nutrient digestibility, apparent ileal amino acid digestibility and apparent metabolisable energy. ANIMAL FEED SCIENCE AND TECHNOLOGY (in press).
9. PEIRETTI, P. G., **GAI, F.**, (2015). Fruit and Pomace Extracts: Applications to Improve the Safety and Quality of Meat Products. In: Jason P. Owen (ed.). Fruit and Pomace Extracts: Biological Activity, Potential Applications and Beneficial Health Effect, p. 1-28, Nova Science Publishers, Inc., HAUPPAUGE NY 11788-3619. ISBN: 978-1-63482-510-8
10. **GAI, F.**, PEIRETTI, P. G., (2015). Fruit and Pomace Extracts: Applications to Improve the Safety and Quality of Fish Products. In: Jason P. Owen (ed.). Fruit and Pomace Extracts: Biological Activity, Potential Applications and Beneficial Health Effect, p. 53-68, Nova Science Publishers, Inc., HAUPPAUGE NY 11788-3619. ISBN: 978-1-63482-510-8
11. PEIRETTI, P.G., TASSONE, S., **GAI, F.**, GASCO, L., MASOERO, G. (2014) Rabbit feces as feed for ruminants and as an energy source. ANIMALS, vol. 4; p. 755-766.
12. DABBOU, S., GASCO, L., **GAI, F.**, (...), HELAL, A.N., PEIRETTI, P.G. (2014) Dried artichoke bracts in rabbits nutrition: Effects on the carcass characteristics, meat quality and fatty-acid composition. ANIMAL, vol. 8; p. 1547-1553.
13. DABBOU, S., PEIRETTI, P.G., **GAI, F.**, (...), ZOCCARATO, I., GASCO, L. (2014) Dried artichoke bracts in rabbit nutrition: Effects on performance and apparent digestibility. JOURNAL OF FOOD, AGRICULTURE AND ENVIRONMENT, vol. 12; p. 443-446.
14. ROTOLO, L., **GAI, F.**, PEIRETTI, P.G., ORTOFFI, M., ZOCCARATO, I., GASCO, L. (2014) Live yeast (*Saccharomyces cerevisiae* var. *boulardii*) supplementation in fattening rabbit diet: Effect on productive performance and meat quality. LIVESTOCK SCIENCE, vol. 178; p. 178-184.
15. GASCO, L., **GAI, F.**, ROTOLO, L., PARISI, G., (2014) Effects of different slaughtering methods on rigor mortis development and flesh quality of tench (*Tinca tinca*). JOURNAL OF APPLIED ICHTHYOLOGY, vol. 30; p. 58-63.
16. **GAI, F.**, GASCO, L., ORTOFFI, M., GONZÁLES-RODRÍGUEZ, A., PARISI, G., (2014) Effects of green tea natural extract on quality parameters and lipid oxidation during storage of tench (*Tinca tinca*) fillets. JOURNAL OF APPLIED ICHTHYOLOGY, vol. 30; p. 64-71.
17. ROTOLO, L., **GAI, F.**, NICOLA, S., ZOCCARATO, I., BRUGIAPAGLIA, A., GASCO, L. Dietary supplementation of oregano and sage dried leaves on performances and meat quality of rabbits. JOURNAL OF INTEGRATIVE AGRICULTURE, vol. 12; p.1937-1945.
18. PEIRETTI, P.G., **GAI, F.**, ROTOLO, L., BRUGIAPAGLIA, A., GASCO, L. (2013) Effects of tomato pomace supplementation on carcass characteristics and meat quality of fattening rabbits. MEAT SCIENCE, vol. 95; p. 345-351.
19. PEIRETTI, P.G., GAI, F., TASSONE, S. (2013) Fatty acid profile and nutritive value of quinoa (*Chenopodium quinoa* Willd.) seeds and plants at different growth stages. ANIMAL FEED SCIENCE AND TECHNOLOGY, vol. 183; p. 56-61.
20. **GAI F.**, GASCO L., DAPRA' F., PALMEGIANO G.B., SICURO B.(2012) Enzymatic and Histological Evaluations of Gut and Liver in Rainbow Trout, *Oncorhynchus mykiss*, Fed with

21. BONO G, **GAI F.**, PEIRETTI P.G, BADALUCCO C, BRUGIAPAGLIA A, SIRAGUSA G, PALMEGIANO G.B (2012). Chemical and nutritional characterization of the Central Mediterranean Giant red shrimp (*Aristaeomorpha foliacea*): influence of trophic and geographical factors on flesh quality. FOOD CHEMISTRY, ISSN: 0308-8146, doi: 10.1016/j.foodchem.2011.07.004
22. I. ZOCCARATO, L. GASCO, **GAI F.**, L. ROTOLO, A. BRUGIAPAGLIA, S. NICOLA (2011). Effects of feed supplementation with dried leaves of sage (*Salvia Officinalis*) on performances and meat quality traits in rabbits. ITALIAN JOURNAL OF ANIMAL SCIENCE, vol. 10, supplement 1; p. 62-62, ISSN: 1594-4077
23. B. SICURO, **GAI F.**, F. DAPRÀ, G.B PALMEGIANO (2012). Hybrid sturgeon 'AL' (*Acipenser naccarii x Acipenser baeri*) diets: the use of alternative plant protein sources. AQUACULTURE RESEARCH, ISSN: 1355-557X, 43, 161–166. doi: 10.1111/j.1365-2109.2011.02812.x
24. PEIRETTI, P.G., GASCO, L., BRUGIAPAGLIA, A., **GAI, F.** (2011) Effects of perilla (*Perilla frutescens* L.) seeds supplementation on performance, carcass characteristics, meat quality and fatty acid composition of rabbits LIVESTOCK SCIENCE 138 (1-3):118-124
25. B. SICURO, S. BARBERA, F. DAPRÀ, **F.GAI**, L. GASCO, G. PAGLIALONGA, G.B. PALMEGIANO & S. VILELLA (2010) The olive oil by-product in rainbow trout *Onchorynchus mykiss* (Walbaum) farming: productive results and quality of the product. AQUACULTURE RESEARCH, 41: e475-e486, DOI:10.1111/j.1365-2109.2010.02514.x
26. B. SICURO, F. DAPRÀ, **F. GAI**, G.B. PALMEGIANO, R. SCHIAVONE, L. ZILLI AND S. VILELLA (2010). Olive oil by-product as a natural antioxidant in gilthead sea bream (*Sparus aurata*) nutrition. AQUACULTURE INTERNATIONAL, 18:511-522, DOI 10.1007/s10499-009-9262-6
27. L. GASCO, **F. GAI**, C. LUSSIANA, R. LO PRESTI, V. MALFATTO, F. DAPRÀ, I. ZOCCARATO (2010). Morphometry, slaughtering performances, chemical and fatty acid composition of the protected designation of origin (PDO) "Golden hump tench of Poirino highland" product. REVIEWS IN FISH BIOLOGY AND FISHERIES, 20(3): 357-365 DOI 10.1007/s11160-009-9141-2
28. B. SICURO, P. BADINO, F. DAPRÀ, **F. GAI**, M. GALLONI, R. ODORE, G.B. PALMEGIANO, E. MACCHI (2010). Physiological effects of natural olive oil antioxidants utilization in rainbow trout (*Onchorynchus mykiss*) feeding. AQUACULTURE INTERNATIONAL, 18:415-431. DOI: 10.1007/s10499-009-9254-6
29. H.W. LIU, **F. GAI**, L. GASCO, A. BRUGIAPAGLIA, C. LUSSIANA, KJ GUO, JM TONG, I. ZOCCARATO (2009) Effects of chestnut tannins on carcass characteristics, meat quality, lipid oxidation and fatty acid composition of rabbits. MEAT SCIENCE, 83 678–683. DOI:10.1016/j.meatsci.2009.08.003
30. P.G. PEIRETTI, **F. GAI** (2009). Fatty acid and nutritive quality of chia (*Salvia hispanica* L.) seeds and plant during growth. ANIMAL FEED SCIENCE AND TECHNOLOGY, vol. 148; p. 267-275, ISSN: 0377-8401, doi: 10.1016/j.anifeeds.2008.04.006
31. F. DAPRÀ, **F. GAI**, M.T. COSTANZO, G. MARICCHIOLO, V. MICALE, B. SICURO, G. CARUSO, L. GENOVESE, GB PALMEGIANO (2009). Rice protein concentrate meal as a potential dietary ingredient in practical diets for blackspot seabream (*Pagellus bogaraveo*,

Brunnich): histological and enzymatic investigation. JOURNAL OF FISH BIOLOGY, 74; 773-789, ISSN: 0022-1112, doi: 10.1111/j.1095-8649.2008.02157.x

32. G.B. PALMEGIANO, **F. GAI**, F. DAPRÀ, L. GASCO, M. PAZZAGLIA, P.G. PEIRETTI. (2008) Effects of Spirulina and plant oil on the growth and lipid traits of white sturgeon (*Acipenser transmontanus*) fingerlings. AQUACULTURE RESEARCH, 39, 587-595.
33. G.B. PALMEGIANO, M.T. COSTANZO, F. DAPRÀ, **F. GAI**, M.G. GALLETTA, G. MARICCHIOLO, V. MICALE, P.G. PEIRETTI, L. GENOVESE. (2007) Rice protein concentrate meal as potential dietary ingredient in practical diets for blackspot seabream (*Pagellus bogaraveo*). JOURNAL OF ANIMAL PHYSIOLOGY AND ANIMAL NUTRITION, 91, 235-239.
34. P.G. PEIRETTI, **F. GAI**. (2006) Chemical composition, nutritive value, fatty acid and amino acid contents of *Galega officinalis* L. during its growth stage and in regrowth. ANIMAL FEED SCIENCE AND TECHNOLOGY, 130, 3/4: 257-267.
35. G.B. PALMEGIANO, F. DAPRÀ, G. FORNERIS, , **F. GAI**, L. GASCO, K. GUO, P.G. PEIRETTI, B. SICURO, I. ZOCCARATO. (2006) Rice protein concentrate meal as a potential ingredient in practical diets for rainbow trout (*Oncorhynchus mykiss*). AQUACULTURE, 258: 357-367.
36. G.B. PALMEGIANO, E. AGRADI, G. FORNERIS, **F. GAI**, L. GASCO, E. RIGAMONTI, B. SICURO & I. ZOCCARATO.(2005)Spirulina as a nutrient source in diets for growing sturgeon (*Acipenser baeri*). AQUACULTURE RESEARCH, 36:188-195.