CURRICULUM VITAE OF FRANCESCA TULLI

UNIVERSITY OF UDINE
hic sunt futura

Personal information

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Francesca Tulli is Associate Professor at the Department of Agriculture, Food, Environment and Animal Science of the University of Udine, Italy since 2016.

Education: PhD in Aquaculture at University of Florence, Italy defending a thesis entitled: "Dietary Essential Amino Acid Requirement in European Sea Bass (*D. labrax*)" and Master of Science in Biological Science at "La Sapienza" University of Roma, Rome, Italy

Teaching activity: Lecturing Analytical methods in aquaculture at the Master of Science in Animal Health and Breeding Bachelor degree course and Shellfish farming in the Specialization course in Acquacoltura, Igiene Patologia delle specie acquatiche e Controllo dei Prodotti derivati (AIPSAC) at the University of Udine;
-lecturing Shellfish farming (3 CFU) in the Master of Science in Aquaculture and Icthypathology at the University Alma Mater of Bologna, Italy
-lecturing Aquaculture Nutrition (5 CFU) in the Master of Science in Aquaculture at the University of Ghent (B) since 2019.

She is member of the Teaching Board of the PhD Course in Agronomic science and biotechnology based at the University of Udine since 2018.
Member of the Teaching Board of the PhD Course in Scienze delle Produzioni Animali e vegetali di qualità per la valorizzazione del territorio e la salvaguardia dell'ambiente (ex Acquacoltura e Qualità dei Prodotti) based at the University of Florence 20;

Ph.D. Supervisor:

-Tiziana Bongiorno, PhD in Food Science - University of Udine. Thesis Title: "Quality traits of Mediterranean mussels (*Mytilus galloprovincialis*) and valorisation of the product through sous vide technologies" Thesis submitted : March 2013 (Supervisor), granted as the best dissertation
-Enrico Daniso PhD in Agronomic science and biotechnology – Università di Udine
Thesis project "Detection and identification of insect compounds in fish diet" approved with honors
-Giulia Pascon PhD in Agronomic science and biotechnology – Università di Udine
Thesis project "Nutritional value and functional properties of insect meal in fish feeds" running at present

Scientific activity: Francesca Tulli's interest for topics applied to the production of marine biology emerged from her initial training at the University La Sapienza of Rome where she defended a dissertation on the parasitofauna of eurialine fish species reared in the Lake of Sabaudia (LT) and continued during the PhD

Course in Aquaculture (VII Cycle) of the University of Florence, partially carried out at the Institut National de la Recherche Agronomique (INRA) in France, estimating amino acid requirements of sea bass.
The topic of nutrition and feeding of fish species of interest for aquaculture remained a priority in the research activity supported by the study of the potentiality of shellfish farming in terms of the supply of quality fish products. The evaluation of innovative ingredients on nutrient utilization and fish metabolism is the actual focus progressively coupled with molecular tools.
The results of the research activity have been published in 200 contributions (2023) as journal articles or congress presentations (64 in Scopus).
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Citations 2246

Francesca Tulli has been involved as research responsible of the following projects:

- EU-POR/FESR TOXI POC - Sistema diagnostico Point-of-Care per la rilevazione di bio-tossine nella filiera alimentare marina. UO Responsible
- MIUR PON “Ricerca e Innovazione 2014 e 2020" del progetto "INTERVENTI A SUPPORTO DELLO SVILUPPO AVANZATO, INTEGRATO E SOSTENIBILE DELL'ACQUACOLTURA" – INSAIL UO Responsible (OR 5)
- Project Start up "Nutritive value of novel ingredients for aquafeeds: in vivo and in vitro evaluation" funded by Università di Udine - Scientific responsible
- Cariverona (2018) NUTRIFISH - Nuovi ingredienti per la produzione di specie ittiche pregiate Ref. 2017.0571;
- EU-EraNet COFASP (2016) MARINALGAE4AQUA – Marine algae as sustainable feed ingredients: improving their bio-utilisation to increase efficiency and quality of aquaculture production. Ref. 877/04/12/2015 UO Responsible (OR 3);
- EU-Capacities AQUAEXCEL (2014) Genetics for LC-PUFA increase Ref. 0101/06/01/11. Research Leader.
- Regione FVG Project L.R. 26/05 Innovation in organic aquaculture; UO Responsible
- Regione FVG Project L.R. 26/05 INNOVATIVE PER LA VALORIZZAZIONE DEI PRODOTTI DELLA MOLLUSCHICOLTURA CON METODICHE DI VALORIZZAZIONE E CONTROLLO " - TIMOTRAC UO Responsible
- Project Galileo Azioni Integrate Italia-Francia Fabbisogno e metabolismo dell’arginina nei pesci: connessioni con il ciclo dell’urea. Research Leader

Francesca Tulli was also involved as participant in several research projects funded by Fondazione AGER - Fondazione CARIVERONA – MIUR – EU/FAIR – EU PHARE CBC – MIPAF – Regione autonoma FVG

Organisation skills: Francesca Tulli is board member of
- Ente Tutela for the Fish Heritage of the Regione Autonoma Friuli Venezia Giulia (2010-2023),
- Commissione Pesca Regione autonoma Friuli Venezia Giulia (2023-)
- Italian National Aquaculture Mirror Platform (ITAQUA) established at CREA (Ministero delle Politiche Agricole, Alimentari, Forestali (MIPAAF)
- European Aquaculture Technological Platform (EATip) at the EU Commission.and as University of Udine representative

2010/13 and 2014/17 Responsible for foreign student exchange project ERASMUS+ from Cúkurova University in Adana (Turkey).

Reviewer activity: Reviewer for
-national and international journals (Aquaculture, Aquaculture international, Aquaculture Nutrition, British Journal of nutrition, Aquaculture Research, Fish and Shellfish Immunology, Food Bioscience, Italian Journal of Animal Science, Journal of Fish Biology, Lipids, Turkish Journal of Aquatic Science, Amino acid Review, Comparative Biochemistry and Physiology)
-research projects at national and EU level (expert ID EX2013D141093) for project PON, HORIZON2020, COST, PRIMA .

Scientific society affiliation European Aquaculture Society (EAS) (N. 2548)

Scientific Association of Animal Production (ASPA)
Società Italiana di Biologia Marina (SIBM)

Languages Italian (mothertongue); English (C1); French (B2)

Personal information: Married and Mother of 2 sons (18 and 21 yrs).

List of publications of the last five years
Researcher ID: B-7140-2013
Scopus Author ID: 6602759109

1. Daniso E., Uboni C., Cardinaletti G., Garlatti N., Tibaldi E., Luzzana U., Tulli F. 2023 Finishing diets to modulate flesh fatty acid composition and skin colour in gilthead seabream (Sparus aurata). Pasquale De Palo (2023) ASPA 25th Congress Book of Abstract, Italian Journal of Animal Science, 22:sup1, 1-3 Monopoli (BARI – ITALY), June 13–16, 2023 – IJAS 22, S1 https://doi.org/10.1080/1828051X.2023.2210877
2. Pascon G., Cardinaletti G., Messina M., Daniso E., Tibaldi E., Randazzo B., Tulli F. 2023. Effect of dietary chitin on growth performance, nutrient utilization and metabolic response in rainbow trout (Oncorhynchus mykiss) Proc. ASPA 25th Congress Monopoli (BARI – ITALY), June 13–16, 2023 – IJAS 22, S1 https://doi.org/10.1080/1828051X.2023.2210877
3. Daniso E., Susmel S., Melpignano P., Tulli F. 2023. Tetrodotoxin presence in mussels: rapid toxin detection based on a Point of Care immunoassayProc. ASPA 25th Congress Monopoli (BARI – ITALY), June 13–16, 2023 – IJAS 22, S1 https://doi.org/10.1080/1828051X.2023.221087
4. Messina M., Iacumin L., Pascon G., Tulli F., Tibaldi E., Cardinaletti G. (2023) Effect of feed restriction and refeeding on body condition, digestive functionality and intestinal microbiota in rainbow trout (Oncorhynchus mykiss). Fish Physiol. Biochem. https://doi.org/10.1007/s10695-023-01170-z
5. Tulli F., Pascon, G., Cardinaletti G. 2022 – Insect derived products in fish feeding: factors to consider. Proc. XVII FENACAM'22, 15-18 novembre 2022, Natal, Brasile (oral presentation)
6. SUSMEL S., DANISO E., COCCHI M., TULLI F.2022. IMMUNOASSAY OPTIMISATION FOR OKADAIC ACID DETECTION IN MUSSELS. Proc. 51° Congresso della Società Italiana di Biologia Marina (SIBM) Trieste 14 -17 giugno 2022.
7. Ajdini B., Biancarosa I, Illuminati S., Annibaldi A., Girolametti F., M. Fanelli1, Tulli F., Cardinaletti G., Truzzi C. (2022) Omega-3 enriched insect *Acheta domesticus* as a novel eco-sustainable food in Europe. Mass Spectrometry 7 Food Day, 5-7 ottobre 2022.
8. VIT M., BEN AISSA S., TULLI F. e SUSMEL S. 2022. OKADAIC ACID (OA) DETECTION: OPTIMISATION OF AN ELECTROCHEMICAL APTASENSOR. Proc. 51° Congresso della Società Italiana di Biologia Marina (SIBM) Trieste 14 -17 giugno 2022.
9. Messina M., Pascon G., Daniso E., Tibaldi E., Tulli F., 2022. EVALUATION OF CHITINOLYTIC ACTIVITIES IN THE DIGESTIVE TRACT OF EUROPEAN SEABASS (*DICENTRARCHUS LABRAX*). XX INTERNATIONAL SYMPOSIUM ON FISH NUTRITION AND FEEDING TOWARDS PRECISION FISH NUTRITION AND FEEDING Sorrento (ITALY), 5th 9th June 2022.
10. Addeo N.F., Randazzo B., Olivotto I., Messina M., Tulli F., Vozzo S., Attia Y.A., Mahayri T.M., Iannaccone F., Asiry K.A., Moniello G. .Bovera F., 2022. Low inclusion levels of *Tenebrio molitor* larvae in laying Japanese quail (*Coturnix japonica*, Gould, 1837) diet improve the intestinal morphometry , enzymatic activity and caecal short chain fatty acid profile. Research in Veterinary Science 149: 51-59 https://doi.org/10.1016/j.rvsc.2022.06.007
11. Bruni L., Milanovic V., Tulli F., Aquilanti L., Parisi G., 2022. Effect of diets containing full-fat Hermetia illucens on rainbow trout microbiota: A dual cultivation-independent approach with DGGE and NGS. Aquaculture 553, 738109 https://doi.org/10.1016/j.aquaculture.2022.738109
12. Girolametti F., Illuminati S., Annibaldi A., Olivotto I., Zarantoniello M., Tulli F., Cardinaletti G., Truzzi C. 2021. Fatty acid profile and quantification in *Danio rerio* reared on new eco-sustainable insect-based diets. 9th MS J-Day – I Giovani e la Spettrometria di Massa. 24-06-2021 - 2nd Online Edition
13. Cerri, R.; Niccolai, A.; Cardinaletti, G.; Tulli, F.; Mina, F.; Daniso, E.; Bongiorno, T.; Chini Zittelli, G., Biondi N., Tredici M.R., Tibaldi E. 2021. Chemical composition and apparent digestibility of a panel of dried microalgae and cyanobacteria biomasses in rainbow trout (Oncorhynchus mykiss). Aquaculture 544: 737075 https://doi.org/10.1016/j.aquaculture.2021.737075
14. Pascon G., Maria Messina M., Petit L., Valente L.M.P., Oliveira B., Przybyla C., Dutto G., Tulli F., 2021. POTENTIAL APPLICATION OF MARINE MICROALGAL BIOMASS PRODUCED IN A HIGH RATE ALGAL

POND (HRAP) IN AQUAFEEDS. Environmental Science and Pollution Research https://doi.org/10.1007/s11356-021-14927-x

15. Addeo N.F., Randazzo B., Olivotto I., Messina M., Tulli F., Musco N., Piccolo G., Nizza A., Di Meo C., Bovera F., 2021. Replacing maize grain with ancient wheat lines by-products in organic laying hens diet affects intestinal morphology and enzymatic activity. Sustainability (Switzerland), 13 (12), 6554. https://doi.org/10.3390/su13126554

16. Bruni L., Husein Y., Secci G., Tulli F., Parisi G., 2021 Rainbow trout (*Oncorhynchus mykiss*) skin as potential n-3 fatty acid source. Waste and biomass valorization https://doi.org/10.1007/s12649-021-01384-3

17. Zarantoniello M., Randazzo B., Nozzi V., Truzzi C., Giorgini E., Cardinaletti G., Freddi L., Ratti S., Girolametti F., Osimani A., Notarstefano V., Milanović V., Riolo P., Isidoro N., Tulli F., Gioacchini G., Olivotto I., 2021. Physiological responses of Siberian sturgeon (Acipenser baerii) juveniles fed on full-fat insect-based diet in an aquaponic system. Sci Rep 11 (1) 1057. https://doi.org/10.1038/s41598-020-80379-x

18. Valente, L.M.P, Batista, S, Ribeiro, C., Pereira, R., Oliveira, B., Garrido, I., Baião, L.F., Tulli, F., Messina, M., Pierre, R., Abreu, H., Pintado, M., Kiron, V. 2021. Physical processing or supplementation of feeds with phytogenic compounds, alginate oligosaccharide or nucleotides as methods to improve the utilization of Gracilaria gracilis by juvenile European seabass (Dicentrarchus labrax). Aquaculture, 530, https://doi.org/10.1016/j.aquaculture.2020.735914

19. Tulli F., J.M. Moreno-Rojas Messina C.M., Trocino A., Xiccato G., Muñoz-Redondo J.M., Santulli A., Tibaldi E., 2020. The use of stable isotope ratio analysis to trace European sea bass (*D. labrax*) originating from different farming systems. Animals 10 (11): 1-15 https://doi.org/10.3390/ani10112042

20. Bani P., Danieli P.P., De Angeli A., Fortina R., Gasco L., Marino R., Parisi G., Prandini A., Tulli F., 2020. Protein hunger of the feed sector: the alternatives offered by the animal world. It.J.Anim. Sci. DOI: https://doi.org/10.1080/1828051X.2020.1827993

21. Bruni L., Cardinaletti G., Mina F., Olivotto I., Parisi G., Randazzo B., Secci G., Tulli F., Zarantoniello M. 2020. Dietary inclusion of full-fat *Hermetia illucens* prepupae meal in practical diets for rainbow trout (*Oncorhynchus mykiss*) do not impair fillet quality: lipid metabolism investigations. Aquaculture 529 DOI: https://doi.org/10.1016/j.aquaculture.2020.735678

22. Zarantoniello M., Randazzo B., Gioacchini G., Truzzi C., Giorgini E., Riolo P., Gioia G., Bertolucci C., Osimani A., Cardinaletti G., Lucon-Xiccato T., Milanović V., Annibaldi A., Tulli F., Notarstefano V., Ruschioni S., Clementi F. & Olivotto I. 2020. Zebrafish (Danio rerio) physiological and behavioural responses to insect-based diets: a multidisciplinary approach. Scientific Report 10(1),10648 DOI: https://doi.org/10.1038/s41598-020-67740-w

23. Batista S., Pintado M., Marques A., Abreu H., Silva J.L., Jessen F., Tulli F., Valente, L.M.P. 2020. Use of technological processing of seaweed and microalgae as strategy to improve their apparent digestibility coefficients in European seabass (*Dicentrarchus labrax*) juveniles. JAPH DOI: https://doi.org/10.1007/s10811-020-02185-2

24. Daniso E., Tulli F., Cardinaletti G., Cerri R., Tibaldi E. 2020. Molecular approach for insect detection in feed and food: the case of *Gryllodes sigillatus*. European Food Research and Technology 246 (12): 2373-2381 DOI: https://doi.org/10.1007/s00217-020-03573-1

25. Batista S., Pereira R., Oliveira B., Baião L.F., Flemming J., Tulli F., Messina M., Silva J.L., Abreu H., Valente L.M.P., **2020**. "EXPLORING THE POTENTIAL OF *Gracilaria gracilis* AND *Nannochloropsis oceanica*, SINGLE OR BLENDED, AS NATURAL INGREDIENTS FOR EUROPEAN SEA BASS DIETS" J. Applied Phycology DOI: https://doi.org/10.1007/s10811-020-02118-z

26. Valente et al., 2019. EAS Abstract 490

27. Nassivera F., Tulli F., Tibaldi E. 2019. Millennials' attitudes towards insects as feed for sustainable fish. I.J.A.S. 18 (suppl.1) Proceeding of ASPA 23rd Congress, June 11-14, 2019, Sorrento (NA) Oral comm. O073

28. Daniso E., Messina M., Tulli F. 2019. Molecular based identification of insect ingredients in animal feed. I.J.A.S. 18 (suppl.1) Proceeding of ASPA 23rd Congress, June 11-14, 2019, Sorrento (NA) Oral comm.O074

29. Parisi, G., Tulli, F., Fortina, R., Marino, R., Bani, P., Dalle Zotte, A., De Angeli, A., Piccolo, G., Pinotti, L., Schiavone, A., Terova, G., Prandini, A., Gasco, L., Roncarati, A., Danieli, P.P. 2020. Protein hunger of the feed sector: the alternatives offered by the plant world. It. J. Anim. Sci., 19(1): 1205–1227 doi: https://doi.org/10.1080/1828051X.2020.1827993

30. Daniso E., Melpignano P., Tulli F. **2020**. AN OLED-BASED GENOSENSOR for the DETECTION OF *HERMETIA ILLUCENS* IN FEEDS. Food Control 113: DOI: https://doi.org/10.1016/j.foodcont.2020.107179

31. GASCO, L. ACUTI, G., Bani, P., Dalle Zotte, A., Danieli, P.P., De Angelis, A., Fortina, R., Marino, M.R., Parisi, G., Piccolo, G., Pinotti, L., Prandini, A., Schiavone, A., Terova, G., Tulli, F.; Roncarati, A., **2020**. Insects and fish by-products as sustainable alternatives to conventional animal proteins in animal nutrition JAS-2020-0032 Doi: https://doi.org/10.1080/1828051X.2020.1743209

32. Zarantoniello, M., Randazzo, B., Truzzi, C., Giorgini, E., Marcellucci, C., Vargas-Abúndez, J.A., Zimbelli, A., Annibaldi, A., Parisi, G., Tulli, F., Riolo, P., Olivotto, I. 2019. A six-months study on Black Soldier Fly (*Hermetia illucens*) based diets in zebrafish. Scientific reports 9 (1) Article number 8598 DOI: https://doi.org/10.1038/s41598-019-45172-5

33. Zarantoniello, M., Zimbelli, A., Randazzo, B., Compagni, M.D., Truzzi, C., Antonucci, M., Riolo, P., Loreto, N., Osimani, A., Milanović, V., Giorgini, E., Cardinaletti, G., Tulli, F., Cipriani, R., Gioacchini, G., Olivotto, I. 2019, Black Soldier Fly (*Hermetia illucens*) reared on roasted coffee by-product and *Schizochytrium* sp. as a sustainable terrestrial ingredient for aquafeeds production. Aquaculture 518: DOI: https:doi.org/10.1016/j.aquaculture.2019.734659

34. Cardinaletti G., Randazzo B., Messina M., Zarantoniello M., Giorgini E., Zimbelli A., Bruni L., Parisi G., Olivotto I., Tulli F. 2019. Effects of dietary inclusion level of full fat *Hermetia illucens* prepupae meal in rainbow trout: growth response and gastrointestinal integrity evaluation. Animals 9 (5), 251-260. DOI: 10.3390/ani9050251

35. Moniello, G., Ariano, A., Panettieri, V., Tulli, F., Olivotto, I., Messina, M., Randazzo, B., Severino, L., Piccolo, G., Musco, N., Addeo, N.F., Hassoun, G., Bovera, F. 2019. Intestinal morphometry, enzymatic and microbial activity in laying hens fed different levels of a *Hermetia illucens* larvae meal and toxic elements content of the insect meal and diets. Animals 9 (3) 86-92. https:doi.org/10.3390/ani9030086

36. Tulli F., Randazzo B., Messina M., Giorgini E., Carletti A., Calloni L., Pelosi M., Mina F., Olivotto I., Cardinaletti G. 2019. Inclusion of full fat *Hermetia illucens* prepupae meal in rainbow trout (*O. mykiss*) diet: effect on growth response and gut health evaluation. Proc. International Conference on Marine Science & Aquaculture, 12-14 March 2019, Kota Kinabalu, Sabah, Malaysia (oral presentation)